

## Insects and Fungous Diseases in British Columbia.

EDITOR "THE FARMER'S ADVOCATE":

Among the very interesting addresses given to the fruit growers of British Columbia at their recent convention, was one delivered by Mr. Treherne, Assistant Entomologist for the province. He said that in 1901 their association had a membership of 15. For the first six years not more than twenty studied the subject and they used it as a hobby. In 1911 they branched out and began to deal with the subject as it affected economic problems. Now the society has over 100 members and more than sixty per cent. are active. To young men interested in agriculture there is no better field than the study of this subject. More and more the growers of fruits and grains are being forced to look to the entomologists to help them in the difficulties of new and strange pests and blights that every year sees added to the list of enemies. Because of its names and terms it is a study that requires a man well educated and one trained in the study of ancient languages, but that is not an insurmountable difficulty. In the newer provinces these men have discovered that quite a number of these pests will go back to the wild lands from which they came and will be forced there because they cannot survive under conditions that cultivation imposes upon them. Yet we may be sure that when they leave, there are those pests from the older sections which cultivation has produced, that will come to us and which are now receiving careful study and classification in order that they may be treated where they are now found.

The Russians have the credit of being foremost in the study of entomology, along with that of course is found that wonderful control of pests which only thorough knowledge of their ways and natures gives.

The society in British Columbia holds two public meetings each year. The meeting in the winter is for the purpose of transacting business and discussing the subject among those who understand the technical terms. The other meeting is held in connection with the Fruit Growers' Convention, and the subject is approached from the standpoint of the growers and in terms that any one can understand. It is due to the members of this society that the recent outbreak of "fire blight" has been put under control so easily, and from them to-day comes the warning of the pests we may expect in the very near future, and how we can best prepare to meet them when they arrive.

On the second day of the convention we had a very interesting address from the Provincial Plant Pathologist, Mr. Eastham. He advanced the opinion that the irrigated lands, were, comparatively speaking, free from parasitic troubles up to the present. The worst trouble that has attacked the growers in the fruit and vegetable line has been the fire blight. It is almost entirely a dry-land disease and to the expert men who first studied this disease and organized the districts for treating it, the credit must be given for its control. But now we have a new and perhaps more serious disease facing us, that is powdery mildew of the apple. It is quite serious already. It is thought to be considerably more difficult to treat in dry-land districts. It is a fungus which under ordinary conditions is easily killed. It attacks the apples as it does the gooseberry. The Mildew fungus grows over the surface of the fruit, but it starts on the buds in the spring. It is not a disease that can be attacked by a winter spray for it lies dormant inside the plant and dormant season sprays cannot reach it. To cure, cut off the affected parts as far as possible. Lime sulphur, where used for scab will help some. Iron sulphate is too tedious to make though it is good for this trouble. Tonic sulphur a new spray, largely in the experimental stage yet, but highly spoken of by Mr. Eastham, is giving some irregular results, but he looks for better when it is more systematically used. For mildew he recommended spraying when the petals were still on the trees and then repeat in a month. Tonic sulphur is a very finely divided sulphur and must be applied when there is clear sunshine.

He claimed peach leaf curl to be essentially a controllable disease, but it must be taken at the proper time. It discolors and later puckers the leaves. When the first leaves are unfolding is the time of infection. It is then that the spores are carried by the rain, which is the reason why so many people think it is a damp weather trouble and caused by a moist atmosphere. It is not caused by damp weather, but rains make it easy for the spores to spread. To cure, use 1 to 10 of lime sulphur applied as the buds are swelling. If the buds have swollen before the orchardist gets at them he is too late.

Peach twig borer: the name describes it. To cure, wait till the blossoms are out, then spray with lime sulphur. Many wait till this time and hope to combine the attack on the peach leaf curl and the borer which has been the cause, no doubt, for the impression that peach leaf curl is hard to control.

Peach mildew is the same as the apple mildew. It finds its way on to the fruit and makes a splendid footing for other more serious troubles. To cure, treat the same as for apple mildew or combine for peach worm, using two pounds of lead with each barrel of spray.

A new disease is now appearing on apple, peach and plums known as silver leaf. It shows up at first on scattered limbs, on individual trees. It is caused by frost wounds becoming infected, but strange to say the fungus works where the disease is not. It shows up on the leaves, but it is working in the limbs. One must attack it through the sap. At Naramata and Summerland 8 lbs. of sulphate of iron is dug into the

soil about the tree roots toward the end of May and the orchardists are reporting good results. Three trees, the year after treatment, showed absolutely no signs of trouble and bore heavily. The next year they were in bearing again and still showing no signs of a return of the disease, so that even if it gives the grower only two years additional life and crop, 25 cents spent on a tree is a good investment. The trees he referred to were apriots.

B. C.

WALTER M. WRIGHT.

## New Director for Vineland Experiment Station.

E. F. Palmer, B. S. A., has been selected by the Minister of Agriculture to succeed F. M. Clement, B. S. A., Director of the Horticultural Experiment Station at Vineland who is leaving to take a position as Professor of Horticulture in the new University of British Columbia. Mr. Palmer is the son of one of the most prominent fruit growers of British Columbia and before coming East seven or eight years ago had considerable experience in the growing of tender fruits and also co-operative marketing. He came East to take a course at the Ontario Agricultural College, and upon completing it entered the Department of Agriculture as Assistant Director of the Fruit Branch. In this work he has been brought in touch with the fruit growers of Ontario and conditions here, particularly in the Niagara District. He has written a number of bulletins on different kinds of fruit and also edited the revised edition of "Fruits of Ontario," which was issued a short time ago. Much valuable and interesting work has been inaugurated at this station during the last few years and Mr. Palmer is qualified to carry it to a successful issue along with other matters to be initiated by himself as Director of the Station.

## POULTRY.

### He Got the Duck Fever.

EDITOR "THE FARMER'S ADVOCATE":

Many object to keeping ducks. They say that there may be money in them but that nobody can get it out, which is nonsense, of course, as any number of people have made a good return on their outlay of money and time by keeping ducks. But it is not a "now-and-again" job. It is a steady every-day one with no days off for the first two or three weeks. I have tried pure-breds, mixed breeds and scrubs and I would vote for the pure-breds every time. Why? Because it does not cost any more to feed them, they lay on fat better and bring a great deal more if sold alive for breeding. My pure-breds laid more eggs too, but that may not always happen.

I never used an incubator; but set the eggs under hens. I never encouraged my ducks to set, that is until about the end of the season. Ducks as mothers have not been unqualified successes with me anyway. Hens are much better.

As soon as the youngsters are hatched I bring them into the house and put them into a box or basket with wool for warmth. Be sure and put a cloth over the wool for young ducks are of a very investigating turn of mind, and they will be liable to get the wool, if they have a chance, into their mouths, very much to the detriment of their comfort to say nothing of their lives.

Bread, softened a little with milk or water, forms their chief feed for a couple of weeks. Be careful and do not overfeed during this time. You will be a better judge of how much they need than they will be themselves. Ducks know many things and they can learn many more, but never expect them to learn the correct amount of feed they should eat. If you are inclined yourself to go to one extreme or the other in feeding your stock, in the case of ducks incline a little to the side of scant feeding. They will stand a better chance. When their appetites get a little too hearty for a bread diet they get a ration of mashed mixed grains. This is never hastily stirred up with water; but is made like bread that you would not be anxious for your family to eat. Quite a quantity can be made at a time as it keeps well and when wanted for use soak the desired

amount in a little water; but do not have it soft like a poultice.

Ducks do not seem to know the first thing about "Fletcherizing" so see to it that they have a dish of fresh water served with their meals. They will appreciate a like attention at other times too. If you do not want to go to the expense or trouble of buying proper drink dishes you will find that tins in which finnan haddie comes answer the purpose very well indeed, while your birds are small.

My duck coops are not artistic but they serve. They are like a box without bottom and woven wire top. They are usually about four feet square, as that size is not heavy to move, and with a dozen birds to a coop of course they must have fresh feeding grounds at least twice a day. I should imagine green feed of some sort to be a necessity to young ducks. I never tried to make mine do without it. Notwithstanding the old adage about rain being good for young ducks it is not. Never let your birds get very wet. Of course rain does not affect old ducks, that is a shower will not hurt them at all, but continued dampness is not good for them.

If at any time the duck-raising fever should attack you, be glad of it and remember these three things,—perfect cleanliness, keep them dry and don't overfeed.

Cumberland Co., N. S.

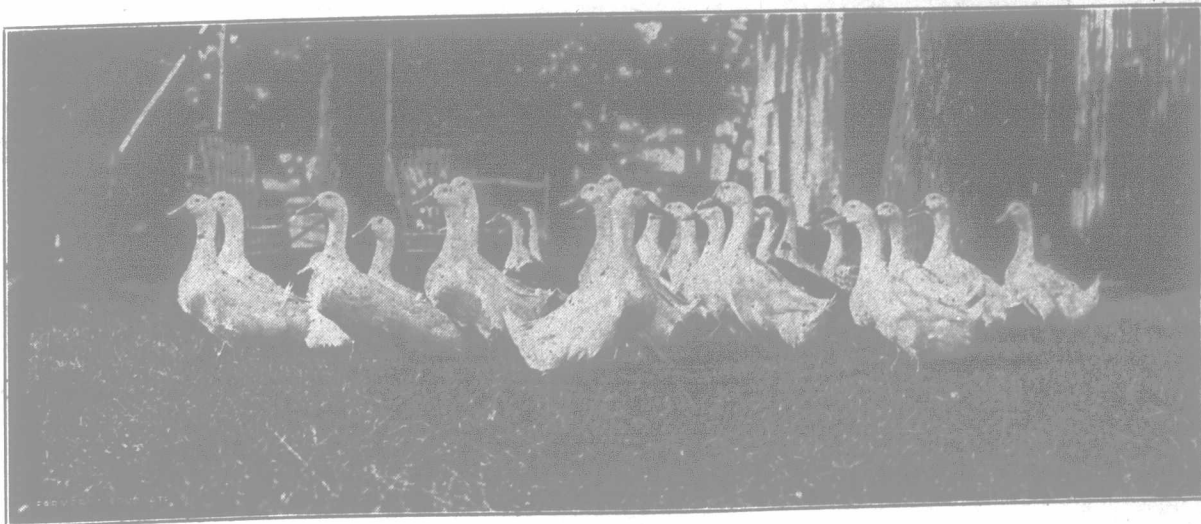
N. C. B.

### Preparing Birds for Exhibition.

The fall fair season is close at hand, and it is time the show birds were picked from the main flock so that they can be given a few weeks' special care and attention. Too often at local fairs the birds are not in show condition. They look as if they had been selected on the morning of the fair. At that, they may win if the competition is not too strong and if no exhibitor spends time fitting his birds. But is that the true show spirit? Is it not much better to carefully select the birds and have them in the pink of condition? The poultry exhibit at the fall fairs will never show much improvement until local exhibitors commence fitting their birds.

Three or four weeks before the show the flock should be carefully gone over and only those free from any disqualifications put in the exhibition pen. Watch for side sprigs, stubs, poorly shaped combs, white in red faces, off color feathers and poorly colored legs. It frequently happens that a breeder fails to see weak points in his own birds, and it is advisable to have another breeder examine the flock and discuss the good and bad points about the birds. If some are a trifle light in weight they should be put in a pen by themselves and given extra feed. Shorts and a little cornmeal mixed in milk are used by some in addition to the whole grain. Others feed liberally on bread and sweet milk and find that the birds gain rapidly.

In making up the pens select females as nearly alike as possible in size, shape and in fact every point. Lack of uniformity gives the pen a poor appearance. It is as necessary to train the birds for the show as it is the live stock. Have the birds pose for inspection. This can be done by frequently handling the birds so they will become tame. The frightened bird seldom shows to best advantage. If the birds are confined in exhibition coops for a few days previous to the fair they become accustomed to close quarters and do not notice the change so much as they do when taken direct from a large pen to the show. The most difficult task is to wash the birds so as not to injure the feathers. Rain water heated to 98 or 100 degrees and plenty of soap should be used. The legs will require vigorous scrubbing with a brush to loosen the dirt, and a toothpick may be necessary to dislodge dirt from under the scales, and so eliminate considerable of the discoloration. Next take a small brush and work kerosene oil up under scales to kill any mites which might be lodging there. The bird may then be set in deep soap-suds and the dirt worked out from among the feathers. This has a tendency to take the oil and luster out of the feathers and they do not lie properly. If the water used for rinsing is allowed to pelt down among the feathers it has a tendency to straighten them out. After being washed the birds must be dried thoroughly either by the sun or else over a heated pan and then placed in a clean coop or pen. Just before the fair steam can be used to make the feathers spread to their natural form



Ducks Should Be Sold at 10 Weeks Old.