### The Apple Tree Pruner.

FROM the Official Report of the Meeting and Proceedings of the Upper Canada Fruit Growers' Association, published elsewhere, our readers will perceive that Mr. Charles Arnold, of Paris, exhibited a portion of an apple tree branch that had been cut off by some insect. By cutting into the branch a little way, the depredator was discovered to be a long, cylindrical grub, snugly ensconced in his burrow, from which he had evidently no expectation of emerging into day-light till ready to issue forth as a perfect beetle. The rude disturbance of his seclusion by the investigator's knife appears to have had a serious effect upon his health and spirits, for when he reached our hands he was dead, and so much shrivelled as to be hardly recognizable.

From the appearance of the burrow, however, as well as of the grub itself, we have very little doubt that it is a specimen of the Pruner Stag-beetle (Stenocerus putator, Peck, or properly S. villosus, Fabr, the latter being its earliest specific name), which is well known from its attacks upon oak trees. Dr. Fitch, in his "Third Report on the Noxious Insects of New York," mentions that the insect sometimes, though rarely, attacks apple trees. The specimen before us is probably, then, the same species as the one he refers to, or one closely allied to it. To decide this point, we should require living specimens of the grub, in order to keep them till they are developed into the perfect insect. Should Mr. Arhold discover any more of his apple trees affected in the same way, we beg of him to favour us with as many specimens of the branches as he can conveniently send, and any particulars that he has observed respecting the time of appearance, size of the branches, etc.



The Oak Pruner, with which we believe the insect before us to be identical, is a little over half an inch long when full grown, and about a seventh of an inch broad across the neck, which is its thickest part, and from whence it tapers gradually backwards. The head, is small and black, the neck and remaining rings of the body yellowish white, with some slight blackish markings. The rings or segments are twelve in number, the last two, however, are frequently concealed in the one before them, the insect apparently assisting its progression by drawing them in and out. It has six very minute legs, attached to a somewhat active pupa in the spring of the year, and completes its final transformation into a beetle in the month of June. It is then a cylindrical beetle of a dull black colour with brownish wing-cases; the antennes are in the male longer than the body, and equal to it in the female; the whole body is covered with short close gray hairs, which, from being denser in some places, form spots on the thorax and elytra; its total length varies from half an inch to three-fifths.

The peculiar habits and instincts of this insect render it one of the most curious and interesting that we have. We shall endeavour to describe them as briefly as we can :- The parent beetle, with a view to provide soft and easily masticated food for the tender jaws of the infant grub, lays its eggs in the green fresh growth of a twig proceeding from a moderate sized limb. The young worm immediately

upon its exit from the egg, burrows down into he centre of the twig, and consum s ill the sofe pupy matter of which it is composed; by the tum it reaches the main branch it has become sufficiently matured to be able to feed up in the strong mass of the hard wood, and accordingly makes its way i to the branch, leaving the hollowed twig to gradually wither and drop off. It now eats its way downwards a short distance (half an inch in the specimen before is) through the middle of the branch, and proceeds de-liberately to cut off its connection with the tree and make its way to the carth by the shorlest possible route. This, however, is rather a delicate operation and requires the exertion of all the insect's wonderfu! instinctive skill; for were it to gnaw too much of he wood away, the branch would break during the p o ceeding, and probably crush the workman to dea h. But with admirable forethought and precision it leaves the bark and just enough woody fibres untouched to sustain the branch until it has time to make good to retreat into its burrow, the opening of which it caleretreat into its burrow, the opening or which is con-fully stops up with gnawed fragments of wood. In the as Dr. Fitch relates—" the most astonishing part of this feat remains to be noticed. The limb which he cats off is sometimes only a foot in length, and is consequently quite light; sometimes ten feet log, ladar with leaves and way heavy. A map by constant of the source heavy. consequently quite light; sometimes ten receiver, in laden with leaves and very heavy. A man by c: e-fully inspecting the length of the limb, the size of the branches, and the amount of the foliage grow ig upon them, could judge how far it should be seve to insure its being afterwards broken by the winks. But this worm is imprisoned in a dark cell only an inch or two long, in the interior of the limb. How is it possible for this creature, therefore, to know the weight and length of the limb, and how far it should be cut asunder? A man. moreover, on cutting a number of limbs of different lengths, so far that they will be broken by the winds, will find that he has often miscalculated, and that several of the limbs, do not break off as he designed they should. This lit le worm, however, never makes a mistake of this kind. If the limb be short, it severs all the woody fibres leaving it hanging only by the bark. If it be longer, a few of the woody fibres on its upper side are left uncut in addition to the bark. If it be very long and heavy, not more than three-fourths of the wood will be severed. With such consummate skill does this philosophical little carpenter vary his proceed ings to meet the circumstances of his situation in each particular case!"

Having performed this operation successfully, and closed its hole, that the jarring of the branch when it falls to the ground may not shake it out, the grub retreats to where it first entered the limb, and goes on eating up through the heart for about six inches or a foot; and this it does both before and after the branch reaches the ground The object of this amputating performance it is difficult for us to understand fully, but we may imagine that it is for two purposes first, as regards the insect itself, that it may the more effectually escape the attacks of woodpeckers and other foes, and be less exposed to the winter's frosts; and secondly, that the tree may receive the benefit of a pruning of its growth, which in its natural state might be two exuberant. Thus wonderful and varied are the checks and counter-checks that the Almighty imposes upon his works; to each one there is laid down the law, "thus far shalt thou go, and no farther" 1

The obvious remedy for these singular insects when they attack fruit or other valuable trees is (o gather up the tallen limbs, and burn them, before the grub has time to complete his transformation into the perfect state.

#### Pear and Cherry-tree Slugs,

A "READER," writing from Adjala, C. W., complained that his pear and cherry-trees are almost entirely destroyed by slugs, and desires some information respect ing the best mode of putting an end to their ravages. If he will look up our last volume, that for 1865, and turn to page 262, in the number for September the 1st, he will there find a full description of these little pests, as well as the best method of destroying them. In case, however that he should not have the back numbers convenient for reference, we transcribe the remedies we there mentioned. "Ashes or quick-line sifted on the trees by means of a sizve fastened to the end of a pole, has been much rescamended. The best remedy probably for this and of ter similar peaks which are too minute to be picked off by han'l is called "Haggerston's mixture"; it is composed of two pounds of whale-oil soap dissolved in fillion gallons of water, and is applied by means of a large syringe or hydropult to the affected trees."

## The Apiary.

# Management of the Apiary for August.

#### BY J. H. THOMAS.

Bur little can be done this month unless moveable comb hives are used, then cards of comb from strong stocks may be exchanged with weak stocks. In this way stocks may be equalized both as to bees and honey. Old stocks that cast three and four swarms, often throw off all their queens, and there being no eggs in the hive at this time, the bees are unable to reproduce another. They should be examined and if found to be queenless, should be given a queen or queen cell, if they can be obtained, if not worker comb should be given them at once, so that a queen may be developed, before all the drones are destroyed.

Second swarms are also liable to become queenless by the young queens being destroyed when out on their bridal tour. If the bees about the lighting boards appear indolent and irritable, such stocks should be examined and provided for as mentioned above. An unceasing warfare should be continued through this month with millers and miller-grubs, none should be allowed to escape. Honey boxes should be removed if intended for market, before the bees commence to deposit Buckwheat honey; for Buckwheat honey is dark and unpalatable.

In the sections of the country where Buckwheat is grown, strong stocks may fill up and swarm. Those who are anxious to increase their bees and are using moveable comb hives may give such a swarm a card or two from some strong stock and assist it to make enough honey to winter safely.



IF a man engages in bee-keeping with the idea that he shall make a fortune, he will simply be disappointed. Tens of thousands are disappointed yearly. They are led to investments in bees, because some one swarm or more has realized great profits. These are accidents, just as large pumkins, and extra crops, in favourable seasons are. We must not calculate on general principles from mere accidents, for these are the exceptions.

Bee-keeping is profitable to a certain extent, that extent depending, like other things, much upon the manner in which it is conducted. According to the statistics, bees are worth about four dollars per swarm, that is they realize a profit making them worth that. This is the experience of the world, as bee keeping generally runs. Some cases are more successful. Each one, in engaging in bee-keeping, intends to be this successful case—yet he turns out with the ordinary profit. He stands just as much chance to lose as to make. The probability is, that with the usual care he will have the usual moderate profits. Were it not so, and bee-keeping were the profi able thing these enthusiasts imagine, everybody would engage in the business. Be not deceived ; bee-keeping is moderately profitable when fairly reated. So is hen-keeping. So is anything which people magnify to great heights—to be let down after trying. With moderate expectations and proper reatment, any of the departments of life can be made

Wo will here mention one of the principal things in bee-keeping. Never engage in bees—at least largely—in a neighbourhood where they are already largely kept, as the pasture, so to speak, is cropped short. There is but a certain quantity of honey in each locality Exhaust this, which is done by a large stock of bees, and there will be little to get. A new country is generally favourable to bees; so in any country where there is much bloom and few bees. In a locality crowded with bees, keep at most but a few swarms, as these will exhaust the honey in their immediate neigbourhood. You will get the same louey that you would if you had a larger number of swarms, in which case the large number of swarms, i mong which the honey is divided, would not pay jucome on the amount invested. The fields are a pasture for bees as well as gatile, and they must not be overstocked.— Rurgi World.