values will be made in Britain the same as the values of grain now. The length of time till then rests with the Canadian packer.

Prof. Robertson also gave a very interesting address on the *food values of fruit* and the influence of a plentiful fruit diet on the temperament as well as the physical structures.

The Thursday morning session opened with an address by Dr. Saunders on maintaining the fertility of the soil in orchards. He started out by saying that the soil was the fruit-growers' savings bank which he was constantly drawing upon, and if he wished to keep up his credit he must keep up his deposits, as he was constantly drawing upon his capital. This he could best do by applications of barnyard manure at the rate of 15 tons to the acre. He showed that unleached ashes was a most valuable fertilizer, and that about 30 bushels to the acre would be about the proper amount. This, he considered, would add about 75 pounds of potash to the acre, 100 pounds of phosphoric acid and a considerable amount of lime, say two or three hundred pounds. He had found, however, that red clover was perhaps the best fertilizer of all, and had recently sown it at Ottawa with nearly every variety of grain, believing that in a few years he would thus bring the land to a greater state of fertility than by the ordinary method of manuring. He said that clover was richer in nitrogen when green, and should be plowed down in the fall before any of the roots were killed. Clover sown in the spring and plowed under in the fall added as much fertility to the acre as ten tons of manure. In the discussion Dr. Fletcher said that it was a disputed point whether it were better to plow clove down in the fall or leave it as a cover crop to protect the rootlets of the trees during the winter. He admitted that it lost some of its nitrogen by winter-killing.

One afternoon session was given up wholly to *the San Jose scale*. Mr. W. M. Orr presented his report, giving an account of his investigations during the past summer. Mr. Orr said he had found the scale in many localities from the Niagara district to the Detroit River. The first and worse case he had come across was in the orchard of Mr. Van Horn, near Chatham. The scale was brought there on trees from some nursery in New Jersey. Every case discovered in Essex and Kent was traced to one or two nurseries in New Jersey, and one case in the Niagara district resulted from trees bought from Mr. F. E. Young, of Rochester. Some very bad cases were found in the neighborhood of Kingsville, and from all these points mentioned the pest was spreading in every direction. The only treatment that has been of any effect was to chop out and burn every tree affected. Mr. Orr, with the assistance of the parties owning affected trees, had tried spraying with whale-oil soap, but to little effect. Mr. Orr gave it as his opinion that nothing but cutting out and burning would ever rid the country or any infected district of the pest.

[TO BE CONTINUED.]

Notes from Simcoe (Ont.) Experiment Station.

Apples were almost a total failure here this season, with the exception of the Duchess, which were a fair crop, and of good quality. Of the winter apples, the Snows and Spys were the only ones that bore a few specimens, but what few there was were of poor quality. There was plenty of bloom, but the fruit fell off soon after setting, owing to some sort of blight. The Duchess rarely ever fail to produce a crop any year, and if a market can be found for them they will always prove the most profitable kind, even if sold at a low price, owing to their early and regular bearing, the large crops they produce, and their even size and clean, bright quality. If I were confined to one variety of apple, I would grow the Duchess. Of the fall varieties, my choice would be Alexander, St. Lawrence and Wealthy for profit. Of winter varieties, a very good selection would be Snows, Fallawater, Stark, Blenheim Orange, Spy, King, Baldwin, Greening. The last four should be top-grafted on Tallman Sweet or other hardy stock.

I have quite a variety of pear trees planted, all doing well. Among them are three Russian varieties, Baba, "Bessemianka," and Bergamott. These, with the Flemish Beauty, will make splendid stock on which to graft the tender sorts. They are healthy and vigorous, and seem to have found a congenial climate here.

The Russian cherries, of which I have a large number of varieties planted, are very thrifty, vigorous growers. Two varieties, Osthiem and "Dye House," three years planted, bore sufficient fruit this year to enable one to judge of its quality. Both are excellent for canning purposes, with a rich vinous flavor. The Osthiem, eaten fresh, is the better of the two, being less acid. I have no doubt these Russian cherries will prove valuable for northern districts, where the finer and more tender kinds, such as Oxheart, will not succeed.

I fear the Japanese plums will prove too tender for this district, and doubt very much if they will succeed outside the peach belt. However, time will tell. I have been much interested in a plum that fruited for the first time this year. It was one of several varieties sent me by Prof. Craig two years ago last spring. The scions were labeled "Early Botan." But Prof. Craig writes me that he thinks it is not a true Botan, but something of the type of the Willard. The scions were top-grafted on common wild stock, and bore fruit the second year, having come through the winter without injury. The fruit is smallar than Lombard, with very small pit; pink color when ripe, and covered with a beautiful bloom; the flesh has somewhat the flavor of a peach, juicy, rich, unexcelled by any variety in point of quality. It began to bloom on May 1st, and was ripe on August 10th. This plum, in an early season like last year, would be ripe in July. It is a freestone. However, it has one fault. It is inclined to drop before it is thoroughly ripe. But the value of this variety lies in its high quality and earliness, as it would be in the market before any other variety.

Half an acre of orchard, 20 years planted, is being treated with ashes and ground bone, and red clover plowed in when in blossom. The half acre receives 100 pounds ground bone, 25 bushels hardwood ashes, and as heavy a crop of clover as we are able to turn under with a plow. This experiment is intended to demonstrate how the fertility of a bearing orchard may be kept up cheaply, and if the trees respond well to this course of treatment (and present indication are that they will), then no one should let their fruit trees starve on the score of expense. The bone meal costs about 2 cents per pound, or $4 per acre; ashes, 7 to 8 cents per bushel, or say $3.75 per acre (this does not include drawing, of course), and clover seed, 80 cents, or a total of $8 50 per acre. In ordinary practice this would not need to be repeated every year. If a good heavy crop of clover were turned under, and the ashes were of the best quality, once in two years would do, and an orchard ought to respond fairly well to this treatment. Very few orchards get anything near that amount of fertilizing, and yet are expected to produce large crops of fruit and at the same time grow a crop of grain or roots between the rows. How unreasonable. Most of our orchards are starved. G. C. CASTON, Experimenter.

THE HELPING HAND.

Everybody a Weather Prophet.

JOHN TAYLOR, JR., WATERLOO, ONT.

One of the most serviceable and useful articles about the farm is a good barometer which will foretell nearly all the changes in the weather. There is no reason why we should be without such a useful instrument when we can procure a first-class one at a cost of about 30 cents. Many of the so-called barometers are of little use on account of the poor quality of the chemicals used. If we buy the chemicals ourselves we will be more apt to get a better instrument. Buy the following from a good chemist: One ounce of camphor, one ounce of saltpeter, one ounce of ammonia of salts, and dissolve them in fifteen drams of alcohol. Shake the mixture well and pour in a long, slender bottle, and cork up tightly. Be sure to have the bottle full, so there will be little or no air inside. Hang your barometer on the north side of building, or some place not exposed to the sun, and the following will be your weather indications: Absolute clearness of the liquid means fair weather. Threadlike objects at the top of the bottle indicate high wind. If the liquid become roily it is a sign of rain. Little stars in the liquid mean a hard storm. If downy masses form in the bottom of the bottle it will be cold; the more these masses rise to the top the colder it will become.

POULTRY.

Winter Eggs.

If we are going to obtain winter eggs in paying quantities, we must see that our fowls are properly housed, which means that the house should be warm, clean, and large enough for the flock. It should be so warm that water will freeze but little even during coldest weather. We prefer to do without artificial heat, but would not hesitate to use it during a very cold period rather than allow our birds to stop laying, as they surely will when they become very cold. If you use artificial heat, do not allow the building to get over 45°. We have found from 40° to 45° to be about right when heated artificially. Keep the poulty house just as clean as you keep the cow stable. At least six square feet of floor space should be allowed for every bird. This space will do very well if you keep the flock divided into from fifteen to twenty in each flock, but if you have say fifty in one flock, they should have a building 20x25 ft. for best results. One of the great secrets in obtaining winter eggs in paying quantities is to have the proper birds as to age, health, etc. No late-hatched pullets or old hens will do anything during the winter except eat, and you cannot afford to have any drones in the flock. You can quite easily tell at this time of the year all birds that are likely to lay soon. The old hens will now be pale looking (I take for granted that you have the whole flock in good health) and not well moulted. Get rid of these, as well as the late pullets, at once; they will be small, and quite likely little more than skin, bone, and feathers. Get rid of these also, and keep only those that are in full plumage, are in good plump condition, and are red about the head. We now come to the

PROPER METHOD OF FEEDING.

Have a variety of food on hand, as wheat, buckwheat, barley, oats, corn, turnips, potatoes, mangels, cabbage, cut clover, and meat of some sort—green bones preferred. Every farmer has enough of these kinds of food to make sufficient variety. Feed mostly vegetables in the morning, as cooked potatoes, mixed with crushed oats or some other kind of ground grain; turnips can be used for the potatoes, or the cut clover mixed and steamed with chopped grain. This will be enough variety. Feed this in troughs and only what they will eat up clean. Have the floor covered from six to ten inches with straw. I prefer wheat straw. Into this, after they have had their morning meal, scatter some kind of grain. Put in a few handfuls only and cover it up well with the straw. The object of this is not so much to feed them as to get them to work. It has been clearly proven that a hen that stands about is not a profitable hen. The oftener you can get them to turn over the straw in a day the more eggs you will get. See that each bird goes to roost with its crop well filled with grain every night. If you are feeding meat, cook it first and give them all they will eat. If you are feeding ground green bones, you may give them all they will eat, and the more of this kind of food they get the more eggs they will lay and the less grain they will require. You must feed meat in some shape during winter to take the place of the many worms and insects obtained during summer on a free range. Green bones or meat and vegetables, with very little grain, will produce more eggs in winter at less expense than an all-grain diet, as is fed to too many hens on our farms. Do not neglect to keep grit before the fowls at all times, and see that they have access to a dust bath of road dust or coal ashes.

Waterloo Co. J. E. MEYER.

VETERINARY.

The Dominion Veterinary Department.

To the Editor FARMER'S ADVOCATE:

SIR,—Your timely remarks *re* Live Stock at the Experimental Farms, in your issue of November 15th, would convey to a large number of the stockmen and public generally news that was anything but reassuring. The second discovery of tuberculosis at the Experimental Farm, Ottawa, also discloses the fact that as at present conducted either the veterinary branch of the Department of Agriculture is nothing more than a farce, or else it is in the hands of incompetent men. The Minister (Hon. Sydney Fisher), while zealous for the welfare and advancement of farming, cannot reasonably look for improvement in the veterinary branch of it as long as the present head is retained. No reasonable person will, after the recent discovery of tuberculosis at Ottawa, right under the inspector's nose, if that be a sample of his work generally, condemn the British Government for the embargo placed on Canadian cattle. It seems that although a rigid quarantine used to be enforced at Quebec and other points east on cattle entering the country, yet animals entering as settlers' cattle along our Western frontier were allowed in with only a cursory inspection and practically no quarantine. This fact was pointed out to the inspector years ago. His answer was to the effect that the British Government understood or agreed to such a system. However, when the embargo was placed on our cattle and reasons asked by the Canadian Government for so doing, the British Government pointed out this loophole for contagious diseases in the Canadian quarantine system. Why should cattle admitted along our eastern frontier be more liable to have or carry contagious diseases than cattle admitted along the western frontier? Again, the Dominion Veterinarian's statement before the House of Commons Committee is altogether too optimistic. Glanders, according to that gentleman's evidence, is practically extinguished in Canada, yet in 1896 the Provincial Veterinarian of Manitoba shot over forty horses affected with the disease, and even a greater number in 1897, most of the cases being directly traceable to the N. W. T., a district under the Dominion Veterinarian's control.

[NOTE.—Elsewhere in this issue we give a still more glaring case of official laxity, where, within 30 miles of Toronto, the disease is reported to have been in existence for weeks, no less than sixteen animals being reported affected.—EDITOR.]

It is altogether likely that he is as wide of the mark regarding tuberculosis as he evidently is regarding glanders; and what about his knowledge regarding other contagious diseases in animals? Last winter and spring the Department announced a series of examinations to enable veterinarians to qualify for inspectorships under the new regulations regarding exportation, etc., of cattle. Those examinations were held—certainly a step in the right direction: one of civil service reform—but only a few of those competing have yet been informed regarding their standing, whether they have passed or failed. Neither has the public been informed. Was the whole thing a deliberately planned farce? The examinations afforded the chief inspector the opportunity of visiting the West and "the Waldron ranche." Are there no veterinarians in the Dominion House of Commons whose advice on such matters might be taken? If diseases exist among our cattle and horses, eradicate, but don't try to hide them.

Wellington Co., Ont. A. G. HOPKINS.