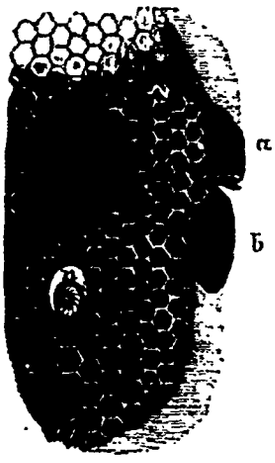
back and sides they are considerably longer, curved and flexible, approaching in character more nearly to ordinary hair; the hind portions of the body and thighs are also pretty thickly set with long, strong and sharp spines; and the tail is also furnished with similar means of defence. By a sudden motion of the tail it is capable of striking a pretty sharp blow, and never fails to leave some of the spines, which are readily detached, adhering to the mouth or skin of its assailant. The colour of these spines is mostly white, though some are dark, and some, otherwise white, are tipped with black for a short distance from the point. When examined by a magnifying glass, these quills are found to be covered with barbed excrescences pointing towards the base. This peculiarity of structure renders them peculiarly irritating, and even dangerous to an enemy; for once having pierced the skin, every movement causes them to penetrate further, so that unless artificially extracted they may work their way till, in time, they reach and penetrate a vital part, and then at length prove fatal. Accordingly, the Indians very carefully extract all the spines from the skin, lips, and mouths of their dogs, if they have had occasion to employ them in attacking these creatures, whom they capture for the sake of their flesh, which they eat, and their spines, with which, after they have coloured them, they ornament their mocassins and other parts of their dress. They readily dispatch them, as soon as they are within reach, by a blow on the nose.

This animal is slow in its movements, and mild and inoffensive in its disposition. It makes its abode in the hollows of trees, and feeds principally on the bark of trees, to which it is often thus very destructive. The bark of the hemlock (*Abies Canadensis*) and the bass (*Tilia Americana*) seems to furnish its favourite food. It brings forth its young, two at a birth, in the spring of the year. It is easily captured and subdued, showing no other symptoms of anger or irritation than the utterance of a plaintive cry or whine. Its sole means of defence consist in the spines of its skin, which are, however, effectual to protect it from all enemies except man. When attacked, it contracts its skin by appropriate muscles for the purpose, and causes the spines to become erect. These being very sharp, especially the short ones, and easily detached, will sometimes fall out when struck against an object, and will remain adherent, as has been already stated in the skin of an assailant. There is no other foundation than this for the fabulous report that the porcupine, when irritated, has the power of darting its quills against its enemy and wounding him from a distance. There is a native of Great Britain, with which "old countrymen" will be familiar, that resembles the porcupine in the single circumstance of being provided with a coat of spines; in all other respects the animal is very different from that which we have been considering, and belongs altogether to another order of mammalia. The common English hedge-hog, as every one knows, is completely enveloped, with the exception of the under part of its body, and its face, in a coat of spines, which like the porcupine it can erect, and being able also, like the armadillo, to roll itself up into a ball, and thus to present to the attack of an enemy a round mass of spines, is a match for any assailant that has not the wit to meet its defensive tactics by cunning or intelligence. The hedge-hog is not a gnawing animal, but lives on insects, snails, and other molluscs, and is on this account said to be very useful in a garden. It is easily tamed, and not unfrequently becomes quite a pet in a family.

The Apiary.

The Queen Bee.

Without a correct knowledge of the nature and habits of the queen bee, it is quite impossible that any bee-keeper can properly manage his bees, as everything depends upon the queen. If she be barren and unfruitful, the stock soon dwindles away; if she perish, the stock soon perishes also; if she is not prolific, the stock does not increase. Hence every colony or stock of bees should have a healthy, vigorous and prolific queen. The process of developing a queen bee from the egg is quite different from that of the worker or drone, the time occupied being much less. The process of development is wholly carried on by the worker bees, and in this country generally commences about the last of May or the first of June, and occupies 16 days, reckoning from the day of laying the egg. The egg that produces the queen is the same that, under a different treatment, would produce the worker. The cell in which the queen is reared is also different from that of the worker cells, which may be clearly



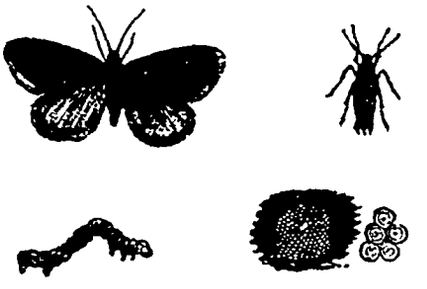
seen by the accompanying cut. The eggs and the larvæ of the workers in different stages appear in the small cells, while the cell at N is a queen cell just commenced, with the queen larva appearing at the bottom. B is a perfect queen cell, capped over, containing a full-grown queen. A is a cell from which a queen has emerged. Sometimes the queen cell is built around the egg, and sometimes the workers carry the egg and put it in the queen cell; but the queen never deposits an egg in the cell that is to form the nursery of her rival. As soon as the egg is hatched, which is generally on the third day after it is laid, the worker bees commence to feed the larva a peculiar kind of food known as "royal jelly." It is of a cream-like consistence, of a sweetish taste, slightly acid, differing in almost every respect from the food given to the worker bee, which is composed of pollen, honey, and water, while the constituent parts of royal jelly are not known. The workers deposit a large amount of this food in the cell, until the queen larva fairly floats in the jelly-like mass. At the end of eight days the cell is capped over, as seen at B. About this time the larva commences to spin its cocoon, which occupies one day. It may be well to remark here that the cocoon is a silken-like substance formed around the larva, and left on the inside of the cell when the bee escapes. After the cocoon is spun the larva remains about three days in complete repose; then the transformation takes place, in which four or five days are passed, when the perfect state of the queen is attained. On the fifteenth or sixteenth day, the queen commences to gnaw herself out after the manner seen at A, leaving a cap or lid hanging by one side, which sometimes closes up when the queen emerges, and in some cases is fastened on again by the workers, leaving the cell in its perfect state; more frequently, however, the cap is broken off, in which state the cell remains for several days, when it is cut down to about the length of the cell at N, and is never used again for any purpose whatever. The queen, on emerging from the cell, seeks her own food like any other bee, and generally no very particular attention is paid to her until after her impregnation.

Entomology.

The Canker Worm.

A correspondent who lives in the neighbourhood of Grimsby, and who devotes much time and attention to the interesting study of Entomology, has lately sent us two pairs of moths which he correctly considered to be specimens of the perfect state of that very destructive insect, the Canker Worm, whose ravages on apple and other trees are so well known in the United States. He states that he first noticed them late in November, but that he has found the females at different times during the winter, under the bark of trees; he further adds that if he is correct in his identification of the insect, "we shall have to look after our orchards in this neighbourhood, as there is scarcely a forest tree but what I could find them on."

Though so common in the United States, and so very destructive there, this is the first time, so far as we are aware, that this insect has been found in Canada. It will be useful, then, to give our readers some account of the appearance, habits, and mode of warding off the attacks of this injurious insect. It belongs to the family of moths called Geometers, or "measuring-worms," or "span-worms," from the mode of locomotion employed by the caterpillars in consequence of the absence of legs under the middle portion of their bodies. They have three pairs of legs near the head, and two pairs at the other extremity, and when walking they draw up the hind legs close to the fore ones, doubling up the body in the form of an inverted letter Ω, then they stretch out the fore legs as far as possible, draw the hind ones up to them again, and so on, looking just as if they were spanning or measuring the surface they are on. The moths from which they are produced are called the *Anisopteryx vernata*, Peck; the former name meaning "unequal-wing," because the sexes differ so much in the dimensions of their wings, —in this case *the female has no wings at all*, and would never be taken for a moth by one unacquainted with Entomology; the latter name means "spring," because the moth is most commonly seen in the spring of the year. The *male* moth has very delicate silky wings, broad in proportion to their length, which overlap each other when the insect is at rest; the fore pair are ash-coloured, with a whitish spot near the tip on the front margin, and two indistinct zig-zag whitish bands across them, which are sometimes wanting; the hind pair are paler, and have a blackish dot near the middle; all the wings have rather long, pale fringes; they expand about an inch and a quarter. The wingless *female* is ash-coloured above and greyish beneath; of an oblong-oval form, tapering to a point behind. The accompanying wood-cut, taken from Harris' *Injurious Insects*, will afford an idea of the appearance of the moths, their eggs, and the caterpillar that is produced from them.



Late in the autumn, after the first hard frosts are over, and mild genial days come on, these moths issue from their pupa cases in the ground, and continue to come forth, whenever the weather is mild, all through the winter, appearing in the greatest numbers early in the spring. The sluggish females at once crawl up the trunk of the nearest tree, where they are soon after joined by the more active flying males; after pairing has taken place, the female proceeds to the branches of the tree, where she lays her eggs, placing them in clusters of from sixty to upwards of a hundred. From these the infant caterpillars hatch out as soon as the young leaves of the tree begin to expand, and afford them a supply of suitable food. At first, from their small size, they attract but little notice, but during the latter part of their larval existence they grow rapidly, and eat so voraciously as to divest the tree of all appearance of greenness. "When very young" (according to Harris), "they have two minute warts on the top of the last ring, and they are then generally of a blackish or dusky-brown colour, with a yellowish stripe on each side of the body; there are two whitish bands