paste that will find its own level in the trough. This is fed three times a day at first, being careful not to feed too much at a time. The birds should always be hungry. A feed such as this consists of about 97% flesh-forming substance. Thus we find by keeping birds in crates and feeding them this ration, about 25% more flesh is formed than in the ordinary way. The flesh is of a good quality, and makes a good appearance when put on the market.

All birds are packed in boxes. The boxes are lined with paper, and twelve birds packed in a box. A neat, clean package, which makes a pleasing appearance to the eye, has a great effect on the price the consumer will pay. This will apply to nearly all other farm produce as well.

Q.—Do you draw your birds?

A.—No; we find they keep better when not drawn, and if starved before killing the waste amounts to very little.

Q.—Do you get many birds with crooked breastbones?

A.—No; none to speak of.

Q.—What is the cause of crooked breastbone?

A.—It is caused by birds roosting too young, or on account of injury while young.

Q.—Do you think the supply will ever get above the demand?

A.—Not for some time. Saskatchewan has taken all our birds up to this year.

After the address, Mr. Wilson gave a practical demonstration on killing, plucking and packing chickens, which proved profitable and interesting to those present. J. MAC.

APIARY.

Time the Bees Were In.

It is a mistake to leave bees standing outside in single-walled hives late in the fall, after good flying weather is past. The rain and wet snow of late fall soak the hives, making even the insides wet and uncomfortable for the bees, and the cold winds blowing in the unprotected entrance make it extremely hard for the insects to maintain a living temperature, and impossible for them to enjoy the comfort which is so essential to their well-being at this time of the year. Two weeks or ten days of this sort of treatment will exhaust the vitality of the bees more than a month or six weeks of the conditions that prevail in a good dry cellar or in a double-walled, chaff-packed hive outside. It is a common thing, when travelling through the country at this time of year, to see beehives in a farmer's yard, standing just as they were when the honey boxes were taken off the tops of them, and awaiting the time when their owner has all his other live stock snugly housed for the winter, before they receive their share of his attention. This time may not come until perhaps the first of December, or maybe the 15th; but the bees have to wait all the same, no matter if each day is taking a week off the spring end of their lives, and a consequent reduction in their next season's usefulness.

Then, when the farmer, or other careless beekeeper, finds his bees "petering out," in the spring, and the colonies dwindling away to mere handfuls, or perhaps dying out altogether, at a time when they should be increasing rapidly in numbers, he wonders what is the matter with them, and most likely lays the blame to nearly everything but himself, in which he is not so very much unlike other folks in other occupations.

As soon as the weather becomes so cold in the fall that the bees cannot fly frequently, they should be placed in their winter quarters. This is usually about the first to the 15th of November in this latitude. There is nothing to be gained by leaving them out through two or three weeks of bad weather on the off-chance that there may come another fine day, for the good effects of the said fine day, provided it does come, are more than offset by the strain on the vitality of the bees, caused by the cold and dampness of the bad weather, and by the deteriorating effect which these adverse conditions have on the honey which is to form their food supply for the winter. Bees which are to be wintered outside, and are packed snug and dry long before this time, are, of course, all right, and can enjoy any flying day that may happen along at any time. But the unprotected hives are better indoors as soon as the bad weather commences.

Therefore, if you are letting your bees stay out and shiver while you put the finishing touches on an already fairly-snug horse or cow stable, hog or sheep pen, or poultry house, stop right where you are, right about face, and begin at the other end of the programme. Tote the bees into the cellar or pack them on their summer stands, according to the method of wintering you practice. It will take only a short time—a very short time, if you go at it right—and it will pay you well in the added vitality the bees will have to draw upon next spring, when every day the bee lives beyond what he would have lived if he had had a hard "racket" this fall, will mean added strength to the colony and added weight to the honey supers when the clover blooms again. E. G. H.

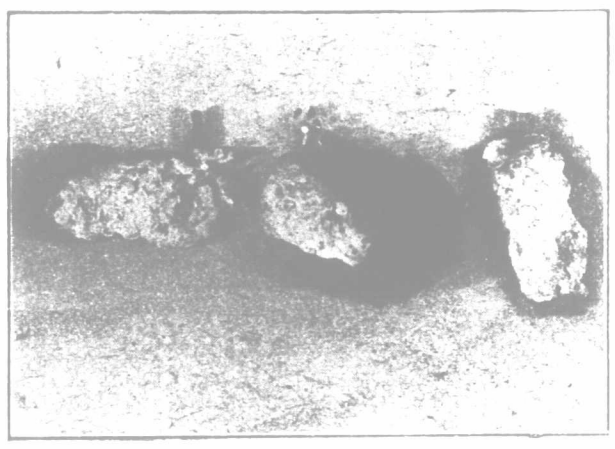
Victoria Co., Ont.

GARDEN & ORCHARD.

Tussock Moth.

[The following article is a hitherto unpublished manuscript, prepared for publication last winter by the late John S. Pearce, Parks Superintendent, London, Ont. Delay in securing the illustration led to the article being held over for a year.—Editor.]

The Tussock moth is gradually working its way into Ontario, and it might not be out of place to call the attention of your readers to this pest. It is pretty bad both in Montreal and Toronto, and has some foothold in London. The citizens have been appealed to to destroy the nests or egg-masses, which consist of a white, frothy-looking mass, about the size of an American nickel or a ten-cent piece. They are attached to the bark on the trunks of the trees, and, if numerous, up



Tussock Moth Egg Masses.

among the lower limbs and in the crotch. They are very easily discerned—can be seen across the street. You will find the male cocoons as well, but these are harmless: only the white egg-masses need be destroyed. Everyone should keep a sharp lookout for these, for one doesn't know how soon they may be in his midst. These nests are so easily seen and destroyed that there is no excuse for allowing them to gain any headway. Every town, every village, and every township council should see that someone who knows his business keeps a sharp lookout for these pests. The State of Massachusetts has spent hundreds of thousands in fighting this pest and the Gipsy moth. New Hampshire slept while the pest gained a wide foothold, but Maine, with strict vigilance, has succeeded in limiting the area to the border territory first invaded. They are so easily seen that one can scarcely pass them without noticing them. Keep a sharp lookout, and destroy the egg-masses.

The Bitter Pit of Apples in Australia.

IS IT THE SAME AS OUR BALDWIN FRUIT SPOT?

For some years Baldwins in certain districts in Canada and the United States have been affected with a disease called the "Fruit Spot," distinguished by sunken brown areas, sometimes scattered through the flesh, and by their bitter taste.

In September of the present year, Mr. McNeill, Chief of the Fruit Division, sent me specimens of Blenheim, Orange and Gravenstein from Nova Scotia, which showed similar bitter sunken spots to those of the Baldwin. So far as I could discover, there was no trace of a fungus present, and I am of the opinion that the spotting is due to physiological causes, perhaps indicating, as some horticulturists believe, a lack of adaptation of the variety to the soil or locality, especially the inability of the plant to supply water to the tissues as fast as needed.

Whether the Bitter Pit of Australian apples is identically of the same nature, I am unable to say, but the descriptions of the Bitter Pit given by Professor Farmer, of England, and by Professors Cobb and McAlpine, of Australia, who have studied the disease carefully, tally very closely with the Fruit Spot of the Baldwin. Moreover, the opinion is expressed that the Bitter Pit is due to some obscure physiological causes, rather than to a fungus or a bacterium. Prof. Farmer says that the condition, whatever it may be, tends to affect the formation of the starch; or more probably, the action of the starch-dissolving ferment is locally inhibited, as the cells of the affected areas are always full of starch.

Bitter-pit spots are not confined to any special region of the apple. They develop within the flesh and extend outward. Sometimes no trace of the disease was observed until the apple was cut open. Diseased fruits have poor flavor, and do not keep well.

Professor Cobb, of Australia, believes the disease is not contagious, but that a tree once diseased will continue to bear diseased fruit. He advises the removal of such affected trees, and knows of no remedy beyond the removal of affected trees, and the planting of varieties not liable to the disease.

Professor McAlpine, also of Australia, says that perfectly-sound fruit will suffer nothing by shipment, but suspected varieties should not be packed for some time after picking, so that any showing symptoms of the Bitter Pit may be discarded.

Bitter Pit is prevalent also in Tasmania and South Africa.

Since the Fruit Spot of the Baldwin and other Canadian varieties is very similar in nature to—if not identical with—the Bitter Pit of Australian apples, it is the duty of the Government authorities to make a careful study of the Fruit Spot, for the purpose of determining the exact nature of the disease, how it is induced, whether it is a dangerous disease, and one likely to injure our apple trade in Great Britain, and if it is due to a lack of adaptation of certain varieties to certain soils or localities. W. LOCHHEAD.

Macdonald College, Que.

The Culture of the Pear.

The pear is one of the very desirable fruits, and one that is not produced in sufficient quantities to supply the demand for it. It is somewhat more difficult to grow than the apple, and suffers under neglect, hence is not found on many farms. It is only necessary to know the right conditions, and to follow right methods, that this most excellent fruit, now mainly a luxury, may be grown with profit over a much wider area.

In a bulletin issued by the Massachusetts Board of Agriculture, written by George T. Powell, of Ghent, N. Y., on the culture of the pear, the following are some of the points brought out:

The ideal soil is a clay loam. For the proper development of fine specimens of fruit, growth should not be checked by drouth during any period, as will happen almost any year if planted in a dry, porous soil. While the soil needs to be well supplied with plant food, it should not contain too much nitrogen, as an over-luxuriant growth of wood is subject to blight. If bearing trees are, in addition to producing a full crop, making an annual growth of six to ten inches, they are in the best possible condition.

While, on porous, dry soils, pear orchards will not live long nor thrive well, yet, where the soil is too retentive of water, it, also, is unfavorable, and should be thoroughly drained.

As is the case with other fruit trees, the ground the years previous to planting should be in a cultivated crop. Trees two years of age cost less than those larger, and, having less comparative loss of root in being dug up, will come into bearing as soon, and sometimes sooner.

For orchard planting of standard varieties, 25 feet space should be allowed in each direction.

In the selection of the varieties to plant, it is well, if there are any pears grown in the neighborhood, to observe what kinds succeed the best and live the longest, and to plant those varieties.

The Bartlett is the best pear, most universally grown, and in greatest demand. The Seckel, though small, represents the highest excellence in quality. Clapp's Favorite may be planted to a limited extent as a summer pear. It is fine-looking, large, and of good quality, but it decays at the core if not picked early. Among other varieties of merit, the Flemish Beauty, Sheldon (both of excellent quality) and the Kieffer are mentioned. The Kieffer is a very profitable pear for commercial growers, ranking in popularity next to the Bartlett; but though a great bearer, and useful for canning, it is absolutely worthless as a dessert pear.

For those who would plant pear trees in small gardens, the dwarf varieties are most suitable. They require, more than the standards, constant cultivation and heavy pruning. They should be planted 16 feet apart in both directions. There are only a limited number of varieties that succeed as dwarfs. The Angouleme is the best; others that are recommended are the Anjou, the Seckel, the Louise Bon de Jersey, and the Josephine.

While cultivation is absolutely necessary in the growing of dwarf pears, it is also strongly advised for standards as well. Sod-bound trees will make little growth, and the fruit will be small, and of inferior quality. As in apple culture, cultivation should be continued until mid July, and then cover crops sown. Clover should be used sparingly for cover crop, as it tends to increase to an extent injurious for pears the nitrogen content in the soil.

But little pruning is required for standard trees after their form is well established. The tops should be cut out occasionally to keep them from growing 50 or 60 feet high, as they otherwise would.

For pear blight, the most serious disease of the pear, which has swept down whole orchards, there is only one remedy, persistent cutting out of all affected wood several inches below the discolored parts.