

The Apiary.

Wintering Bees.

Sir Robert Peel was accustomed to say, "Ireland is my difficulty." In like manner, the bee-keeper in this climate, may say with truth, "Winter is my difficulty."

We have found a remedy for most other difficulties, but it is not too much to say, that this one remains unconquered. The serious losses of the past two or three seasons, induce feelings of uncertainty and apprehension, now that another winter is upon us.

Until recently, the common custom was to winter bees on their summer stands. During a moderate season, this was found to answer very well, but long-continued severe weather, and especially the prevalence of bitterly cold winds, caused great mortality and heavy losses, even with double-walled and so-called frost-proof hives.

In door wintering too, has been tried and found wanting. Sometimes it works well, and on the whole, it has been more successful than the other method. But there have been many failures. These have been variously explained. Lack of warmth, insufficient ventilation, too great warmth, close confinement, damp, impurity or thinness of honey, decay of the bees, extreme quietude, artificial feeding, and the want of it, are among the most prominent theories that have been put forward to account for the failure of in-door wintering.

Mischief usually develops in the form of dysentery, and the explanations above enumerated, relate to the cause of this trouble. In a state of confinement, the excrementitious matter is retained in the body of the bee. Its habit is to discharge its feces when on the wing. If bees cannot fly, the feces are undischarged, unless distension and discomfort compel them to defecate the hive. Under favorable conditions, in which but little honey is consumed, and the bees get into a state of semi-torpor, this retention of feces may continue a long period. Bees have been known to remain five months in winter quarters without a discharge, and yet come out vigorous and well. A warm day is chosen to release them from confinement, so that when set out of doors they can at once enjoy a cleansing flight. It is not always possible however to secure the conditions necessary to enable stocks to endure a whole winter's imprisonment. If they are too warm they become active. Excessive exertion, appetite leads to a larger consumption of food, the digestive organs become over-crowded, and vent must be had. When once a hive becomes foul with excrementitious voluings, it is unwholesome, and things go on from bad to worse. If there is not proper escape for the moisture of the hive, or if the winter quarters are damp, mould is developed and the fatal dysentery sets in. As already stated, other causes lead to the same lamentable result.

To prevent the over-accumulation of feces, means have been adopted to give the bees a mid-winter flight. The hive has been taken into a warm, well-lighted room, and opened, so that the inmates might sally forth, and relieve themselves. Or a box covered with wire-cloth has been fitted to the top of the hive, and the bees have been permitted to have a little liberty in it, once or twice in the course of the winter. In some cases these expedients have been successful. But they are attended with considerable trouble, and with a large apiary, they are well nigh impracticable.

An intelligent bee-keeper has recently profounded the theory that the cause of all the trouble is want of water. He argues that bees are well known to be large consumers of water during the active season. They cannot manufacture honey or rear brood without it. All animals require more or less water, and cannot sustain life for any length of time without it. In proportion to its size, the bee consumes more water than the horse or the cow. Why then should the bee be expected to do without water all winter, any more than larger stock?

The theorist referred to contends that dysentery is caused by a feverish condition of the system, with a high state of local inflammation in the stomach and intestines, and an oval condition of the humors or juices of the system, accompanied by inflammatory action. In this corrupt condition, these humors have actually become a disease, oc-

cupying the whole system of the honey bee, and being so diseased, the physical system of the bee attempts to expel the offensive matter, by sending it to the intestines, where it is thrown out in the form of dysentery, and death follows, as there is no supply of water to replenish these juices, which are as essential to life as the breath. Water would have prevented all this, by keeping up a supply of these juices, and maintaining an equilibrium throughout the system; but dry food cannot replenish the juices without the aid of water.

There is certainly an air of reasonableness about this theory. We do not know whether its author has experimented upon it, so as to be able to sustain it by facts. But it is worthy of attention by bee-keepers generally. When bees are wintered out of doors, they have occasional opportunities for flight, and at such times, can obtain a supply of water, as it is only when the sun has power enough to thaw ice and snow, that bees venture to fly in winter. It may also be the case, that in those well authenticated instances of in-door wintering which are on record, there was enough moisture generated in the hive to supply the bees with moisture, and yet not render the hive damp and mouldy.

It seems to us that experiments are greatly needed just now in three directions, with regard to this matter of wintering.

1. To get, if possible, a hive for out-door wintering which shall be impervious to frost, and yet not so close as to keep the bees too warm. Keyes & Finn, of Clyde, Jasper County, Iowa, advertise in the *American Bee Journal*, that they have a hive which meets these conditions. It is double walled and has a chaff ventilator and feed box. They state that the past three winters have established the fact that their hive "winters bees safely every time on their summer stands." Quite an array of testimony from bee-keepers of good standing sustains their advertisement. We have not tried the hive in question. In fact, our first knowledge of it was derived from an advertisement in the December number of the *American Bee Journal*.

2. The plan of giving bees one or two cleansing flights in winter is deserving of further trial. Though difficult of adoption with a considerable number of colonies, and as we have said, well nigh impracticable with large apiaries, beekeepers who have only a few stocks might practice it to advantage.

3. The water theory should also be thoroughly experimented upon.

Serious as the winter difficulty confessedly is, it ought not to be regarded as insurmountable. Surely it can be overcome by patient investigation and persevering experiment. He who shall tell us how to winter our bees with unflinching success, will certainly deserve well of his fellow-beekeepers, and of mankind at large, for it is here that, just now, we most of all need enlightenment.

Bee Works and Bee-Keeping.

(To the Editor of the CANADA FARMER.)

SIR:—What are the best works on bee-keeping? What is the price of a good hive with a colony of bees, and where could I purchase them? Do you think Orillia too far north for them to succeed? I know nothing of the management of bees and I wish to learn, so I come to you for advice, seeing the many good answers you have given to your correspondents for this year. I come to you, therefore, as the good book says when it commands us to "go and do likewise."

Orillia, Ont.

W. T. Y. L.

There are several good and exhaustive works on bee-keeping; among them:—"Langstroth on the Honey-Bee," price, \$2.00; Quinby's "Mysteries of Bee-Keeping," price, \$1.50; also works by Kidder and H. A. King, of which we do not know the price. Apply to Mrs. Tupper, Des Moines, Iowa., for information about price of hives, etc. Of course, the price varies with the breed, etc. Orillia is not too far north for success.

In the CANADA FARMER, from time to time, you will see articles on bee-keeping in their proper department. By reading them, you will be able to keep posted. When you get in full swing, a few details of your experience in taking up bee-keeping will be valuable to your brother-farmers, and we trust you will send them to us for publication.

The Poultry Yard.

Cost of Poultry Work.

(To the Editor of the CANADA FARMER.)

SIR:—What is the cost of Wright's "Practical Poultry-Keeper" delivered in Halifax? Mahone Bay, N.S.

C. B. H.

Wright's "Practical Poultry-Keeper" should cost, free by mail from the United States, \$2.00 in American currency.

Feed for Poultry.

(To the Editor of the CANADA FARMER.)

SIR:—Will you kindly tell a young beginner whether poultry will thrive on boiled parsnips, carrots and pumpkins, mixed with fine shorts and fed to them warm in the morning, with an afternoon feed of corn and buckwheat? F. SMITH.

Leave out the pumpkins; the parsnips and carrots, mixed and given as described, will answer very well. Let it be sufficiently dry to prevent it sticking to the fowl's bills. Buckwheat is excellent for the afternoon food. Indian corn is fattening, and should therefore be given sparingly. With a comfortable roosting place, your fowls should lay all winter, that is if they are not too old. A little fresh meat once a week would be of benefit. Hang up in the corner of your yard, by its roots, a cabbage head, a convenient distance from the ground to allow your fowls to pick it. They require green food occasionally, and this will be a very good substitute in the winter. Also place in another corner of your yard, under shade, if possible, a little fine gravel, pounded oyster shells, or if these are not convenient, then some coal ashes; fowls require something of this nature to assist the gizzard in grinding the food. The ashes will answer for a dust bath also.

FOUR CARRIER PIGEONS were recently sold in London for an aggregate sum of \$375, one of the four bringing \$150.

THREE THOUSAND DOLLARS in prizes are offered to competitors at the second annual exhibition of the Central New York Poultry Association, to be held in Utica from the 6th to the 13th of this month. Catalogues are now ready for distribution.

THE TREAD.—It is well known that there is a thick substance floating in the white, generally attached to the yolk, of nearly all fresh eggs—less transparent than the white, and frequently having a pithy appearance—and that substance is almost universally believed to be "the tread," or that portion which impregnates. This is a great error, which can be easily proved by taking eggs laid by hens that have never been with a cock, and breaking them, when the same substance will appear.—*Cor. Fanciers' Journal*.

DECOMPOSITION OF EGGS.—According to Mr. William Thompson, of Manchester, the decomposition of eggs may be brought about by any one of three different agencies. The first, which he terms "putrid cell," is generated from the yolk, this swelling and absorbing or mixing entirely with the white, and ending with a true putrefaction. The second is that of the vibrio, the germs of which (floating as they do through the atmosphere), when settling on the moist surface of an egg, readily penetrate into it, and set in motion the putrefactive condition; but when the shell is dry such penetration is impossible. The third is a fungus decomposition, in which the spores penetrate through the shell as before, sending filaments through the egg and converting the white into the consistency of a strong jelly, the filaments being sometimes so abundant as to cause the whole contents to resemble a hard-boiled egg.

THE POULTRY WORLD does not think that the best and most economical way to pluck fowls for market is by doing it without scalding. It prefers scalding, but says: "If there are any who want to operate without the scalding process, let them do so, and when they are tired of it, let them try the following improved method: Dip the fowls in cold water and let them drip. Then apply finely pulverized resin to the feathers, using a dredging box for convenience. Then scald in the usual way. The resin sticks the feathers together so that the pin-feathers come out with the others, saving much trouble. Apply about half a teaspoonful of resin to a fowl. Use the common crude article. It is cheap stuff and its cost is made up ten times over by the labor saved." Half a teaspoonful of resin dredged on each fowl! You fancy this will not "take," either with the farmer, or his wife and daughters, or whoever has the preparing of the fowls. We prefer cold plucked poultry and they usually bring two cents a pound more.