

board of the hive to pass through, and through this was the exit for the bees. So you see there was not the least chance for the bees to gain access to my room, and I could enjoy watching them without fear of being disturbed by them.

They never showed any indication of fear either. In fact, did not appear conscious of being observed.

Every recollection of them is so charming that I scarce know where to begin, or what to select for description. There was but one frame of comb in my hive, so it only housed a few thousand bees. There was one queen, perhaps a score of drones, and the rest were workers. When my nephew brought them to me and had set up the hive, I asked him to point out the queen to me, but being in haste he merely told me that I would know her as soon as I saw her, without any showing. This seemed to me very doubtful, but it proved to be true. She was a little larger than the workers and more slender than the drones, and had an entirely different air. It seems absurd to speak of stateliness in the movements of such a little thing, and yet it perfectly describes her carriage when she was walking about inspecting her field of operations. Her sole duty and occupation is laying eggs. And you will say that this is quite enough to expect of her when you realize that an active queen deposits probably a hundred thousand in a season, and each one of these is in a cell by itself. She carefully inspects a cell, and when it is empty and in satisfactory order, she turns and deposits an egg in the far end of it, and at once passes on to the next. Several bees attend upon her constantly, and every few minutes feed her. At frequent intervals she becomes apparently quite exhausted by her efforts, and it is very amusing to see the lackadaisical manner in which she indicates her fatigue, lifting first one foot and then another and letting them fall as though limp and helpless. Then ten or a dozen of the workers gather about her, as thick as they can stand, all heading towards her, and diligently stroke her legs and back as though they were giving her a regular massage. This they continue until she is sufficiently refreshed, which she shows by suddenly walking off, the attendants backing out of her way with all possible speed.

Of course, in the hive there is no chance for flying, and they all walk about to do their work, and it is curious to see how they walk over or under instead of around one another, seemingly too intent upon their destination to notice obstructions in the route.

#### How They Make Honey.

When they come in loaded with pollen they have the most important and business-like air imaginable, hastening to some suitable cell and vigorously

shaking off their loads. I had never realized before how many different colored pollens there are; every shade of yellow from the palest straw to deep orange, different shades of red, lavender, etc. This they use, I think, in making bee bread. The honey is deposited in separate cells, but is mixed with the pollen before feeding to the larvae.

The nectar gathered from the flowers is carried in an interior sac where it is transformed into honey, and by doubling the tongue so it forms a sort of trough they run the honey into the cells. This generally is too thin to be immediately sealed up, so they evaporate it by fanning with their wings. To do this four bees would stand together and make the funniest little whirligig movements, like little merry-go-rounds, their wings moving so rapidly that they were almost invisible.

When the hive gets too hot and needs ventilating, the bees get in line and fan violently till the temperature becomes satisfactory.

Our bees were Italians, a sort of brown color, with yellow bands. When in the hive they looked comparatively dull and dark, but when flying in the sun seemed as clear as amber. They look very pretty when flying for the first time; which is four or five days after they are hatched. It would seem to be announced through the hive, as there would be a general stir and appearance of excitement, messengers running to and fro, and then a rush for the exit. When outside they circle around a few minutes, all headed towards the hive, apparently getting their bearings and enjoying using their wings, but not venturing much of a flight. After two or three such experiments they go out in search of flowers, and then, it is said, they often go several miles.

We, you know, are on the third floor of a down-town apartment house, and I fancy some of our neighbors thought us very inconsiderate of the comfort or safety of others, when they heard we were to have bees in such a locality. But no one was disturbed by them, for, starting from such a height they remained up in the air until approaching flowers.

This I cannot speak of from observation, but it is truly wonderful how much of their indoor life can be seen, and how fascinating it all is.

#### The Young Bees.

My enthusiasm is almost beyond the power of expression when I think of the pleasure such a hive of bees affords an invalid. There is no noise or commotion, and yet such a variety of interest. You can see the tiny egg deposited, a little white thing, resembling in size and shape a very small grain of rice, stuck in the bottom of a cell. In three

or four days the larva is hatched, and being bountifully fed by the young bees, who are the nurses, it grows very rapidly and soon nearly fills the cell. The bees add a supply of food and cap the cell with wax. In due time, about three weeks after the egg was laid, the full grown bee emerges. When the outside bees observe that the nymph is gnawing her way out, they each as they pass by give a nip or two at the opening which thus soon becomes large enough for her to pass through. She steps out and looks about in a half dazed way for a moment, then carefully removes the veil from her head, and deftly makes her toilet.

She then reminds me of a little Quaker maiden, being light colored and fragile in aspect (like a plant grown in the dark) with her dainty wings, which have never yet been spread, folded so demurely by her sides. You know the bees require large wings for their long flights, but as they often have to work in a cell, they have a pair of wings on each side which they hook together and spread out as one when flying, but when unhooked slip one under the other so they take up little room as they go into the cell. Of course we could not see these hooks except with the aid of a microscope. But we could, with the naked eye, see their dear little tongues! Doesn't that seem almost incredible? There were openings for ventilation in the top and ends of the hive, which were covered with wire netting, and if a lump of moist sugar or a string wet with honey were held close to one of them, the bees would be at once attracted and dart forth their tiny red tongues, which I should think maybe an eighth of an inch in length and as large as a fine sewing needle.

It is because you have so wide a circle of acquaintances that I am sure you must know many persons to whom such a family of visitors would be a delight, that I have attempted such a lengthy description of what makes an ideal pastime for an invalid; is invaluable in a nursery to amuse and instruct the little ones; and would be a perpetual delight in a home for incurables or for convalescents.

Besides all the work which the bees do in bringing up their large families, storing up their own winter supplies and bringing in an abundance of honey for our consumption, pollenating the fruit trees, and many other things, they find time to play most of the games which active boys enjoy. You fancy I am drawing on my imagination now, but a few hours watching would convince you to the contrary.

Hoping that you and many of your friends will enjoy such hives another summer, I am,

Sincerely yours,

EMMA MAYHEW.