

salis state in the summer, produces a second brood, and this often so late in the fall as to remain in the fruit when it ripens, and is either pulled or falls from the tree. In either case the immediate gathering up of all infested fruit, and its consignment to pigs or its disposal in such a manner as to destroy the worms, is most important, but Mr. Saunders inclines to the belief that, if the plan he suggests were carefully adopted in every instance, the worms would be so diminished in numbers as to be comparatively harmless in the following season, and ultimately nearly got rid of. But, where the orchards of different persons are contiguous, common action is necessary, or any one idle orchardist may re-stock his neighbour's trees, in spite of their precautions. In shipping apples, the utmost care should be taken to reject wormy fruit, as one or two infested specimens may discredit the whole barrelful.

Mr. Beadle does not, in his evidence, say much for the vigilance of many of our fruit growers in regard to the Codling Worm. He says:—

"Our orchardists have not yet learned a way of fighting the Codling Moth. It is so small, and does its work so secretly, that it is not found out until the apples are ruined. I don't know of any one who has adopted a persistent course to get rid of it. There have been attempts, to a limited extent, to trap the larvæ by bandages. I am satisfied from experiments by myself and others that they can be trapped by placing bands of paper or woollen cloth around the tree; into these the larvæ will go to change to the chrysalis state. The bands should be examined every week or ten days. I have been told that by placing shingles, fastened together in pairs, so close that they almost touch each other about the tree, the insects may be caught, as they will creep between them in search of a hiding-place. Some people accomplish the same object by putting bits of rag at the foot of the tree on the ground. By some or all of these means I believe their numbers could be greatly reduced, if there was a combined effort by orchardists to do it."

Mr. Charles Arnold says of this pest:—

"The Codling Worm is very destructive. Bands of paper or cotton batting or old cloth, tied around the trunks of the trees, and untied every week or so, are the best means of catching the larvæ and preventing the moths. Generally we take several thicknesses of paper, so as to give them a good hiding place. If that remedy was generally adopted by fruit growers, I am satisfied the moth could be kept under. It is a blessing for us that some years we have no apples, as then we are able to get rid of the moth. The bandages I have spoken of would need to be examined every week during the summer. I know of no other remedy for them, though I have heard of a great many."

Mr. Allan, of Goderich, who complains that the Codling Worm is becoming more destructive every year, mentions that some of the orchardists in his district, in addition to the rag or paper bandage remedy, light fires under the trees at night, which attract the moths to their destruction.—*Report of the Ontario Agricultural Commission.*

A collector of antique furniture was hunting through the auction shops the other day for a "signal service bureau."

RASPBERRIES AND BLACKBERRIES.

They do best on a good soil with a dry bottom; and on a deep, rather rich soil, they will be less affected by drouth than on a shallow soil. Both gravelly and clayey loams answer well under good management. The distance may vary with garden or with field culture, the former being nearer. Raspberries may be set in rows five feet apart, and two or three feet in the row; blackberries one-third further. The distance may be greater on quite rich than on poor soils. A strong grower, like the Rochelle blackberry, should have

CATERPILLAR OF CECROPIA EMPEROR MOTH.

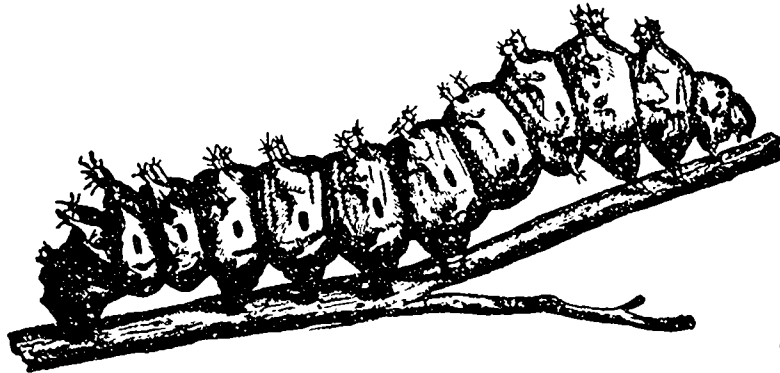


Fig. 43

COCOON OF CECROPIA.



Fig. 44.

THE CODLING WORM.

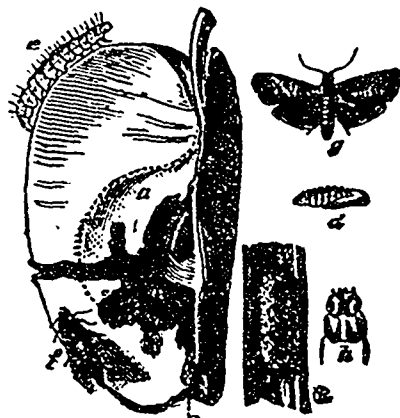


Fig. 45.

In Fig. 45, *f* and *g* represent the moth with the wings closed and expanded, *c* the larva, and *d* the chrysalis.

more room than a more moderate grower, as the Snyder. If blackberries are well pinched back they will occupy much less space than if allowed a straggling growth. The required care consists in good, clean culture, hoeing off the suckers as soon as they appear, and pinching back when two or three feet high. Good varieties of the raspberry are Cuthbert, Turner, and Philadelphia, among hardy red sorts; and Gregg, Doolittle, and Davison's Thornless, among black-caps.

A SANDY GARDEN.

MR. EDITOR,—I have a vegetable garden, soil of dry sand. What is the best way to improve it so that it may give a fair yield? At present it is too dry and light to pay working. Everything burns up in it. An answer will oblige.

Perth, Sept. 4th, 1882.

J. M. W.

[Add clay if it can be got, and plenty of rich, fine, well-rotted manure.—Ed. R. C.]

LOWLAND ORCHARDS.

A reader quotes a statement in a western journal, and asks us to account for the occurrence mentioned. An orchard was planted on inclined or sloping ground. The trees on the lower portion were much injured by last winter and some of them killed. Higher up they were less injured, and at the top scarcely at all. Another orchard on the top of a hill was not injured at all. The inquiry is, what caused this difference? We have explained it on former occasions. The cold air on still, sharp nights settles down into low places, so that a thermometer will show several degrees difference between low valleys on still nights and the hills above. The valleys are sheltered from wind, and the still air sinks lower by radiation. A third cause is in the soil. The rich, mucky soil of valleys radiates heat more freely than compact soil, and becomes colder. A fourth reason, and not the least, is the more rank, succulent and long-continued growth of trees in rich valleys, so that they do not ripen the wood in time to become compact and hardy. We have seen the vines in a vineyard which was partly hard upland and partly low and rich land. The vines grew too rapidly and long on the low portions, and were injured or killed; on the upland, the wood ripened perfectly and they escaped.

GATHERING HERBS.

Herbs for winter use should be gathered when the plants are in flower; just as the flowers begin to fade is considered to be the best time to harvest them. The herb garden was formerly of greater domestic importance than it is in these days of patent medicines, but whether this change is an advantage to health may well be questioned. To dry herbs, it is best to tie them in small bundles and hang them up in an airy shed.—*Washington Tribune.*

In saving flower seeds for planting, always select the most perfectly developed. Throw away all poor ones. It is only good seed that produces good results.

TEACH your children not to annoy or maltreat the toad. Try rather to coax him to your garden. He will destroy many insects.

By striking your verbenas early in autumn, and putting them first into small pots and then into larger as soon as the roots have reached the sides, and keeping them in vigorous growth, pinching back the leading shoots and nipping off every flower head, the verbenas may be made to bloom in the window all winter.

W. H. S. CLEVELAND, in his excellent paper on Native Forests, says: "I have seen during the past winter a great many very large, fine trees planted on the best avenue in Chicago, at a cost of certainly not less than fifty dollars each, from the trunks and large limbs of which all the rough bark had been carefully scraped, leaving only a thin, smooth covering over the inner tissues. The effect of thus suddenly admitting the sun and wind upon them is the same as exposing any portion of the human skin heretofore clothed."