

to trace the attacking party to its stronghold, and a few puffs of smoke administered in the enemy's camp frightens the bees within doors and keeps them there in a state of alarm, which is communicated to each returning marauder until the whole colony is at home in a state of terror. The entrance of the beleaguered hive is then narrowed down, or it may be absolutely closed with a piece of perforated zinc. When this has been done a piece of cloth saturated with carbolic acid hung an inch or two from the entrance will prevent renewal of hostilities. The bees dislike the smell of carbolic acid. The regular inhabitants of the hive will pass it, because they must do so to reach their home, but the strangers associate the odor with danger and retire when they smell it. Observations on the weather and the nectaries of plants will generally enable the bee-keeper to anticipate these attacks or their renewal.

As to the tactics of the bees in warfare it is somewhat difficult to speak, on account of their rapid movements, but the plan seems to be, when possible, to detach two bees to deal with each one of the opposing force. An intruding bee when attacked by only one other bee seldom assumes the offensive. His one object seems to be to get into the hive, and when he gathers up his abdomen into a small compass as to prevent his being stung between the rings of his body, the joints being apparently his only vulnerable points. By coiling him and following him about into various contortions, the defenders, especially if they be two to one, eventually manage to discover an unprotected spot and then he is very rapidly stung to death. One bee is able to sting another bee and withdraw the sting, which it is seldom able to do when it stings a man. To sting a man the extremity of the body, and frequently the entrails, are left along with the sting by the unfortunate insect. The combat, like honey gathering, is invariably conducted by the worker bees. In the event of the attacking party proving successful in achieving an entrance by force, they then assume the offensive and slaughter the inhabitants. Apparently in order to save themselves from this fate when the hive has been overcome, the remaining inmates will make common cause with the assailants and even display vigor in carrying off stores to the enemy's hive, which they permanently join. The attacked hive, unless very light, will take one or two days to clear, excepting indeed, as frequently occurs, the robbers are joined by other hives who wish to share plunder, and then the stores disappear with greater rapidity.

Reference has been made to the rapidity of the bee's movements in what may be called hand-to-hand encounters. This exceeding activity is intimately associated with the formation of the sting. It has a series of barbs, there being about nine pockets formed by these on each side. The serration on one side comes opposite the barb point on the other in such a way that although a bee is unable to withdraw its sting, by means of a direct motion, it is able, by making nine turns to screw the sting out, and thus free itself. This supposes the sting to have been driven in up to the hilt, which is not usually the case. Numerous other questions intimately associated with this fighting occur, but they would gradually involve the entire economy of the bee and its surroundings.

## SUNDRY SELECTIONS.

A COLONY WHICH DID WONDERS AFTER STANDING OUT ALL WINTER.

CHARLES W. DICKSON.—I am wintering my hive on the summer stand. Yesterday, (Nov. 22) the weather was so very mild that the thermometer stood at 65° outside, the bees were out flying about just like a day in midsummer. I fed about one pound of honey to them out of a feeder similar to Schuk's at the entrance. They are also flying about to-day, it certainly is very remarkable weather. One of my neighbors who keeps a few hives of bees, wintered them outside without either chaff cushions or outside box last winter in the old box hive without moveable comb frames, and strange to say in the spring his colonies were all strong and healthy and in good condition. One colony swarmed as early as the 3rd of June. I am certain it was large enough to fill a bushel measure. At the close of the season this colony had given off eight swarms, and also made about twenty eight pounds of honey in the top box. Can you account for such early swarming when no attention was paid to his hives whatever? Others here who gave more attention to the comfort of their bees had not the same luck. I am more in favor of out door wintering than in a cellar. My colony so far is very strong and vigorous.

Stellarton, N. S. Nov. 23, 1889.

It is not an unusual occurrence for a colony wintered on its summer stand without any protection whatever to give great results. In early spring the sun's rays seem to warm them up rapidly and they frequently commence brooding earlier than those packed in chaff, or other packing. Then if the weather is favorable enough to allow them to continue their brooding successfully, and they have plenty of stores, they can carry on brooding so rapidly that by the time the swarming season arrives