

the Maritime Provinces there is greater danger from bloating than there is in the arid or semi-arid districts of the West. Cattle and sheep become accustomed to rape by turning them into a field after they have eaten freely of some other food, and then leaving them in the rape pasture. The danger will be still farther decreased by allowing them to remain only a short time on the rape the first day, and gradually increasing the time on each succeeding day. At the end of the week they may be allowed to remain on the rape, having access at the same time to an adjoining grass pasture. Animals that have not been accustomed to rape pasture may not take to it at first, but they soon learn to like it, and once they acquire a taste for it they will thrive on it and never tire of it.

If live stock are pasturing on rape, it is generally considered beneficial to the animals to give them access to a grass pasture. And especially is this true if the grass has lost part of its succulency through age, as it then has a tendency to lessen a too lax condition of the bowels. The grass and rape will keep the sheep in first class condition.

Oats fed once a day to the sheep at the rate of one-half pound per head each day will have the same effect, but it is not considered necessary to feed grain to most of the stock pasturing on rape with the object of putting on fat, for a good stamp of rape usually proves sufficient to fatten them. Stock should have free access to salt when pasturing on rape, and should always be supplied with fresh water. But when sheep are feeding upon it they will be found to consume very little water. Sheep turned into a rape pasture that is neither very tall nor very dense will first consume the leaves, because of their succulence. They will finally eat all the stems down to the ground. But if the rape be tall and thick they will eat it up clean as they go. The stems are considered even better than the leaves. When the leaves, in a thin stand, have been eaten off by sheep, cattle may then be turned onto the field, and they will clean up all the remaining stems. By this method there will be much less loss from trampling than if they had been introduced at an earlier period.

On soils in which the hoofs of the sheep do not sink below the surface, this class of stock may be pastured on rape until the closing in of winter, and in warm latitudes they may be pastured on rape all through the winter. In climates with cold winters, such as we have here in eastern Canada, it should be pastured off before the arrival of severe frosts, as after rape has been frozen, until the stems become crisp enough to break easily, its value as pasture is much impaired. When the early frosts have covered the rape, sheep should be given a feed of oats or other suitable grain before being turned on it. In the absence of such food sheep must not be allowed on it until after the frost has lifted, otherwise serious digestive troubles may arise.

When sheep eat so excessively of rape or other food as to induce bloating, relief must be immediately given or the animals will almost certainly die suddenly. Therefore, a trocar should always be at hand. The moment that a case of bloat is detected, the animal should be tapped to allow the gas to escape. This is done by sticking the trocar into the paunch on the left side and somewhat low in the triangular fleshy space between the last rib and the hip. Medicine is seldom of any avail.

The usual method of sowing rape is in drills, and cultivate as for other roots till the leaves grow too large to allow of passing between the rows. Some advocate and practice sowing rape with corn at the time of last cultivation; others sow it with oats when the plants are about two inches high. It is well to learn whether one's conditions of soil and climate will allow of such methods before undertaking them on a large scale. Sowing in rows from two to two and one-half feet apart and cultivating as for turnips or mangels, is the method to use for large production of seed. Rape being a very gross feeder requires a soil rich in plant food. Soil suitable for corn will be found to be good for rape. A man having lambs to fatten can grow no better crop than rape, nor one from which the quality of the flesh will be better.

Cape Breton, N. S. JOHN H. MacDONALD.

How Hog Cholera Serum is Prepared.

It may be of interest to a number of our readers to know how hog cholera serum is prepared. The following is taken from Extension Bulletin, No. 37, of the Minnesota Station:

Hogs are selected that are immune against cholera. They may become immune (1) by having recovered from an attack of cholera; or (2) by having been given the double or serum-virus treatment. Hogs weighing between two and three hundred pounds are desirable. The next step is to render these hogs hyperimmune; that is, to intensify their immunity, or render them very highly immune. This is done by introducing large

quantities of virus, in proportion to the weight of the hogs, into their bodies in different ways, either into the abdominal cavity, or into the heavy muscular tissues, or into the tissue just beneath the skin, or into one of the bloodvessels, such as the vein in the ear. The virus is either injected all at one time, or in divided doses at weekly intervals. Ten days after the last injection the hog's blood contains a very large amount of the protective substances desired. A hog that is simply immune has only enough of the protective substances in its blood for its own protection, but a hog that is hyperimmune has these protective substances in its blood in such large amounts that a small part of the blood of such a hog when injected into another will have the power of rendering that hog immune.

At this point the hyperimmune dan aheo be bled for serum. This is done by cutting off a small piece of the tail and collecting the blood in a sterilized vessel. The clot is removed, the serum measured, and a small amount of preservative added. It is then stored in sealed bottles in a cool, dark place until it can be tested. It takes three weeks to test the serum, and if the test shows that the serum is not up to standard strength, it is not used.

From two to three pints of blood are removed each time the hog is bled. He may be bled two, three, or four times, and then re-hyperimmunized; that is, the former process must be repeated, because the bleeding has resulted in decreasing the amount of protective substances in the blood. The total number of bleedings is usually determined by the length of the tail. When the tail

crops for the Glencoe fall fair. As I had heard of this form of agricultural encouragement I proceeded to interview Mr. Scarf, and, though I have no doubt that most of the readers of "The Farmer's Advocate" are familiar with this work, I am going to tell what I learned for the benefit of the few backward people like myself who never find out about things like this until long after everybody else knows all about them.

* * * *

The purpose of the association in establishing field-crop contests, is to encourage the production of larger crops. They also encourage the growing of clean crops that shall be as free as possible from weeds, and uniform in variety and quality. They likewise help to determine the varieties of various kinds of grain and plants that are best adapted to each particular part of the province. To aid them in their work, the Government gives a grant of fifty dollars to every society that enters the competition. In return for this, every society entering must put up twenty-five dollars, making in all seventy-five dollars to be divided into seven prizes, ranging from four dollars to twenty dollars. Last year about three thousand farmers took part, and over thirty thousand acres of standing crops were examined and judged. The winners of the first five prizes are allowed to compete at Toronto and at the Guelph Winter Fair with both sheaves and grain, for sweepstakes prizes. Altogether, the plan of the association appears to be very comprehensive, and designed to give the largest amount of encouragement possible to practical farming.

* * * *

As Mr. Scarf called on me before leaving the neighborhood, I had a chance to sound the depths of his enthusiasm for the subject of field crops, and I learned a few incidents of progress that I have not seen mentioned in the papers. As an example of what an observant man, who has some knowledge of what can be done through selection, can accomplish, Mr. Scarf told me of the case of Mr. Dawson, who, in 1881, had a field of badly lodged wheat of the old Clawson variety. When looking over his field he noticed one head that stood up strong and stiff, defying



Montrave Ebling.

First prize and reserve champion bull at the Royal.

gets so short that the hog can no longer be bled, it is killed, and the blood collected. On the average, one thousand pound hog will yield about fifteen thousand cubic centimeters of serum (three and three-quarters gallons) which is sufficient to treat five hundred hogs weighing one hundred pounds each.

THE FARM.

Field Contests.

By Peter McArthur.

While in the village a few evenings ago, I noticed a group of farmers listening attentively to a stranger who was explaining something to them. I have heard it said that "curiosity killed a cat," and, if that is true, it is a good thing for me that I am not a cat, for I had to find out what was going on. By joining the group I had a chance to hear the stranger explain how to prepare a sheaf of oats so that it will have that fine upstanding look that we see in the sheaves at the fall fair, and nowhere else—except, perhaps, in the pictures used to advertise self-binders. I had often wondered how on earth they managed to get sheaves in which every head stands up straight without showing a sign of crinkling. It seems that if you are going to get up a show sheaf, the way to go about it is to cut the grain before it is dead ripe, select the most perfect straws and heads, and then hang them head down from the ceiling of the kitchen. In this way the straw becomes cured with the head perfectly straight, and then you can make up one of those fancy sheaves. This was all so interesting that I wanted to find out a lot more, and, in due time, I was introduced to the stranger, who turned out to be Mr. Scarf, of Durham, second vice-president of the Ontario Association of Fairs and Exhibitions. He was in the neighborhood judging the standing field

the storm. This head he cared for and kept apart, and from it produced the stiff-strawed wheat which, in a few years, was the most extensively grown wheat in the province. Unless one stops to figure a little, it is hard to realize that one remarkable head should affect the whole wheat production of a province, but if you take a pencil and piece of paper and figure on wheat that yields forty or fifty-fold, you will find that if this rate of production is kept up for a few years and every seed produced is re-sown, it would take a very short time for the products of one head to fill all the granaries of the world. As an example of what can be done in this way, he told me about Mr. Elder, of Hensall, in the county of Huron. In 1906 Mr. Elder applied for a pound of O. A. C. No. 21 barley for experiment. He sowed it, and threshed thirty-one pounds. In the following year this yielded twenty-five bushels and five pounds. When sown on eighteen and a quarter acres of land, this, in turn, produced nine hundred bushels of barley. Thus we see that in three years one pound was increased to nine hundred bushels. If he had kept on sowing for another three years, you couldn't figure out on the side of a barn how many bushels he would have had.

* * * *

The work of the association is really supplementary to that of the Farmer's Institutes. The Institute lectures teach the proper preparation of the soil, eradication of weeds, drainage, fertilization, selection of seed, and all the other things that go to the production of a valuable crop. In this connection I was interested to learn what apparently trifling causes can seriously affect the value of a crop. In the case of oats, some grains are thirty-eight per cent hulls, that is pure chaff. This is equivalent to having thirty-eight bushels of chaff in each hundred bushels of grain. The thin-hulled varieties have only about twenty-four per cent of hulls, which makes four-