

tend to winter over I put into the fattening pens and fatten, by keeping grain constantly before them and feeding a mash composed of cornmeal and wheat bran or middlings with perhaps some cooked vegetables, and keep fresh water always before them, and give them milk and meat scraps. I feed in this way two weeks, and during that time the pens will be littered with their fast falling feathers, and the new ones will be making rapid growth. I then put them with my early pullets which I have selected to make up my flock into the winter house, and continue the good feeding for eggs in the following manner: Their food consists of grain in the morning. Buckwheat and oats one morning and wheat the next or whole corn scattered and covered deep in the litter in the large scratching shed, which is well lighted and airy. The litter is composed of hay-seed, chaff, straw and dry pressed leaves. In one corner I have a large heap of gravel which supplies them with grit all winter. I have a slide about two feet from the floor, which is about 18 inches wide and four feet long for the hens to go through from the main hen-house. This gives the hens considerable exercise, not only scratching for their grain but in going back and forth they must jump up every time to go through the slide. I feed meat three times per week. When fed raw I hang it up high enough so they must jump to eat it, and the same with cabbage or turnips which I hang up every morning, and with the turnips I take a slice off one side so they will eat it more readily. When I feed the meat cooked instead of raw I grind it up fine and mix in their hot mash, also using the water it was boiled in to dampen the mash, as this contains vegetable animal food for them.

It is the busy hen that lays, and it is the hardest job the poultryman has to do to keep them busy. I almost begrudge my flock any food they eat that they don't have to work for. There are always a few drones in the flock, and just notice they are the poorest layers, usually getting over-fed and perhaps losing the use of their legs. I always mark such hens, and dispose of them at the earliest opportunity. Their mash, which is always given at noon, is composed of bran or cornmeal and boiled or baked potatoes. Occasionally for a change I give them a dry mash. Just the dry meal or bran in troughs. Twice per week I mix some good condition powders or sulphur in their mash, which tends to keep them in good health and free from mites. For the evening meal I give grain again, feeding early during the short days in order to allow them plenty of time to scratch for it before roosting time.

I feed crushed bone twice per week and usually have a quantity of old plaster and egg shells to give them sometimes, this I sometimes feed in place of the bone. I give milk when I have it, but keep fresh water before them all the time, having a cask of water a short distance from the poultry-house for watering stock. I purchased several feet of small tubing and a small galvanized trough, and I conducted the water from the cask to the hens through the poultry-house, and by means of a plug inserted in the tube I regulate the flow so that it little more than keep the trough full and supplies the flock, though I have a small pipe to carry off the overflow should there be any. This keeps fresh running water constantly before them without any trouble and little expense.

I have a large dust bath, in front of a sunny window in the main house, composed of sand and road dust, and they generally roll in the bath for a short time when the sun shines there the warmest. I am never troubled with vermin, as I fumigate the poultry-house thoroughly in the autumn and kerosene the roosts and nests weekly. The nests I have in various places in both main house and scratching shed, and always have them rather dark, as they seem to like them better.

All this may seem to be a lot of work and trouble to care for hens but I assure you it is not. By a little foresight one can have everything handy, and experience teaches what to do and when to do it. If one had reason to believe their hens are getting too fat by them laying soft-shelled eggs, feed less and make them work more. By following this method I get eggs in abundance the whole year round, and best of all when I can sell them at 45 and 50 cents per dozen.

York Co., N. B.

POULTRYMAN.

Forty-six Years of Satisfaction.

I am sending my subscription for "The Farmer's Advocate". Probably it would be of interest to you to know that your worthy paper has been in my home for forty-six years. The magazine has only been out of my home two years, and that was when there was some change being made. I retired from farming five years ago, but I could not think of giving up my old friend "The Farmer's Advocate."

Simcoe Co., Ont.

GEORGE WALKER.

HORTICULTURE.

Two Serious New Diseases.

Editor "The Farmer's Advocate":

Club root of turnips and cabbage and powdery scab of potatoes are two diseases which are comparatively new to Ontario. Both are capable of causing serious loss and both, if once introduced, will remain in the soil for several



Club Root Disease.

years. It is, therefore, very important to be on the watch for these two diseases and to take every precaution to prevent them from being introduced and established on the farm.

CLUB ROOT.

Several times during the past two or three years reports have been received of the occurrence of this disease in Ontario. It was never possible to confirm these reports and it was not until this summer that plants attacked by club root were sent to the Department of Botany. S. Johnson, Vegetable Expert for the Ontario Department of Agriculture, reports finding club root in the following counties: York, Peel, Lambton



Potato Affected With Powdery Scab.

and Wentworth. It would seem, therefore, that the disease is quite widely spread in Ontario.

Club root is a very serious disease. It attacks cabbages, cauliflowers, turnips, radishes, kale and many weeds belonging to the mustard family. The disease affects the roots and produces irregular thickenings and knob-like swellings which are often the size of a man's fist. The tops of affected plants develop very slowly, cauliflowers and cabbages attacked forming little or no head. The plants are sometimes complete-

ly killed, due to the fact that the swellings on the roots prevent the proper absorption of water. The diseased roots finally rot and fall to pieces, liberating into the soil immense numbers of minute spores. The disease may remain in the soil for a number of years. It is chiefly spread in manure, in infected soil and by means of diseased seedling stock. It is also thought that the disease may be spread by spores adhering to the seed.

A careful watch should be kept for club root. All plants showing symptoms of the disease should be dug up and burned to prevent the soil from becoming infected. To prevent the disease if the source of the seed is unknown, disinfect it by soaking it for fifteen minutes in a solution of one part by weight of corrosive sublimate in one thousand of water. (Caution.—Corrosive sublimate is a deadly poison and corrodes metals). When setting out cabbages or cauliflowers use only healthy plants. Do not use manure containing cabbage or turnip refuse. If necessary to use infected land, apply lime at the rate of from two to four tons per acre in the autumn before planting cabbages or turnips. It is claimed that if the lime is applied from a year to eighteen months before planting, the results are even better. Burn all refuse from diseased crops. Practice rotation of crops; it is claimed that the disease may remain in the soil for from four to seven years. It is, therefore, advisable to drop plants belonging to the mustard family from a four-year rotation. Do not use manure from stock fed upon diseased roots. Keep down weeds belonging to the mustard family; they may harbor the disease.

POWDERY OR CORKY SCAB OF POTATOES.

This disease was discovered in Canada in 1912 by H. G. Gussow, Dominion Botanist, Ottawa, who reported it as being found in Prince Edward Island, Quebec, Ontario and Alberta. This fall potatoes badly attacked by powdery scab were sent to this Department from Liskeard, Ontario. This is a disease which should not be allowed to become established in this Province.

Tubers attacked by powdery scab become covered with conspicuous scab spots which are more clearly defined, more elevated and smoother on the surface than the scab spots of common potato scab. A very characteristic greenish dark powder may also usually be observed on the surface of the spots. In severe cases tubers may be much stunted and malformed and are frequently gnarled and knobby and covered with deep scars.

The remedial measures recommended are the planting of potatoes free from any signs of scab and as a safeguard disinfecting by soaking the tubers before cutting for two hours in a solution of formalin of the strength of one-half pint of formalin to fifteen gallons of water or in a corrosive sublimate solution, one part by weight of corrosive sublimate to one thousand by weight of water for three hours. This latter method is handy, as tablets can be obtained at any drug-gist's, one of which dissolved in a quart of water makes a solution of the required strength. Corrosive sublimate is deadly poison and corrodes metal and therefore must be used with caution. If a soil has once produced a crop of diseased tubers it will be infected and hence seed treatment will be of no avail. Rotation of crops or seeding down to grass and clover for a number of years are therefore recommended in such cases.

J. E. HOWITT, O. A. C.

C. W. Baxter, Chief Dominion Fruit Inspector for the Prairie Provinces, is spending a few days at headquarters in the Department of Agriculture, Ottawa. Mr. Baxter reports that the Ontario growers have improved their standing in the Western market very considerably during the season, notwithstanding the fact that the crop was rather a poor one as regards quality. The general improvement in packing, both in barrels and boxes, has inspired greater confidence in Ontario apples as well as other fruits. This general improvement in the standing of Ontario packing makes the violations that are found all the more noticeable. Mr. Baxter thinks that the competition which Ontario and British Columbia growers meet with from the United States is more largely in the matter of packing than in the fruit itself.

A Credit to its Publishers.

Editor "The Farmer's Advocate":

The Christmas Number of "The Farmer's Advocate" is a number which reflects credit in every way upon its publishers, an exceedingly bright cover, well printed illustrations, interesting articles, all combined to make what I believe to be the best number yet issued by the Wm. Weld Company.

GEO BRIGDEN,

Brigdens Ltd., Toronto, Ont.