

is more difficult to deal with. The plan of injecting about a teaspoonful of bisulphide of carbon underneath each plant, taking care to avoid its direct contact with the roots as much as possible, has been recommended. After applying the liquid, press the soil about the plant to prevent the escape of the fumes.

## APIARY.

### An Amateur Bee-culturist.

By Mrs. Anna L. Jack.

Living alone on a small farm of a few rocky acres, a simple living was made by pasturing cattle for neighbors, raising eggs and chickens for the storekeeper, and half an acre of small fruits, that taxed all my energies to cultivate and market. An orphan niece, "Amanda," stayed with me, and one day in early June as I was busy crumbling some johnnycake to feed the chicks, a buzzing noise caused me to look up, and I saw a swarm of bees settle on a branch of the lilac bush by the kitchen door. As no one near by kept bees, and they were very quiet, as if from a long flight, I was anxious to secure them, for they seemed to open a new way for money-making to meet our expenses.

My eyes chanced to rest upon a half-barrel that had come to me from the store full of grain for the poultry; it was clean inside and out, and I took it into the shed and tried to prepare it for a home for the wanderers. I had seen the work done with rough boxes at places where I had visited years before, so with nervous haste I bored holes in the sides of the barrel and cut sticks half an inch in diameter, so placed as to cross each other through the center, to help support the future comb. Then a hole about an inch in diameter was made in what I called the front, half way to the top, to make an easy entrance for the bees when heavy laden. It was a very crude performance, but answered the purpose, for I cut off the lilac branch and placed the small barrel over it. The bees buzzed and murmured, but did not desert me, nor give one discouraging sting, and at night we carried them to a stump set under an apple tree.

That was the beginning of my interest in bees, and the way I proved that two lone women can manage them, for they brought good luck with them, and not only added to our pocket-money, but gave a zest and interest to the summer days. We studied the way of the bee in its daily life, and its method of working, and took a pleasure in welcoming the various plant foods that were sought for by our winged helpers. The hepatica and bloodroot were our allies, in furnishing nectar, and the gay blooms of the dandelion were tolerated because valuable for this purpose. If the hives came out weak in spring, we knew they would find food in the maple blossoms; and the basswood was a mine of wealth. The barberry bush was thronged with bees in search of nectar, and the flowering currant has wonderful attraction at the season of blossoming, yielding a very peculiar aromatic sweet. We began to cultivate a patch of white clover in a little pasture, and sowed seed of alsike that furnished food all through July and August. After cutting and curing there was often a second bloom, that was valuable later in the season. Mignonette is profuse in nectar, except in wet weather, and sage, horse mint and catnip furnish white honey and remain a long while in bloom during the dearth of August, when bee pasturage is bare. The farmers do not like the yellow glow of mustard among their grain, but we knew that it furnished the very best repast for our bees till buckwheat came into flower, giving a darkened color and peculiar flavor. Motherwort and milkweed will be found crowded with bees, and, lastly, along the pasture fences the golden-rod and asters help our nectar-loving workers.

But we found that though the food was plentiful, we were ignorant of the ways of the bees, and so studied their habits and read up the articles in our farm journals on the subject. But it was a miracle too complex to be understood. Why they left their homes after all their labor, the mysterious selection of a queen, and the wonderful method by which they build their cell, was a never-ceasing surprise.

At first we sold only strained honey from the barrel and boxes, and found that our outer cellar was a good, dry, cool winter home for the hives. But one winter I procured a book that gave me courage and information, and an interest never before felt. It was written as far back as 1789, by Francois Huber, in the form of letters to a friend. He was a native of Geneva, and became blind in early youth, afterwards devoting all his time to the study of bees, amid many trials and disadvantages. The story touched my heart, and excited my admiration, for through it my courage was strengthened, and I learned many things about my helpers never before thought of. Then came knowledge of later students, who could teach us to take the honey without destruction of the colonies, and the making of artificial wax to save time and trouble. I learned too of the honey extractor, that can withdraw the honey by centrifugal force, without breaking the comb, and so found that the methods had changed since the primitive plan that I had seen in my younger days on the old farm in Ontario.

Into the old boxes the bee moth found its way, but we discovered that the best cure was to keep the hives strong, and that it was the feeble colonies that were infested; also that it is the weaker hives that are invaded by robber bees. No one could imagine, without

making a study of the facts, that there are so many enemies to this useful insect; but they are beset by dangers by night and by day, and whether at home or abroad.

Practically speaking, it is possible to make bee-keeping pay, but a great deal depends upon the health of the swarms, the food, and how they come out of their winter quarters.

A strong swarm may give twenty dollars' worth of honey in sections—a weak one not one-fourth of that amount. There is profit and loss, as in all other work, but a woman who becomes interested in the study and has no fear of results can make a hundred dollars from half a dozen hives.

But one section of country cannot answer for another; in some places honey may be a scarce commodity, and plentiful in others. In the nearest market town, when this is written, comb honey brings 15c. per pound, and strained honey 10c.; a fine grade of clover honey sometimes brings a little higher price.

In starting beekeeping, the purchase of the hives is the principal expense, and they cost, on an average in spring, from three to four dollars each. A strong hive will produce two or three swarms, and it is not long before they repay good interest on the outlay.

This article is not a treatise on the improved methods of apiculture, but it aims rather to show women that there is a plan by which they can add to their pocket-money and yet not interfere with other duties. The outdoor air and healthful exercise, the thought and skill necessary, and the pleasant prospect of remuneration, make the work possible for those in ordinary vigor. With good management there need not be heavy lifting; small-sized frames and hives are handled easily, while a good veil and a smoker will keep stingers at bay. A tranquil, quiet person will succeed among the bees, when one nervous and irritable will be likely to suffer.

In the above picture Amanda has no gloves, but her face is well protected, and her gentle movements do not disturb the bees, even if crawling upon her gown. She knows they can get angry, and does not by any movement arouse their ire. We have learned to detect the sound of approaching swarming, and to find the queen in the new colony; and we know also the value of the bees to the fruit-grower, and keep our row of hives under the shade of the trees for mutual benefit.



Among the Bees.

### Artificial Swarms.

By Morley Pettit.

Last week (page 820) we described retarding and watching for the swarming impulse, down to the detection of queen cells containing a queen larva. Colonies having such cells are swarmed artificially in the following manner: Hives previously prepared for swarms have been distributed about the yard before starting operations. They each contain, in the order named, 2 dummies, 3 starters, 1 worker comb, 3 starters and 3 dummies—12 in all (this is the Pettit hive, which has 10-frame Langstroth capacity). One of these is brought and set down on a bottomboard and stand behind the hive to be treated. The operator who sits at the left of the hive removes the three dummies from the right or farther side of the new hive, and shoves over the remaining contents, so as to have the empty space next to him. He now lifts the comb nearest him from the brood-chamber, shakes it almost free of bees, and places it in the new hive, next to the left wall. The next comb has a double space for shaking off bees in the old hive. It takes its place beside the first comb, and the return motion of the hands carries a dummy from the new hive to the old. Comb No. 3 is shaken, carried to the new hive, and dummy No. 2 is brought back. The fourth comb exchanges places with the first starter, and so on. When the twelfth comb has been shaken in its own hive, and transferred to the new, the sixth starter put in its place, and the old hive filled out with the three remaining dummies, we put on the supers, close the hive, and the bees have been "swarmed."

There is now a swarm hived on starters on the old stand, under conditions fairly natural, at the convenience of the beekeeper, and without fuss or worry. They should be treated exactly as a natural swarm. In extracted honey production, it may be best to give worker combs or full sheets of foundation in the brood-chamber, instead of starters.

A few minutes after shaking, swarms sometimes

shown signs of queenlessness. The queen has been accidentally left with the brood, or, in rare cases, has been lost. In this case give them a young queen, a ripe queen-cell, or a frame of open brood and eggs. If the latter is given, all but the best queen-cell must be destroyed at the next weekly visit.

The "parent colony," as we may call the hive of brood, sits directly behind the swarm, and has enough bees to care for the brood and the best queen-cells which have been saved unshaken. It is given an extracting super at once, and removed to a new stand at the next weekly visit. To save time, these parent colonies might be given laying queens, or, on the other hand, the brood might be shaken clean of bees and used for building up weak colonies and nuclei.

## EVENTS OF THE WORLD.

A tremendous free-trade demonstration, held at the Alexandra Palace, London, June 4th, marked the Cobden centenary. Eighteen thousand people were present at the meeting.

An American syndicate has obtained from Menelik, King of Abyssinia, an important preliminary concession for the construction of railways and exploitation of mines in Abyssinia.

The Germans are having more trouble in Africa, this time owing to a dispute over the German and Belgian boundary in the vicinity of the Congo. German troops took possession of Kutchuru, and turned out the Belgian officer in charge. In retaliation, Congo troops have been despatched, and a conflict is feared.

A cablegram from Berlin, says the existence of a secret personal compact between the Czar and the Kaiser, whereby the monarchs have bound themselves to prevent war between Germany and Russia as long as they and the present Crown Prince of Germany live, has been admitted by the President of the Reichstag. The announcement has made a sensation in political circles.

The Thibetans have rejected every overture made by the British. It is reported that they are now in possession of one thousand modern rifles, supplied to them by the Russians, and that they are enlisting help from the Mongolians, who are described as expert horsemen, familiar with the use of lance and gun, and much resembling the Cossacks in their methods of warfare. The British are still in the neighborhood of Gyantse.

The ship Godthab, which arrived in Denmark recently from Greenland, brought letters from Dr. Erichsen, leader of the Danish Literary Society; Greenland expedition, which went to Greenland some time ago for purposes of investigation along literary lines. The doctor and his companions are living among the Eskimos, and have succeeded in gathering a rich store of Eskimo legends and fables. The party is now at Upernavik, but will visit other coast colonies before returning to Denmark.

The Portuguese town of Setubal, which contains 80,000 inhabitants, is threatened with an epidemic of hydrophobia. A mad dog bit thirteen others, which in turn went mad, and bit 200 goats and cows that supply the town with milk. All of these were killed, and 600 cheese were destroyed, but not until two days after the biting had occurred. Much alarm exists in the town, and the medical authorities are exercising the strictest lookout for development of hydrophobia symptoms among the people.

Important naval manoeuvres, based on the experiences of the contesting fleets in the Far East, are to be carried out this month in British waters, by British fleets. The successes of the Japanese navy, especially in torpedo work, have been watched by British naval experts with the keenest interest, and experiments along similar lines will be made. Many experiments will also be carried on with submarines, which the Japanese have not used. Notwithstanding the fate of the A1, in which eleven men were drowned, the Admiralty has at present over one thousand names of naval men eager to take part in these submarine exercises.

The situation in Morocco does not improve. Mohammed el Torres, the Sultan's representative for foreign affairs, is appealing to the tribes to capture Raisuli, stating that this alone can save Morocco from invasion, the presence of American war vessels in the harbor seeming to have but little effect upon the brigands, who feel quite secure in their mountain fastnesses. The demands of Raisuli, one of which calls for the deposition of the Pasha of Tangier, are exceedingly difficult to deal with, and it is thought that powerful European intervention may be necessary before the trouble is settled.

Owing to the peculiarity of the situation which has developed on the Liaotung, it is little wonder that the peninsula has become the center of the keenest interest, not only to the contestants themselves, but also to the outside world, which follows daily the events transpiring in the Far East. Although the several