

period. The endeavor should first be to swell the digestive system with a bulky and succulent food ration, and afterwards gradually increase the quantity of meal until the limit which the animal will properly digest and assimilate is reached. In the feeding of grain, animals should never be confined to any single variety at any one time. Much better results will be obtained by always feeding a judicious mixture of the grains. Many farmers, too, do not yet realize the feeding value of our common millfeeds, bran and shorts.

The ration being fed at present is a mixture of oats, barley and wheat, grown together, and ground and fed along with shorts. Later on the quantity of wheat will be increased, or ground peas will be added. Oil cake is sometimes fed, but it is not being used just now. Cottonseed meal has not been much used.

During the time, and with the ration indicated, to the animals finished in the stable, an average gain over the whole herd of from 240 to 304½ pounds has been obtained. In the face of these facts, when I hear men say that from a number of animals they get during the whole feeding period an average daily gain of 2½ to 2½ pounds per day, I simply do not believe it. My own experience will not allow me to believe it. An average daily gain of 2½ to 2½ pounds per day during a six months winter feeding period may be obtained in the case of individuals, but not from a whole herd.

The animals finished on grass, and placed on the market in July give a rather better gain upon the whole, and, as the result of experience, taking every consideration into account, if suitable pasture is provided, the preference rests with the system of finishing on grass.

In the stable, the animals are fed three times each day. Most of them are housed in loose boxes, and to all free access to water is provided. Feeding loose is preferred.

Ventilation should be provided by means of large tile or holes in the bottom of the wall for intakes, so constructed that there will be no draft on the animals, with sufficient ventilator space from the ceiling upwards to allow the escape of the foul air.

Great care must be exercised in maintaining the atmosphere of the stables at a proper temperature. So long as the water system in the stable does not freeze, if the animals are protected from drafts, there is no danger of the stables getting or being too cold.

The manure is taken from the loose boxes twice a week, and spread directly upon the land, and the animals are each time given sufficient litter at once.

During the past six years, the spread between the buying and selling price has been all the way from 77 cents per cwt. in 1910-11, to \$3.17 per cwt., in 1909-10. In order to have a satisfactory profit, \$1.50 per cwt. should be obtained, but the last ten years has shown me that a margin of \$1.00 per cwt. will, on the average, return market price for food consumed, and anything obtained over and above that has been looked upon with favor.

On the average, well-advanced yearlings and two-year-olds have made greater gains than older animals.

While the returns of the business do not create millionaires, yet, with the exercise of judgment in selection, care and consideration in the feeding and general management, the whole system is one fascinating to the husbandman who is in love with live stock, agriculture, and who appreciates the freedom and enjoyment of a country life.

Huron Co., Ont.

THOS. McMILLAN.

Keep Salt Before Stock.

Farm animals have an instinctive craving for salt. If it is so placed as to be always within their reach, they will consume just as much as they need, and seldom, if ever, any more. When it has been kept from them for a long period, there is danger of their eating too much. It is, therefore, an excellent practice to keep it in a box or boxes, where they can have access to it whenever they desire. When they are salted, as is the practice with many farmers, only once a week, while some may get enough, others may suffer from a deficient supply. Salt is so cheap that no stock-raiser can really afford to deny to his animals all they want of it.

The way the feed goes this winter is alarming to those who figured closely last fall on the amount of stock they could carry through. We do not remember ever having seen the crops piled up so uniformly and regularly as they are this winter. The feed—what there is of it—is mostly of excellent quality, partly because the hay, cold weather whets appetite, which is a very good thing else, perhaps, is that keenness of appetite which comes from limitation of rations. The lesson of clean mangers has seldom been so emphatically enforced.

THE FARM.

Elevated Cement Tanks.

A reader of "The Farmer's Advocate" wishes to erect an elevated water tank, and has been advised to build it of cement-concrete, silo fashion, constructing a reinforced concrete floor at whatever height he may wish to have the bottom of his water tank, and using the space beneath for purposes of miscellaneous storage. He is afraid the water would freeze almost solid in a winter like the present one, thus greatly reducing, for the time being, the available capacity of the tank, and possibly bursting the walls asunder, or at least checking them so that they would leak. He would like to hear, as we would, from a number of persons who have had such tanks in use for some length of time, stating (a) when built, purpose for which used, approximate temperature of the water going into the tank, and the amount daily drawn off, also the means of supply—windmill or engine; (b) the height, diameter and capacity of tank; (c) thickness of walls, material and the proportions of cement to aggregate, how mixed (sloppy or dry enough to tamp), and whether plastered inside and outside, or not; (d) whether tank is covered, and if so, with what kind of roof (e) locality of district, exposure of site, and lowest temperature to which tank has been subjected while containing water; (f) extent to which ice forms on the inside of this tank, evidence of strain or deterioration, if any, and owner's critical opinion as to advantages and disadvantages of such a tank. Any persons having experience, whether favorable or unfavorable, will confer a favor by writing us concerning these and any other points that may occur to them.

Plank Frame Barn, 40 x 60.

What will it cost me to build a barn 40 x 60 feet, with stone wall and ordinary stables, but no wall under south side, and what stuff do I need if I buy matched lumber and shingles? I have quite a lot of timber on my farm. Should I build plank-frame or timber? Would small timber, 6 or 8 inches, do for frame? I want gable roof, and want the barn painted.

C. R. I.

I would advise you to build a plank-frame, both from a point of economy, as well as strength. The accompanying bills of material will give you an idea of the difference in cost between a plank and a timber frame for material alone, while in the cost of framing there is a still greater difference, for I and four men who had never seen a plank frame before cut and put together a frame 42 x 120 feet in three days, and raised it all complete in less than a day, placing every rafter and brace. This may seem rather fast work, but I can substantiate this if anyone cares to write me for the address of the farmer for whom I did the work. This will give an idea of the time required to do the framing, and the bill of material will show the saving in cost.

By looking over the elevations of one of these frames, any carpenter can frame it, and at different times drawings of these frames and descriptions have appeared in "The Farmer's Advocate."

BILL OF MATERIAL FOR A PLANK FRAME 40x60x16 FEET HIGH.

Two End Bents:	Sq. ft.
16 pcs. 2x8 in. x 16 ft., end posts.....	336
8 " 2x8 in. x 27 ft., purline posts.....	288
6 " 2x8 in. x 14 ft., end sill.....	108
6 " 2x8 in. x 14 ft., end sill.....	54
6 " 2x6 in. x 14 ft., end sill.....	84
12 " 2x8 in. x 14 ft., end beams.....	216
2 " 2x12 in. x 24 ft., end beams stiffener.....	96
4 " 2x6 in. x 10 ft., end purline brace.....	40
5 " 2x8 in. x 18 ft., end gable stiffener.....	96
18 " 2x6 in. x 14 ft., end girths.....	252
4 " 2x6 in. x 16 ft., end gable girths.....	64
2 " 2x6 in. x 22 ft., end gable girths.....	44
2 " 2x6 in. x 14 ft., end gable girths.....	28
	1,706

Three Interior Bents:	Sq. ft.
12 pcs. 2x8 in. x 16 ft., side posts.....	252
12 " 2x8 in. x 27 ft., purline posts.....	432
6 " 2x10 in. x 28 ft., roof supports.....	276
6 " 2x8 in. x 24 ft., sub supports.....	192
12 " 2x4 in. x 4 ft., struts.....	36
6 " 2x6 in. x 7 ft., ties.....	54
6 " 2x6 in. x 5 ft., ties.....	30
6 " 2x6 in. x 4 ft., ties.....	24
6 " 2x6 in. x 5 ft., collar ties.....	60
	1,356

Side Timbers:

	Sq. ft.
8 pcs. 2x8 in. x 15 ft., side sills.....	152
8 " 1x8 in. x 15 ft., side sills.....	80
8 " 2x6 in. x 15 ft., side sills.....	120
6 " 2x6 in. x 15 ft., side girths.....	90
3 " 2x6 in. x 15 ft., side girths.....	42
12 " 2x6 in. x 16 ft., side girths.....	352
4 " 2x8 in. x 15 ft., side plates.....	80
4 " 2x8 in. x 14 ft., side plates.....	72
8 " 2x8 in. x 16 ft., side plates.....	168
2 " 2x10 in. x 24 ft., side plates.....	80
2 " 2x10 in. x 15 ft., side plates.....	48
2 " 2x10 in. x 22 ft., side plates.....	72
4 " 2x8 in. x 15 ft., purline plate.....	86
4 " 2x8 in. x 14 ft., purline plate.....	72
8 " 2x8 in. x 16 ft., purline plate.....	168
6 " 2x8 in. x 6 ft., pur. plate splicing pcs.....	48
4 " 2x8 in. x 3 ft., purline plate end fillers.....	22
16 " 2x6 in. x 6 ft., purline plate braces.....	96
6 " 2x6 in. x 16 ft., side uprights.....	96
12 " 2x6 in. x 18 ft., side braces.....	216

Total 5,109

TIMBER FRAME.

	Sq. ft.
2 pcs. 8x8 in. x 60 ft., side sills.....	640
2 " 8x8 in. x 40 ft., end sills.....	422
3 " 8x8 in. x 40 ft., cross sills.....	636
2 " 8x8 in. x 60 ft., main plates.....	640
2 " 7x7 in. x 60 ft., purline plates.....	450
5 " 8x8 in. x 40 ft., beams.....	1,060
10 " 8x8 in. x 16 ft., posts.....	850
10 " 8x8 in. x 12 ft., purline posts.....	640
5 " 7x7 in. x 24 ft., purline beams.....	490
5 " 8x8 in. x 12 ft., centre posts.....	320
8 " 6x6 in. x 20 ft., end girths.....	240
4 " 6x6 in. x 24 ft., end girths.....	288
2 " 5x5 in. x 16 ft., end girths.....	66
4 " 5x5 in. x 8 ft., end girths.....	164
6 " 5x5 in. x 15 ft., side girths.....	186
3 " 5x5 in. x 14 ft., side girths.....	81
12 " 5x5 in. x 16 ft., side girths.....	396
15 " 3x4 in. x 12 ft., brace stuff.....	150

Total 8,114

8,114 sq. ft., at \$20 per M.....\$162.28

5,109 sq. ft., at \$20 per M..... 102.32

A saving of \$ 51.94
on timber of frame.

The comparison shows a saving of \$51.94 on the frame stuff, and I have used the very lightest material in the timber frame, and this is only a small saving in comparison to the labor of framing, on which there will be at least \$80 saved, making over \$130 saved on a small building like this. Besides the saving, the result is a better frame in every way.

Your barn will take 4,608 square feet of matched lumber on the walls. The roof will require 3,840 square feet, and 31 M. shingles, exposed 5 inches; 5,000 ft. will lay the floors two thicknesses.

This building will cost you in the neighborhood of \$2,000, but if you do some of the work yourself, you can lower the cost considerably, as the above is for all the work hired done.

Huntingdon Co., Que.

A. A. GILMORE.

What Makes Soils Productive.

"Any soil which was once rich can again be made rich," is the declaration made by Professor Alfred Vivian, acting dean of the College of Agriculture, Ohio State University, in a recent address. The principal factor concerned in the restoration of soil fertility, according to Professor Vivian, is organic matter. "The destruction of organic matter, by cultivation and otherwise, is largely responsible for the depletion of our soils," said he. "This organic matter must be restored if we expect our farms to be productive. What does organic matter do? It increases the power of the soil, helps to control soil temperature, and is a storehouse of plant food. How can organic matter be restored to the soil? By saving all animal manures and putting them onto the land; by making use of all crop residues—that is, putting back into the soil everything that is not used for feed; by turning under green manuring and catch-crops."

It is taking a long time to disabuse the minds of our farmers of the old idea that land left to forestry is practically land left to waste. But more and more the truth is gaining ground that trees, in the long run, are one of the most profitable of crops, especially on rough land, and that the devotion of land to timber-raising serves a most useful purpose in the economy of the universe.—(C. R. Barnes, Minnesota College of Agriculture.)