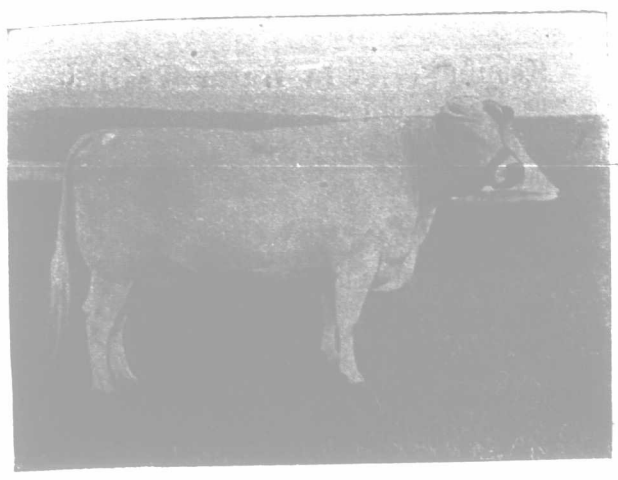

WHITE HEATHER.

First-prize three-year-old Shorthorn cow and champion female of the breed at the Royal Show, England, 1901; first-prize cow at the Royal Counties Show, 1902.

THE PROPERTY OF MR. J. DEANE WILLIS, BAPTON MANOR, WILTSHIRE.

suspended in 3 or 4 ounces of water and given in a drench, and repeated in about a week; also, in the fluid extract of kamala, in dram doses to each 50-lb. weight of lamb, dissolved in twice its own bulk of glycerine, and added to two or three ounces of water and given in a drench. The latter treatment has probably more advantages, with fewer disadvantages, than anything yet tested, and is regarded by many who have tried it as a specific when the animals have been treated before too great emaciation has become established. Whatever course is pursued, or agent employed, it is necessary to remove the sheep (immediately after treatment) to non-infected pastures, and where emaciation is great, good food and tonics given.

JOHN SPENCER, Veterinarian.
Virginia Experiment Station.

Sheep-Worrying in Britain.

Sheep-worrying by stray dogs is a cause of great loss to flockmasters, and there is singular remissness in formulating schemes for a remedy. The Bill of 1900 embodied some excellent clauses, but since it went the way of the innocents nothing further has been done to end the evil. Local authorities have far too little authority in a matter of this kind. They should have power to seize and lock up stray dogs, and it should be declared legal to shoot at sight dogs found chasing sheep. At present the law in England seems to be that a dog cannot be shot except to save the life of a sheep. If he has already claimed his victim there is no further penalty for him. He must not only be caught in the act, but he must be found so worrying the sheep as to cause its death. There should be no exemptions from license, and every dog should carry a collar bearing his owner's name.—Scottish Farmer.

FARM.

Collect Weed Seeds.

"That enormous sums of money are lost to farmers throughout Canada every year by weeds," no person will deny. In the great war against these enemies, it is necessary that all concerned should become more intelligently acquainted with their habits of growth, and, above all, be able to identify specimens and their seeds. This is the time when seeds can be most conveniently gathered. Many species are becoming ripe. Supply yourself with small bottles and become interested in making a collection. It will pay. In this way one can soon become familiar enough with weed seeds to detect almost any specimen in a sample of clover or other seed when buying. If you do not know the name of all seeds collected, send a sample to this office and we will be pleased to identify it if we can, giving an answer through the columns of the "Farmer's Advocate." If you have not time to do this yourself, interest the younger people in the matter. It will pay.

Sheep Destroy Weeds.

"Of the 600 weeds and grasses growing in the Northwest," writes Prof. Thos. Shaw, "it is estimated by those that have made a study of it, that sheep will eat 576 of them, while horses consume but 82 and cattle only 56. The fact is, sheep prefer many kinds of weeds to grasses, and weedy fields and horse pastures are improved by turning a small flock of sheep into them. When sheep devour the weeds they do not charge anything for the work. On the other hand, they pay the farmer for the privilege of pulling the weeds. They turn the weeds into mutton, fresh, juicy and crisp. A sheep's stomach is the most perfect receptacle that was ever made for weeds. It is sure death to every form of weed life. No weed seeds retain the power of resurrection after having been buried in that living sepulcher, the stomach of a sheep."

Protection Against Lightning.

In order properly to understand the steps to be taken to insure protection against lightning, it is necessary first to understand something about the danger we desire to guard against. The atmosphere during a time of electrical disturbance is under extreme tension. It is then in the same condition as is water dammed up, which, if it suddenly break loose, becomes an element of destruction. If, however, we can drain that water off gradually, in small streams, it will cause no injury. It is precisely the same with the electrical energy in the atmosphere. If we can draw that off in small volume, we prevent the destruction liable to take place where there are accumulations in dangerous quantities.

There is such a gradual drawing off in the villages, towns and cities, and this explains the infrequency of destruction by lightning in these larger centers as compared with the destruction on the farms. When there are a large number of houses together, the electrical energy is dissipated over a wide area, and not enough of it usually is brought together at one point to cause damage. The numerous trees, etc., in these large centers of population also serve as conductors to carry the fluid to the ground at many points and thus lessen its destructive power.

METAL CONDUCTORS.—There are artificial means of protection as well. Buildings may be protected by rods, but if the rods are not properly put on, they become a source of danger instead of a means of protection. If there are plenty of these conductors, properly constructed and properly put on, they will tend to prevent dangerous accumulations of electricity. The best kind of conductor in the form of rod is made of copper. Copper is much better than iron of the same weight. If you allow 100 as representing the conductivity of copper, iron would stand at 18.

POINTS, OR UPPER TERMINALS.—The more points you have extending upward from the conductor, the better. You should have these points five or six feet high, and not more than 40 feet apart. It is essential that these points be bright and sharp, as a bright point seems to have more attraction for lightning than a dull one. Aluminum is recommended as a material for points, because that material will not rust; it is always bright, and is a better conductor than iron. It is better to have these points in broom form than as a single point. For example, if you are using a copper conductor, you can have a flat block of copper at the upper end of the point extending upwards from the roof, and into this block you can solder a number of aluminum points. The extension from the roof would then be exactly like a wire broom: the first part of the upward extension would be in the form of the handle, the copper block at the top would be the holder of the broom, and the two or three dozen small aluminum wires soldered into that block in a bunch would form the broom itself. This broom point will form a much better conductor than a single point. It is well, also, to have all these points connected one with another, so that if the lightning strikes at any point it will be diffused over a number of conductors instead of overcharging one.

There is no reason why farmers should not make their own lightning rods. Two or three strands of barbed wire wound together will make an excellent conductor, and the little barbs which are on this wire, about six inches apart, will assist the regular points in drawing the fluid.

GROUNDS, OR LOWER TERMINALS.—One of the most important points of all in providing for this sort of protection is in having a proper ground connection. It is an easy matter for a careless or dishonest agent to put the ground wire just a little below the surface. It is then out of sight, and he thinks out of mind as well. Wire buried just below the surface, in dry ground, so far from being a means of protection, is a cause of danger, because the lightning, attracted by the points on the roof, is carried down the conductor, and if it is not then dissipated in damp ground, it is apt to fly off into the building. Protection can be secured by seeing that the ground wire is connected with earth which is always moist. The depth necessary will depend upon the character of the soil and the location of the building. It may not be necessary to go over three feet, or it may be necessary to go ten feet; what is imperative is that the ground wire shall be connected with soil that is never dry. To this end it is best to put the ground wire in during dry weather, because then you will see how far down it is necessary to go.

It is necessary to have something more than a single wire into the ground. You require to take such measures as will provide for the distribution of the current at the bottom. This can be provided for by flattening out an old copper boiler in sheet form and soldering that to your ground wire; or you may take a number of strands of barb wire and connect these with your ground wire below the surface. But it is, as I have said, absolutely imperative to have this ground wire located in ground which is almost moist. It is well to put charcoal about the ground wire, for this not only holds moisture, but attracts it.

INSULATORS.—In a steady flow of the electric fluid, in comparatively small volumes, as in the telegraph and telephone service, the insulator is effectual in confining the current to the wire. The lightning stroke, however, is compared, not to a small, steady current, but to an avalanche which would make light of an inch or two of glass after breaking through several rods of insulating air. The argument used against insulators for lightning rods, therefore, is they are ineffectual. On this account the weight of authority is in favor of supporting rods by ordinary metal fastenings. These may be in the form of a tape fitting the shape of the rod, holding the rod close to the building, and screwed or nailed to the building on each side of the rod. Some fastenings are in the form of spikes, with an eye through which the rod passes.

However, I do not think that the volume of the current is usually great enough but that a good insulator may keep the current from entering a building. Briefly, therefore, I should advise persons intending to erect lightning rods, to use insulators for supports. These insulators may be of the ordinary form as used on telegraph and telephone poles, or of porcelain, as used in inside telephone connections. No special form is necessary for this purpose.

J. B. REYNOLDS,
Professor of Physics.
Ontario Agricultural College.

[Note.—Mr. Thos. Baty, Middlesex County, a few years ago constructed a lightning rod (approved by many experts and which has stood the test of time) of nine strands of No. 8 galvanized iron wire (smooth), twisted together, a grindstone being used for the latter purpose. The ground connection was made by inserting the end of the twisted cable eight feet in the ground, in a hole made by a two-inch well auger. For each length of rod needed, the wire was measured and cut. Then each wire was bent at one end, hooked on the short crank of the grindstone and made fast. At the other end each wire was put through a separate hole in a short piece of board, pulled evenly tight and bent to keep from being pulled back. Then one turned the grindstone and the other held the board, and in a few moments the wires were twisted firm. The wire was attached to the building by three-cornered cedar blocks about three inches across, nailed to the building. These were notched and the cable stapled into the notches. Sufficient blocks were used to keep the wire from touching the building, and each

BISMARCK =28313=.

One of the sires at the head of the Thorndale herd of Mr. John S. Robson, Manitou, Man. (See Gossip, page 544.)

FIGGIS 76106.

Jersey cow, 11 years old. Sold for $875 at Hood Farm sale, Lowell, Mass., June, 1902.