hand-hoeing.

We believe that cultivating should be done frequently, especially after every rain, to keep a dust mulch about the corn to retain the mois-

It is not always practicable to follow the methods I have outlined to the letter, but where we do follow them as near as possible, success is nearly always assured. Neither do I think our method exactly applicable to all conditions, but, rather, think we should study our conditions and make our methods suit our requirements. I. D. HANKINSON.

Elgin Co., Ont.

Experiments with Farm Crops.

The members of the Ontario Agricultural and Experimental Union are pleased to state that, for 1912 they are prepared to distribute into every township of Ontario material of high quality for experiments with grains, fodder crops, roots,

| gras | ses and clovers, as follows: | |
|------|--|-------|
| No. | Experiments. | Plots |
| 1 | Testing three varieties of oats | |
| 2a | O. A. C. No. 21 barley and emmer | |
| 2b | Two varieties of two-rowed barley | |
| 3 | Two varieties of hulless barley | |
| 4 | Two varieties of spring wheat | |
| 5 | Two varieties of buckwheat | 5 |
| 6 | Two varieties of field peas | |
| 7 | Two varieties of spring rye | |
| 8 | Two varieties of Soy, Soja, or Japan | ese |
| | beans | |
| 9 | Three varieties of husking corn | 5 |
| 10 | Three varieties of mangels | |
| 11 | Two varieties of sugar beets for feed | ing |
| | purposes | 2 |
| 12 | Three varieties of Swedish turnips | |
| 13 | Two varieties of fall turnips | |
| 14 | Two varieties of carrots | |
| 15 | Three varieties of fodder and silage cor | |
| 16 | Three varieties of millet | |
| 17 | Two varieties of sorghum | |
| 18 | Grass peas and two varieties of vetche | |
| 19 | Rape, kale and field cabbage | |
| 20 | Three varieties of clover | |
| 21 | Two varieties of alfalfa (lucerne) | |
| 22 | Four varieties of grasses | |
| 23 | Three varieties of field beans | |
| 28a | Two varieties of early potatoes | |
| 28b | Two varieties of medium-ripening potat | |
| 28c | Two varieties of late potatoes | |
| 29 | Three grain mixtures for grain product | ion ? |
| 30 | Three grain mixtures for fodder product | ion 3 |
| E | ach plot is to be two rods long by on | e roc |

wide, except No. 28, which is to be one rod square.

Any person in Ontario may choose any ONE of the experiments for 1912, and apply for the same. The material will be furnished in the order in which the applications are received, while the supply lasts. It might be well for each applicant to make a second choice, for fear the first could not be granted. All material will be furnished entirely free of charge to each applicant, and the produce will, of course, become the property of the person who conducts the experiment person applying for an experiment should write his name and address very carefully, and should give the name of the county in which he lives. C.~A.~ZAVITZ.

Ontario Agricultural College, Guelph.

Details of Round Roofed Barn.

Director.

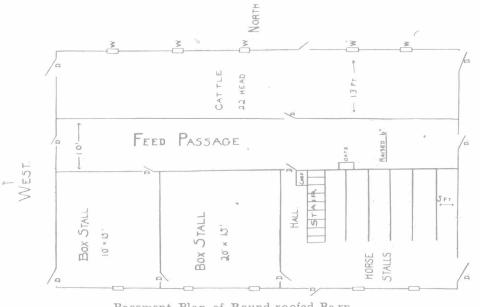
Editor "The Farmer's Advocate"

In your issue of August 31st, 1911, you gave us a photo of a round-roofed barn, which suits my requirements very well, built for Mr. McCal lum, Middlesex County, Ont. I would like to know how his building is constructed, kind of frame, size, height of walls, how rafters are made distance apart, and how they are fastened to plate; also, kind of rooting. I have seen sever al plans in your valuable paper, all of which help me to design one of my own. I have been plan-ning for a basement barn 80 x 36 feet, which I think is large enough for a 100 acre farm. There have been quite a number of born plans in recent issues which give us a lot of instruction in reissues which give us a lot of instruction in re- 1001, togard to plank frames and cement walls. Father began taking "The Farmer's Advocate" as far back as 1880.

Quebec. My barn is 40 feet by 70 feet, built on a nine foot cement basement wall, 12 mobes is an ordinary timber frame, w. mows are, one 20 ft... floor, 14 ft. We used the barn. The posts are 16 i roof is built with eight hall cut 1 inch by 8 inches, 11 them nailed together, making by about 8 inches, with a 2 inch spiked. The ribs are 3 inches by feet long, for centers, and ends 3 masses by

This does away with a great deal of inches by 12 feet long, to project over the These ribs go lengthends of the barn. wise every two feet apart. The ends are sized down one inch, leaving a shoulder on each side of circle of one inch. Those ribs are all the sheeting used to which the steel roofing is nailed. The metallic rooting comes already curved. idea of the oval is to give room above, using short posts. It has more capacity than a barn with 20-foot posts and an ordinary roof. end circle is framed in the bent put on the end. beams. I enclose plan of basement, which is equipped with steel cattle stanchions. small boxes shown are for oats and chop coming ALEX. McCALLUM. down from granary.

Middlesex Co., Ont.



Basement Plan of Round-roofed Barn.

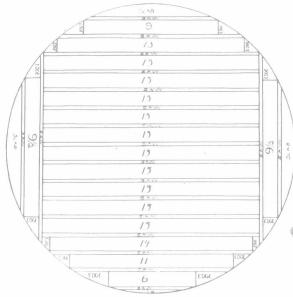
Economical Sawing of Log.

Editor "The Farmer's Advocate"

Having had many years' experience in handling logs and lumber, I will offer a little more information for the benefit of E. G. T., re inquiry of

As Mr. Gilmore says, the term "standard" may mean different sizes of log, but the "standwhich has been made use of in this locality since my earliest recollection calls for a log 20 inches in diameter (at the small end) and 12 feet in length, containing 200 feet ("shanty measure") of inch boards.

The above rule for measuring logs is figured this way: The diameter, multiplied by one-half of itself, gets the contents (board measure); thus, one 12 inches in diameter and 12 feet long would contain $12 \times 6 = 72$ feet; another, 16 inches in diameter would contain 16×8=128 feet, and so



Sawing a Log to Advantage

| 10.11 | - 11 1 | "oll S | ate to | | | |
|-------|--------|--------|--------|------|-------|--|
| 100 | | netes | Wide | 1.50 | feet. | |
| | | | | | | |
| 1 | | | | 1.3 | | |
| 1 | | | | 1.1 | | |
| .) | | | | 1.51 | | |
| | | | | 53 | | |
| | | | | (1) | | |

and the buyer is getting 10

Underdrainage.

Editor "The Farmer's Advocate":

In the course of a month, drainage, or lack of drainage, as the case may be, will be in the minds of every busy farmer over the country. Where the drainage has been carefully attended to the thrifty farmer will be getting in his crop early, thus insuring an early harvest and a good growth before the scorching July sun or maybe As J. H. Grisdale drouth, checks his crops. Director of Experimental Farms, said, before the Canadian Seed-growers' Association, as quoted in "The Farmer's Advocate" of March 14th "Everyone of us who has had anything to with grain-growing in this country knows the

absolute necessity for underdrainage under almost every condition one can think of in these Eastern Provinces, if we are to have the best success with seeding - down and grain-growing. Let me add that it pays to do it carefully, for, at the best, it is expensive and it is amazing how much of it he been done in a hap hazard manner. The cost of a good tile drain to the acre is considerable, but it is justified, as the improvement is a permanent one, and when it is once made there is a continuous profit from it. This is the correct

view, but it is so only for those who undertake to work in a systematic way, and have every detail right. Men are constantly laying tile in flat lands, without any definite system for the farm, without having accurate levels determined, and without calculating the amount of water finally to be carried by the main and the capacity of tile that are used. Very often drainage is begun without sufficient capital to complete what is needed. In such cases, the chief thing, when money is invested to drain the wettest fields, is to have it in the beginning of a system of underdrainage that will be right when it is finished.

Where you have much wet land to contend with, it is sometimes a difficult problem to provide an outlet, as drainage is useless if there be no outlet. I have seen men begin work with a guess, and end up in the air. The correct thing to do is to get the levels over all the land, having a common outlet. It pays, in the end, to employ a competent man for this, and when he has found the levels of all the surface and the length of the proposed drains, you may know exactly how much fall to the hundred feet he can get, how deep he must cut at every point, and what is possible in the way of thorough drainage veyor will be able to determine where the mains should go to be the least cost, and will place a stake every hundred feet along each line of mains and laterals, giving the exact cut at that point to keep the grade of the drain right. Then you are not working by guesswork. If the levels are correctly taken, the exact fall figured on, and the tile laid at the depth estimated on, the system of drainage must work and must do what is ex-

Very often a mistake is made in using t small tiles for the mains. You must always consider carefully the amount of fall in a drain, for upon that the capacity of the tile depends. Water will run through a drain that has a fall of only half an inch to the hundred feet, but the work must be done accurately, and then the water moves slowly. When the fall is three inches to the hundred feet, the capacity of the size of tile must be greatly increased. Sometimes the drain is so poorly made that the tile is below grade in some places, and above grade in others. Although this will carry the water for a time, and the pressure at the head will shove the water and, yet silt will finally fill the tile that is below grade, and eventually the drain will be de-The larger the tile, the less the danger wh filling, but where the ground is solid it is posts comony to pay for large tile, when accurate work will make the smaller tile efficient.

The size of the main should be in proportion to the size of the land to be drained, the thoroughness of the draining, the character of the land, and the amount of fall.

Very often we find surface water flowing on to low land from higher levels. The land may thus have some natural underdrainage which will considerably relieve the tile. It is not possible to give a rule that will always apply in determining the product size of a main, but the rule which my

fath have the prod acre vide is o

AF

judg may Whe grac been soft four line stor whe they pick

ging con WOY You Dra to the hal eac

> get har the joi the fro dis the dra the fici

> > the

By

of

lar

on an ho ex. the fol cas all rel til

ar

an