

for its proper maintenance, the highest scientific knowledge that can be obtained in the country, and the closest observation that can be brought to bear upon the objects of its investigation.

In order to maintain the interest and efficiency of the Entomological department, we propose to take up, in successive numbers, the various insect enemies of the farmer, orchardist, and gardener; to describe and illustrate the various insect pests of the field, the garden, the orchard, the forest, the conservatory, and those too that effect our domestic animals and that are a plague to the careful house-wife. We shall endeavor to render them easy of identification by any intelligent reader, making free use of the artist's pencil to render clearer the efforts of our pen. We shall aim at giving the most reliable methods of dealing with insect foes, both by the use of artificial remedies, and by the encouragement of natural checks, and we hope, with the co-operation of our readers, to disseminate throughout the length and breadth of our land, true scientific knowledge of this portion of the animal kingdom.

Roseleaf-Cutter Bee.

(*Megachile centuncularis*.)

During the summer, we noticed bees continually under our outside window-blinds, with pieces of leaves in their mouth. They would always ascend the line which drew up the shades, and then pass through the hole where the pulleys were placed. Having disappeared, they would remain for some moments out of sight, descending to the garden in the same manner. If sometimes a bee considered it knew its way well enough without the cord, and ventured to find the entrance, it soon came down from the top of the window and began the good orthodox ascent up the line and through the pulley-holes. The wood-work of the blinds was too closely fitted for us ever to get a peep at what was going on. But to-day the summer being over, we had our shades down, and in the groove along where the cords ran at the top part of the window we saw the Roseleaf-cutter Bees' summer occupation. Just sitting and rolled up like cigars, we found several inches of these ingenious nests, about half an inch square. I have with a penknife gently opened one, and soaked another in water. Then I found as Réaumur describes, that the bees had taken advantage of the natural curling of the leaf on drying, and had not needed any gluten to fix the cut pieces. Each separate nest had one rounded end, which fitted into the convexity of the other; so that on first seeing the strange green roll I thought each join denoted a day's work. Having broken off one compartment, I proceeded to lift off the outer coverings—there were nineteen pieces; then I lifted off the rounded end which closed up the mouth—there were twenty of these exact, neat rounds, beautifully moulded into shape. Within this warm nest was a quantity of soft pollen and honey; then a hard case, in one instance, with burnished inner walls, in which lay a white soft maggot or grub; in another this hard cell was wanting. There were in all twenty-four nests, the leaves still retaining their green. I have read that this bee generally digs in the ground to build its nest; here, just above the rose-bed over the window, we found our summer lost leaves. Have your readers met with buildings in similar localities? Can you also tell me if one bee would make more than one nest; and if the worker is the parent of this concealed white plump grub?—A. YOUNG, "in Science Gossip."

CARBOLIC SOAP FOR INSECTS.—A few days since, I tried an experiment with carbohc soap in killing insects upon green-house plants, particularly the green fly (Aphis), which, as everybody knows, is a great pest, and one not readily destroyed, except by fumigating with tobacco—not a very agreeable operation to perform upon parlor plants or in a conservatory attached to a dwelling. My first experiment with this soap was a decided success, operating upon two hundred roses just in bloom, and it was conducted as follows:—Into a pail of warm water I put a lump of soap the size of a small hen's egg. The soap was cut up into small pieces and the water agitated until it was all dissolved, forming a warm suds. The water should not be too hot, but if not above 120° or thereabout, it will do no harm. Into this suds each rosebush was plunged (holding the pot inverted in the hand) and kept there about half a minute. After plunging, the plants were set aside for a few minutes, then dipped in the same way into clean water, shaking them about thoroughly, washing the leaves, and then returned to their former place in the house. Whether it was the soap or warm water that killed the green fly I will not say, but there is one thing certain, they are all dead.—*Rural New Yorker*.

Apiary Department.

Shall I go into Bee Keeping?

We are vain enough to think that our former article on bee keeping, may have inclined not a few readers of it to entertain the idea of keeping bees. But there is one great and terrible hindrance which meets beginners at the very outset, and often effectually deters them from the contemplated undertaking,—it is the fear of being stung. Many own this, and others who are too proud to own it, are nevertheless influenced by it.

Now it is no mark of wisdom to make light of a bee-sting. It is no joke. A mosquito-bite, or if you can imagine it, fifty mosquito-bites in one, are as nothing to it. The bee not only inflicts a wound, but injects a poison. This poison is very subtle and virulent in its nature. It has a peculiarly potent effect on some people. A bee-sting has been known to cause death, when inflicted in a highly sensitive part of the body of a delicately-organized person.

Thus, much admitted, let a few considerations *per contra* be urged. In the first place, there is far less danger of being stung than most people imagine. The idea that every bee you hear buzzing around you, is intent on plunging its dagger into your quivering flesh, is preposterous. The ordinary buzz of a bee is its song of labor, an audible proof that it is intent on work, not on mischief. A bee rarely stings except as the result of injury or provocation of some sort. If interfered with in any way, and particularly if irritated, squeezed or crushed, it is pretty sure to sting. Like a Scotchman, the bee has for its insignia, a thistle, and for its motto, "Nemo me impune lacessit."

Secondly, there are simple precautions to be observed in all operations amongst bees, by which all danger of being stung, may be obviated. Ordinarily a quiet, self-possessed behaviour amongst bees ensures safety. All sudden movements are to be avoided. Bees are excessively nervous insects. They get excited in a moment. Gentleness must be practised *always*. If they raise a warning note of anger, or dart towards you threateningly,—the usual indications of a disposition to sting,—the best course is to stand perfectly still, bending the head forward to protect the eyes, as strange to say, bee-practice is the same as pugilistic, to *hit in the eye*. With the head bent forward, there is really very little of the face or body exposed to a straight forward attack, and such only bees make. It should be a fixed purpose *never to strike at a bee*. Only an experienced and cool bee-keeper can ever do that safely, and even such at times make a miss and get the worst of it. A perfectly self-possessed and skilled apiarian can sometimes get rid of immediate annoyance, by the sacrifice of a bee's life, but even this is not a practice to be commended. A bee struck at becomes infuriated, maddened,—and returns to the onslaught determined to "do and die." But we recommend all beginners to arm themselves with a veil and a pair of sheepskin gloves, when they have occasion to meddle with bees. The veil must be a close one, for these are prying little insects, and when they alight on a veil will crawl and crawl, hither and thither, and if there be an opening, are pretty sure to find it. A bee, however peaceably inclined, will sting when it finds itself in "a tight place." Those who keep apiarian supplies for sale have suitable veils, and as for gloves, there is nothing better than those used in harvest-time in handling grain infested with thistles.

Thirdly, and an apiarian science has discovered a short and easy method of taming or subduing bees. A few puffs of smoke from a bunch of burning rags, a pan of chips, or a bit of rotten wood, will usually quiet a colony of bees so that it can be handled with impunity. The explanation of this is, that the smoke excites a slight panic in the hives, so that the bees at once fill themselves with honey, and when gorged with honey they are disinclined to sting.

These considerations ought to suffice as an antidote against the fear of being stung. If they do, and the determination is formed to go into bee-keeping, this advice should be followed:

1. Do not rush in hot haste into this pursuit. Read in regard to it. Master the first principles of the before you get a hive of bees. Be content to begin in a small way, and take time to gain experience. One stock of bees is ordinarily enough to begin with.

2. Obtain if possible a colony of bees in a movable-frame hive. Bees have been kept profitably, and may be still, in straw or common box hives, but to attain the best results, a movable-frame hive is necessary; with this, there is access to the bees, and perfect control over them. With this, more may be learnt about bees in a single season's observation than by keeping them a dozen years in straw or box hives. Such a hive can easily be obtained from some of our Provincial aparians, such as Attwood, of Vanneck; Mitchell, of St. Mary's; Loebe, of Cobourg; Nicollo, of Lindsay, &c. A stock of common bees in such a hive will cost about ten dollars, inclusive of patent right.

3. Do not expect sudden and wonderful profits, nor be discouraged by reverses at first. There is no speculation in bee-keeping. Nevertheless, after some year's experience we firmly believe there are few directions in which a little time and money can be more judiciously expended. To be successful, however, will require diligence, care, energy and perseverance.

Facts Concerning Bees.

When the queen bee is forcibly taken away from the hive, says the *American Bee Journal*, the bees which are near her at the time do not appear sensible of her absence, and the labors of the hive are carried on as usual for a time. It is seldom before the lapse of an hour that the working bees begin to manifest any symptoms of uneasiness. They are then observed to quit the larvæ which they had been feeding, and to run about in great agitation to and fro; and on meeting with such of their companions as are not yet aware of the disaster which has befallen them, they communicate the intelligence by crossing their antennæ and striking lightly with them. The bees which receive the news become in their turn agitated, and spread the alarm further. All the inhabitants now rush forward, eagerly seeking their lost queen. But finding search useless, they appear to become resigned to their misfortune, the tumult subsides, and if there are worker eggs or young larvæ in the cells, preparations are made to supply the loss by raising a new queen, and the usual labors of the hive are resumed.

For feeding bees: Take at the rate of five pounds of refined or white sugar, two gallons of soft water, one tablespoonful of salt, ten grains of cream of tartar; put all together, bring to a boil, skim, and, when cold, add eight ounces pulverized slippery elm bark, or fine oatmeal, stirring well—then feed in the hive. During the summer, use but four pounds of sugar.

Italian bees gather much larger stores of honey than the black bees. Dzierzon, the great German apiarian, after many years' experience, says that the profits of his apiary have been doubled since their introduction. They are also much more peaceable than the black bees.

Bees in England.

An apiarian writes to the *Gardener's Chronicle*, Eng., of the bee season of the last year, thus:

"Taking a retrospective view, the past bee season has been the worst that I have experienced for many years. Although the winter was so mild, my bees suffered very much from damp, and their numbers had decreased considerably by the new year. In this neighborhood we depend a good deal on the flowers of the horse chestnut for an early start; but this spring the chestnut trees were so injured by the cold, piercing winds, that many of the blooms dropped off before expanding, and the result was, I had to begin feeding at a time when swarms are usually expected. I looked forward with some anxiety to the lime trees; but, they, too, had evidently felt the effects of the cold spring, as their flowering season was of short duration. Every beekeeper reckons on a few losses during the winter and spring months; but my list this year is a long way above the average."

His idea of a young hive is as follows:

"After a run of nearly forty years I have settled down with a wooden double-sided hive, verging on the old double glazing principle. The sides or walls are made of pine, five-eighths inch stuff, with a space quarter of an inch between, all round. The corners are not dovetailed, but lapped, as a carpenter would say. All the joints are bedded in white lead, so that the space or vacuum may be as nearly air-tight as possible; much depends on this, as well as on the size of the vacuum. If not perfectly close it is useless, and if too large it is equally so. All that is required is just enough for the warmth of the bees in winter to rarify. The whole hive is so simply and easily made, that it comes within the reach of everybody."