

of 16,000 lbs. of milk in 12 months but this does not put him out of the working class, and he has to take his turn on the tread power two or three times every week. This he has done for two winters. He is two years old and sometimes has cut a load of soft wood all alone. I have seen him chew his cud for an hour steady walking about three miles an hour. We also drive a cutting box, 12-inch mouth, and can cut hay or straw as fast as a man can pitch it comfortably when we have everything running right. I figure that it will do easily the work of a six horse-power engine, and some men say ten. All you have to do is to drive them on and release the brake. We would not be without it for many times its cost, and with a sharp saw it will handle body hard wood six inches through as fast as hands can put it to it. We have a small pumping mill eight feet for pumping with and believe that with these two, the tread for heavy work, and the windmill for pumping, we have the cheapest combination possible, because we are utilizing the power which we already have, or rather which would go to waste, but still we would throw our hats up for Hydro and public ownership, and, say we, more power to Sir Adam's elbow.

York Co., Ont.

CHAS. W. GANE.

Plowing Down Rye a Success With Potatoes.

Editor "The Farmer's Advocate":

Dear Sir:—As this is the slack season I have time to write a few lines. I appreciate the farmers' letters in your paper very much and I feel it is a pleasure, perhaps a duty, to do my part if it is possible, towards added interest in its pages to some one.

Several things occurred last summer worthy of perhaps a moment's notice on my little farm and I believe we as farmers should be more like brothers telling one another of our real good things, and sympathizing and helpful to each other in our troubles, I wish to mention several of the real good things I found recently.

Last May, after seeding, being rather scarce of manure for my prospective potato patch, I arranged my plans thus: I wanted about three acres; I only had about 40 loads. I planted one acre by turning under well-worked soil and 30 waggon loads of manure and as I had heard of people ploughing rye under, and the owner before me having sown some the previous fall I ploughed under 1½ acres the 6th, 7th, 8th of June. It was 6 ft. tall out in head and I planted as I ploughed and after harrowing top-dressed with 12 loads of manure per acre. These plots were close together and results made me feel quite friendly toward the rye.

On the first heavily manured piece I had 140 bags salable potatoes but the dirt clung to them rather too much. Sandy loam inclining toward clay loam would be descriptive of the soil. In my rye field I had 180 bags of cleaner potatoes owing to the rye in which the potatoes seemed to lay, the rye straw still partially remaining and keeping the dirt from coming in contact with the potato. I wish to recommend the rye especially in soil inclined to clay. In sandy soil I would turn it under about the 24th of May, as it would rot more quickly and help feed the ground and in clay soils the heavier the soil the longer I would wait as the feeding of the soil is then probably not so important as to aerate and sweeten and to keep from baking is more necessary also it would have a tendency to cause the clay to warm up faster and then last of all, the more matured; when plowed under, more complete would be the wrapping up of the potatoes and when dug they shine from afar in their whiteness a wrapping not done by expensive hired help as they do in apple districts with fancy boxed apples but done day by day by nature. Is this not important, nature wrapping, cleaning, making ready for the market basket? Quality counts now—days, not quantity.

Dufferin Co., Ont.

FRANKLIN E. C. BETTSCHEN.

The big battleship seems but a poor match for the submarine, and some experts claim that with the fortress the dreadnaught is soon to be a thing of the past. It is believed that there is more chance of improvement in submarines and big guns than in battleships and forts. Inventions to destroy life may yet prove the main factor in a permanent peace.

Some of the awfulness of heavy artillery bombardment may be imagined from the statement that the projectile from a 42 centimeter gun bursting in a beet field made an excavation twenty-one feet deep and over sixty feet across the top, and the earth removed was so evenly and far distributed that its whereabouts could not be noticed. No wonder fortresses are obsolete.

Some Hints on the Value and Storage of Ice on the Farm.

Editor "The Farmer's Advocate":

Winter is here again, and it spells out "business as usual" for Jack Frost is evidently working overtime just now in his persistent efforts to produce the earliest and best crop of ice that we have ever had on our ponds, lakes and streams. I am sure that the commercial ice-men are realizing the value of these "cold snaps" to their business next summer, but I am not so sure that all our farmers are alive to the value of ice in their business, and fear they are not taking advantage of these days to make preparations to store the crop which nature is so bountifully providing, hence this article.

Ice may be put to many valuable uses on the farm, chief of which are the following:—to cool quickly the milk after it is drawn from the cows, and thus make possible its preservation in good condition until disposed of; to "hold" sweet cream; to keep butter, eggs, fresh meats, and fruits in the hot season and thus to have a greater variety and a more nourishing quality of food for the table use, and to provide available means for making ice cream, cool drinks, and other delicacies that too few of our country folk enjoy very often during the hottest and busiest season of the year. A very large proportion of our farmers may enjoy all these benefits for good ice is usually accessible in most districts, and the ice house, refrigerator and ice-cold-water tank are inexpensive items of the farm equipment. Let us make the ice harvest a record-breaker this winter and give the uses of ice a fair trial next summer.

Some of our readers, however, may not have an ice house, but, perhaps, would desire to store a quantity of ice this winter for the first time. It is not too late yet to provide a suitable ice house for a temporary one may be made with little trouble or expense in the woodshed, under

1 foot wide on each of the four sides and the bottom, and 2 feet on the top of the ice for sawdust. Thus if 20 tons of ice are needed the ice house would have to be 12 feet square and 12 feet high, inside dimensions, to accommodate the mass of ice which would occupy 20 x 45 or 900 cubic feet, or a space 10 ft. by 10 ft. by 9 ft., and also the amount of sawdust necessary for packing on all sides of the ice. It is highly advisable in building an ice house to make it long enough to provide a small milk room or dairy at one end.

As stated above, the building should be made of wood as it is a much poorer conductor of heat than other building material, such as brick, stone, iron and concrete. Use 2 x 4's for the sills, plates, studding and rafters, and 2 x 6's for the joists. Place the studding 2 feet apart. Construct the walls as follows:—Nail well-seasoned rough lumber on the outside of the studding, making close joints; then on this up and down over the studding nail 2 inch by 1 inch strips on the wide edge and finish with drop-siding. Nail all well. In order to provide good circulation between the two boardings leave the space between them open at the top by omitting the last board under the roof, and when putting on the drop-siding leave an opening 1 inch wide in it near the ground by placing one board of the siding with its lower edge drawn outwards made fast to the inner boards and studding by small blocks of wood. Build the ice door in two or three sections hinged to open outwardly, and cut pieces of 2-inch plank for placing on the inside to prevent the sawdust filling against the doors. Put on a pitch roof and cover it with wooden shingles. Build a simple ventilator on the ridge and a latticed opening or louvre in each gable for ventilation. If the walls are left open at the top as suggested there will be good ventilation in all directions through the top of the ice house, one of the most important factors in the keeping of ice.

Simpler and less expensive forms of an ice house than the one I have described may be used with very good success often, but in the long run the best is the cheapest and by all means the most satisfactory.

The harvesting, that is, the cutting, hauling and storing, space will not permit me to discuss at any length; suffice to say that this should be done co-operatively for the good reason that an efficient outfit consisting of ice plow, loading device, etc., could then be used to good advantage in lessening the cost, labor and inconvenience of this somewhat unpleasant work.

These few suggestions regarding the value of ice on the farm, the approved method of storing it to reduce the waste to the minimum, and the most effective system of harvesting the same, the writer trusts will be acted upon by a great many readers of this article, for he is convinced that too few of our farmers appreciate the value of the ice crop to their own business in the good old summer time.

Bulletin 207, of the Ontario Department of Agriculture discusses the ice question very fully and should be in every farmer's hands.

O.A.C., Guelph, Ont.

R. R. GRAHAM.

Practical Hints on Storing Ice.

Editor "The Farmer's Advocate":

As the season of ice harvest is at hand and as many of those who store a supply for farm use in summer have but a comparatively small quantity to be preserved it is necessary that this receive the best attention possible in storing that labor be not in vain. Frequently the experience has been that in late June we look but ice has disappeared and we are discouraged in our effort to store this useful, and in most cases necessary, adjunct to the farm home and dairy. There are two or three factors necessary to successful preservation of the ice supply viz. drainage from below, some ventilation and good insulation. As a consequence the ice house need not be an elaborate structure as those requisites may all be found in more cheaply constructed houses. The most



Newtonian.

A yearling Shorthorn steer. Supreme champion at Norwich, junior champion at Birmingham and Smithfield.