

family immediately after their appearance above ground. After the plants have made considerable growth they gradually disappear; but from their eggs have meanwhile hatched small white grubs which feed upon and perforate the roots of the plants their parents have not yet destroyed. When full grown (about a month after they have been hatched, and when nearly half an inch long), they form chrysalides, near the field of their destruction, from which the perfect insects escape in about two weeks, to repeat the injury done by their ancestors. A large number of remedies have been tried, but all of them lack perfection. Paris green and white hellebore have given the best satisfaction. The former should be applied in a little weaker form than that usually used for the destruction of the potato beetle. The best policy is, however, to use preventative measures; and for this purpose a wooden frame, covered with mosquito netting, placed over the vines before they appear above ground, is one of the best.

**THE CODLING-MOTH.**—This insect is one of the greatest enemies of the apple grower. The moth lays her eggs on the young apples just after they commence to form. The young grubs, which hatch in about a week, burrow into the heart of the apple, which they leave in about four weeks to form their cocoons in some sheltered spot, preferring loose pieces of bark or crevices on the trunk of the tree. From these the perfect insects escape in about two weeks, to repeat their work of destruction. Remedies.—The old and well-tried plan of placing bandages of paper, cloth or straw around the tree still gives good results. The bandages should be from four to six inches wide, and tacked or tied around the trunk of the tree, in the latter part of June. They should be examined nearly every week, care being taken to destroy all the chrysalides collected under them. All the prematurely-fallen fruit should be picked up and fed immediately after falling. This is best accomplished by pasturing the orchard with sheep or swine. Spraying the trees shortly after the fruit has formed, and about the middle of July, with Paris green;  $\frac{1}{2}$  pound to a barrel of water has been found to be one of the very best remedies.

Prof. A. J. Cook considers one pound of sulphate of copper, 10 pounds of quick-lime, two pounds of whale-oil soap, and two gallons of kerosene oil mixed in a barrel (31 gallons), of tar water (made by putting three quarts of tar in a barrel of water and letting it stand three days), an excellent mixture, for the destruction of insects, he says:—"Sulphate of copper has both insecticidal and fungicidal properties. The lime has the same in a mild way. While whale-oil soap is an excellent insecticide, kerosene is even better. The tar water will certainly add to the value of the mixture, as it repels, if it does not actually kill insects. The soap, kerosene and water should be churned by pumping the mixture into vessels with a force-pump till an emulsion is formed."

In answer to a question how to destroy the onion maggot, Prof. Cook says:—"Kerosene emulsion, if used early enough and persistently enough, will succeed. It will kill all it touches. But as they hatch every few days, you must use the remedy as often, and as the worms soon burrow into the substance of the onion or the radish, the application must be made before they have got in out of reach."

## Poultry.

### Vermin.

These are perhaps the most inveterate enemy of the poultryman. There are various kinds, but the greatest trouble is experienced with the hen lice, the large grey chicken lice and the little red mites. The hen lice are not at all difficult to eradicate; in fact, gross neglect is the only cause of their appearance in the poultry-house. If the perches are saturated once a month with a wash of carbolic acid, they will not appear at all. If they are on the fowls they will be found in the fluff, and may be easily destroyed by sprinkling sulphur among the feathers of the fluff and under the wings. Turn the hen up, that it may reach the skin at the bottom of the feathers. The large grey chicken lice are very much like the hen lice, but larger and of a different habit. They are found on the chicks at from two weeks to two months old. They locate on the back of the head and neck, burrowing into the flesh like a tick, often in great numbers. We have seen as many as forty on one little pate. If these once get a hold in a flock of chicks they must receive attention at once, or the loss will be great. A very simple and effectual method of getting rid of them is to take the mother hen, a short time before sun-down, and with a large sponge dipped in coal oil, then squeezed as dry as possible with the hand (don't be afraid of squeezing too dry), rub the feathers upwards or against the lay of the feathers, all over the lower parts and breast. This will give the hen a very strong smell of coal oil, and not leave the feathers dripping so as to harm the eyes of the chicks. They will in a very short time have their heads in the feathers of the mother for the night, and by morning not a louse will be found. It is best to do this once when the chicks are about two weeks old, and again when they are about five weeks old; and you need not look for lice, as there will be none to see after these two applications. Last, and although least in size, perhaps the most troublesome, are the little red mites. These usually appear about the middle of July, when the weather is very hot; and at that season half the poultry houses in the country have them in myriads. They may be found during the day on the under side of the perches, and in cracks and crevices convenient to the perches. They are bright red, colored from the blood with which they gorge themselves at night. They congregate in patches to such an extent that if the perch is flat they may be crushed *en masse* with a flat piece of wood into a bloody mass. A thorough application of coal oil will drive them away; but it must be thorough, or in a few days they will be as bad as ever. We have used a weak wash of carbolic acid and water once in two or three weeks for the last two seasons, and have not seen a single mite. The acid is preferable, as it acts as a disinfectant and destroys much of the foul odor peculiar to the poultry house.

A correspondent in the Country Gentleman writing about gapes says:—"I have used a simple remedy for a long time—one that I have never seen mentioned. It is simply to put kerosene oil in the water, once in a while, not too much at a time—a person would have to use judgment about quantity. As soon as I notice a chicken, large or small, gaping, I give a dose in water. They do not seem to notice it. I have never lost any from the gapes."

## The Apiary.

### Seasonable Hints.

In the May number the importance of a superior quality of honey was touched upon. Too long the impression has been general that honey is all alike, and if consumers would learn to fear less adulteration and enquire more into the quality, their attention would be drawn to a point which requires closer attention. Adulteration is practiced but little in Canada; the quality, however, can be vastly improved. The sources of honey are many; that obtained from willow, poplar, fruit bloom, and in fact almost all until clover, is more or less inferior in flavor and color, it has, however, a very important use in stimulating bees to rear brood and also provide them with stores. The brood produces bees which are afterwards to give us our worker force in clover, thistle and basswood flow.

If more honey is gathered by the bees than is consumed by themselves and brood before clover harvest, it should be carefully removed so as not to mix with that which is classed as 1 A, and this inferior should never be mixed with the superior as loss will result.

We have now arrived at the commencement of the honey season, and the bees are gathering nectar from clover blossom. This nectar is, as we all know, a thin sweetish substance, but quite unlike honey. The thickness of it depends upon the season and time; in a very damp season it is thinner than when dry and the same directly after a rainfall. The bees then evaporate a great part of the moisture, this is done partly by spreading it over a large surface in the hive and partly by a peculiar process, namely: the bee takes up the honey through its organ for the purpose and then expels it again, removing a part of the moisture in the process, and this process is repeated again and again, the nectar undergoes the first process of digestion and is ready for assimilation. When the process of evaporation, &c., is completed the bees seal the cell and it is called ripe. In our greed for wealth we have put the honey extractor to poor use, and too many have extracted when the honey was unripe, in short, checked the process of ripening, and although the quantity was somewhat increased it was at the sacrifice of quality. Again, by too frequent use of the extractor the colony is deprived of all winter stores, and feeding must be resorted to in order to winter. Feeding should always be avoided by one who has not experience.

Many ask, "When honey is extracted, what must be done to make it fit for market?" All that is necessary is to strain it through a cloth, say a cheese cloth, and run it into vessels which will keep it free from all dust and filth. To preserve it in the best manner keep it in a hot dry room, a cellar is bad, so is a room off a hot room where all moisture condenses. Remember honey has a great affinity for moisture and it should be kept in a dry atmosphere. Tin vessels clean and free from rust are perhaps the best, as when honey granulates, unlike when in wooden vessels, it can readily be liquified.

The question is often asked, "How many times may I permit my bees to swarm?" It is an important question, but which can be answered about as easily as the question "How many lbs. of honey can I get from a colony." Beginners nearly always err by allowing too much swarming.

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