

FARM.

Why Manure is Necessary.

Ask the majority of farmers why they use manures, and their answer will be, "To produce heavier crops." This answer may be correct in the abstract, but then there is nothing in it which explains why soil requires the aid of manure in producing a crop, or how the manure assists crop production. There is a why and a wherefore for the universal custom of manuring or fertilizing the soil, and the thinking farmer investigates these, and is never content until he gets down to the bottom of the facts and employs certain means to accomplish certain desired ends.

The growth of a crop necessitates a supply of all the several materials that are built up in it, in proper condition and due proportion, just as does the building of a house or barn necessitates the provision of the proper materials in quality and quantity for its construction. If all the materials necessary for the growth of a particular crop are not present in the soil, the plants produced are imperfect, just as when the builder runs short of material his work is bound to be slighted, unless a fresh supply is furnished.

When successive crops have exhausted the soil of certain elements of plant food, its work of producing crops must cease until this loss is made good some way or other. This deficiency is usually supplied either by applying barnyard manures, plowing in green crops, or using commercial fertilizers. A slower but surer process would be to let the land go back to its natural state, to allow it to grow up with trees and grass, when in due process of time it would again be restored to fertility by the annual deposits of leaves, decayed branches and trunks of trees, together with the natural development of plant food in the soil; but this latter method is wholly impracticable on the farm, and we must resort to some sort of manuring process to make good the wastes of plant food that are all the while going on.

Through the wise provision of nature no two kinds of farm crops feed alike, or take the same kind of material from the soil. A manure or fertilizer must be applied to return what we have taken from the land, without which farming cannot be carried on profitably. Just what needs to be put back, and how these elements are to be obtained most economically, are questions to be solved by the agriculturist himself, as the case may be, and here we have room for thought as well as for muscular labor. Some idea of the amount of inorganic and mineral matter taken from the soil by a single crop of wheat may be gained by the following analysis of 25 bushels of grain and 3,000 pounds of straw, or a good average crop on good lands. This amount is found to contain about 26 pounds of potash, 10 of lime, 20 of phosphoric acid, 6 of sulphuric acid, besides considerable quantities of salt, iron, soda and magnesia. All these ingredients must be in the soil in a soluble form to secure a luxuriant growth of wheat. If any of these elements of plant food are deficient, the crop cannot make a luxuriant or even average growth. But we should remember that just as surely as we annually sell products from our farms, we are using up steadily the materials from which they were produced, and we must keep the storehouse full or our labors on the farm will not be properly rewarded.

This depleting process is what gives us so much worn-out land all over the country. Manures made on the farm are indispensable, and their production should be encouraged; but they are not always produced in sufficient quantities, and when a commercial fertilizer can be purchased, it is best to make good the annual drain made by exporting grain from the farm.

Lands Sold Since Jan., 1892, by the Canadian Pacific Railway Co.,

TO U. S. SETTLERS ARRIVING FROM THE U. S.

The demand for land has been very general throughout the whole country. The new districts which have been attracting buyers this year are particularly the country beyond Melita recently opened up by the line to Estevan, and Northern Alberta tributary to the Calgary and Edmonton road. The last mentioned district has proved particularly attractive to new settlers who wish to secure free grant lands. Good free grant lands can still be had there within convenient distance of railway stations, which is not the case in Manitoba, where the desirable Government lands within easy access of the railway are practically exhausted. The sales made to settlers from the United States are given in detail, with the States from which the purchasers have come:—

Dakota	225	sections of 160 acres	36,000 acres.
Idaho	36	"	8,960 "
Michigan	1	"	160 "
Minnesota	27	"	4,320 "
Nebraska	13	"	2,080 "
Washington	200	"	32,000 "
Wisconsin	6	"	960 "
Oregon	2	"	320 "
Indiana	1	"	160 "
New York	1	"	160 "
Kansas	3	"	480 "
Montana	1	"	160 "
	336		85,760 acres.

How to Utilize Old Barns.

The main feature for the majority of farmers to consider in laying out plans for barn buildings should be to keep the cost as low as possible, and yet provide the necessary room for the stock. At the same time the comfort of the inmates and convenience in attending to them must not be lost sight of. Room must be provided for storing the required feed that will keep the stock supplied during the winter. Space for grain before threshing is considered necessary in these barns, while in many cases storage room for straw, with compartments for saving chaff at threshing, should also be provided; next, the granary and silo, if the latter is intended to be placed in the barn.

Many of those contemplating building are in the same position that I was, with a barn in good repair, yet lacking in storage room and not of sufficient width to advantageously arrange the basement for stock under the building.

Much of the difficulty of building at this day is found in supplying the timber necessary, and in many instances this item is the most difficult to provide. Where buildings have been properly kept in repair, the sills kept off the ground, proper attention having been paid to the roofs, these old frames will generally be sound; and yet, if they are pulled down, are practically worthless, as little use can be made of the timber, because they are not of a suitable length, and however carefully the lumber is taken from the buildings, much of it is destroyed,

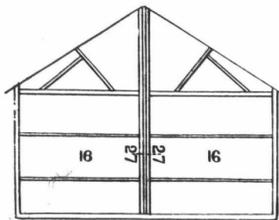


FIG. 1.

and does not cut much of a figure in the estimate required upon a new building. In taking this view of the matter, a great number of plans have been suggested in utilizing old buildings by adding to them, and thus providing the necessary room. Of these there is a plan that I followed which is easily put in practice, and which gives the most satisfactory results, and by this means the most may be made of the barn buildings that have already been doing duty.

First, a calculation must be made of what space will be required in the basement for stables for the stock intended to be kept, and the estimate taken of what room is required for storage above. In calculating the width above, there is a difference for what purpose the stabling is intended to be used. For instance, a dairy barn requires different laying out than that intended for a breeding barn, while one intended for fattening cattle should be differently arranged from either; and if these points are not calculated there will be found the posts blocking the passages below that so often deface the interior of really good basement stables, and which a little forethought will easily arrange so as to have them placed where they do not encumber the space.

Again, where stone, brick, or other expensive walls are built, it will always be found to economize space to have the building of sufficient width, and it is difficult to lay out the interior of a basement to advantage where it is less than forty-five or fifty feet, depending upon the purpose for which it is intended to be used.

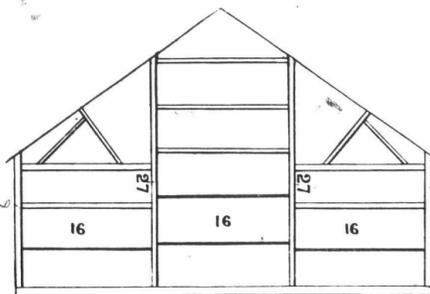


FIG. 2.

The general plan followed for increasing the width of a frame is to build a lean-to along the side; but, however high the posts of the original building, it does not allow enough head room to make use of the space above, nor does it allow height enough for a door. Therefore, there is very little gain in the space added above. A far better way to form the necessary width is to place the addition in the centre, as shown in illustration (fig. 2); by this plan it is much easier executed, and leaves the roof, the siding and the doors intact. The mode of procedure in this case I adopted is as follows: The barn I intended to be enlarged was thirty-two feet wide and seventy-five feet in length, and I wished the building required to be forty-eight feet in width. The wall posts are sixteen feet (about a common height in some localities), and there are hundreds such throughout the country which do not by any means supply the wants of the farms they are on. The width of the old building was thirty-two feet, and

the pitch of the roof was what is known as one-third, which in this case would be slightly less than eleven feet, which, added to the height of the wall, will make the peak twenty-seven feet high. This barn has six bents; therefore, twelve pieces of timber twenty-seven feet long by eight by eight inches square were procured. On these tenons were cut in the top to enter mortices in the purline plate, and the mortices must also be cut for the tie girts that are to fasten the future building together; then this upright post was halved into the cross beam. The two middle boards were first taken off from each end of the barn, and all the boards loosened from the end sill, in order to raise the cross beam far enough to get the old centre post out. The girts also had to be cut. The post then was raised to place it on the sill for which a mortice had been cut, the girts entered, and the post bolted to the cross beam, and proceed so until all the posts are in position. The purline plates were then raised on to the old cross beams, in readiness to raise on to the posts. A number of men got upon the peak of the roof, and with crow bars separated the rafters where joined and pried them up, and supported them high enough to enable the purline plate to be placed upon the posts and the rafters let down to their place on plate. When this was finished on both sides, the end view of building appeared as in fig. 1.

The next proceeding is to take a cross-cut saw and cut the beams between the posts and the sills at the same point. Then the building was in readiness to move, and hitched on with the moving apparatus and drawn apart, the tie girts placed in position and pinned fast; the centre tier of rafters was placed in position, and the frame was again intact. The frame is now in much the same shape in which most builders lay out the frames for large barn buildings, as the tie girts between the purline posts secure the building from any possibility of spreading. This way of adding may be applied to any building that requires a greater width; is more easily performed, does not injure the siding or roof, gives the addition at the greatest height, and therefore has double the advantages of any other mode of expansion.

The Coast and Islands of the New Westminster District of British Columbia.

BY W. FERGUSON, VANCOUVER, B. C.

Until lately comparatively little has been known outside of this province of the great advantages which the coast and islands of the New Westminster district of British Columbia offer to settlers, either in the agricultural or grazing lines. Within the last two years a large amount of the land nearest the principal cities has been taken up and settled, but a great area is still available for settlement that can be brought under cultivation or utilized for grazing purposes. Intending settlers can either purchase partially improved farms at prices varying from \$5 per acre upwards, or can pre-empt government lands as *bona fide* settlers. In the latter case it is always well for new comers to procure the assistance of some reliable location agent, whose knowledge of the country would save the intending settler much loss of time, annoyance and money in making a selection of his claim. As regards the capabilities of this section, I glean the following from reports of practical men who have been long settled in the country:—All fruits, and vegetables as well, being in quality ahead of those of the far-famed Fraser River Valley, and the yield is unrivalled. Particular mention may be made of the raising of tomatoes on the Islands of the Gulf. This branch of horticulture has been tried as an experiment well calculated to test the possibilities of the land, and the success met with was far ahead of the most sanguine expectation entertained. The fruit ripens earlier than on the mainland, owing to increased sunlight, and possesses a much superior flavor. The growth of strawberries along the water front is something phenomenal, and it is difficult to give a just idea of the productiveness of the land in this locality. The climate is much milder than that of any other part of the Dominion. Snow and frost are practically unknown on the Islands. Cattle, sheep and poultry thrive well; sheep-raising especially offers a splendid field for investment. On Savary Island, the property of Mr. J. Green, the increase of sheep has exceeded one hundred per cent., and in one instance he has shown a flock of twenty ewes with thirty-eight lambs. When it is remembered that the mild winters of this favored region render it unnecessary to put up any feed, it will be seen that there is an unparalleled chance for a practical farmer with very moderate capital to do an excellent business. Sheep, hogs and poultry find a ready market in the cities adjacent, there being excellent steamboat communication. The cities of Vancouver, Victoria, Nanaimo and New Westminster are at present supplied mainly from the Northwest and from Oregon and Washington, and it is only of recent date that the fact has begun to be recognized of there being at our very doors the means of producing everything necessary for home consumption. An industrious man with a little capital can find no better location than the section of country herein described.