

## How Much Can You Tell Without Looking Inside The Hive?

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Must the beekeeper always open the hive to determine colony condition? In one particular bee yard I have forty colonies. It had been approximately 2 weeks since I had last visited this Catskill Mountain yard. I observe that one or more skunks were at work at five of the forty colonies. Their presence and activity were evidenced by the trodden-down and matted grass at the five colony entrances. Why had the mal-scented weasels chosen these particular colonies and left the other thirty-five alone? I opened all five and found three of them to be without a queen, or recent trace of a queen. How did the skunks know these three colonies were queen-less? I don't suppose they did, but they evidently did find them less spirited.

The most useful external evidence is weight. By lifting one end of a hive the operator can judge the approximate poundage of honey stores within. No experienced beekeeper would ever waste time opening a colony in order to find out if it has adequate stores. The congregating of bees at the entrance of the colony, loafing at a time when other colonies give evidence of greater effort and activity, is a revealing sign. This is particularly true at swarming time. Not all colonies bent on swarming evidence this revealing sign, but many do. During the swarming season a beekeeper can save the strength of a few colonies by walking in front of his hives, and detecting which ones are not laboring enthusiastically. Such ones may be queen-less, or they may have their storage space so full of stores and brood that there is no use of their going to the fields for nectar. An almost certain method of determining which colonies are queen-right is to note into which hive entrances the field bees are carrying pollen. There seems to be an occasional exception to this rule, but it's a rather reliable criterion. No great number of bees in any colony is going to seek out and bring in pollen unless there is a queen in that colony producing ones that need pollen for food.

The flight of many young bees orienting themselves before the colony entrance is another revealing evidence. The operator knows, at least, that such a colony has had a producing queen, and the chances are good that it still does.

And how about the aroma? Can the smell of nectar newly gathered into the hive tell the beekeeper good news? Yes, if he takes the time to test the air about the bee yard; and if he is experienced he may be able to tell the source of the new crop.

The colony that is populous and able to send large forces of workers into the field reveals this fact, to be sure, by the number of bees that go in and out at the entrance. Here again, is reason for examining a colony at the entrance rather than from the rear.

The presence of a numerous air conditioning contingent at the hive entrance is indicative of significant facts, too. The larger the fanning committee the more likely it is that the multitude of bees and brood within the hive is great; and it suggests also, that the bees may be conditioning the newly acquired stores.

And how about the police force - those valiant M.P.'s that guard the entrance of the hive? Do they tell a story? Yes, and it may not always be the same story. A colony that has lately been molested by intruders seems to have more guards, and more aggressive ones. Did you ever notice how touchy even a small nucleus can be that has recently been pestered by a skunk or an opossum? Or note the unusual activity of the guards when robbing is rife in the yard, as for example, when honey is being taken off by the operator. It's intriguing to wonder who does the delegating of extra deputies at such times. If bees can't think (as we're told) how can an individual bee determine whether the guard force is too small, or too large, or just right?

The presence of large numbers of dead bees at the hive entrance, or of dead bumblebees, or of dead drones, or even of a desiccated mouse may tell a story. Much the same can be said of small granules of crystallized honey, or of a pile of moldy pollen. Whatever accumulates in front of the hive entrance can reveal a condition within the hive.

The presence of numerous drones at the entrance is revealing, too. If they're there during the height of the honey flow you can be rather well assured there are too many drone cells in some of your brood combs. If they're there in the late spring, just before the honey flow, the colony may be short of stores. If they're there in the fall, looking as though they had just been deprived of the use of home and larder by their penurious sisters, that's probably just what has happened.

Have you ever seen robber bees on the prowl? They act somewhat like young bees taking their orientation flight before the hive entrance. But there are differences in behavior between the two groups. The young bee on her orientation flight keeps pretty much within one fairly large cycle of flight. The robber usually does her flying closer to the niche in the hive through which she hopes eventually to get courage to enter unless, of course, she is on her second or later robbing trip, and then she hesitates less, though usually she still hesitates, like one who is guilt-stricken through knowledge of unethical behavior.

Did you ever observe how tightly a colony with a good crop of honey in its upper super has sealed the cover? An experienced beekeeper can almost tell with his eyes shut, how many pounds of honey there are in that top-most super by just starting to pry off the inner cover with the hive tool. If the tenacity of the propolis that seals on the cover does not tell him the poundage, the sound he hears when the cover comes off will

Whenever you observe that a colony is casting larvae (first drone and then worker) at the hive entrance you can be rather sure that there is not enough food in the hive and not enough nourishment being brought in to support these larvae.

Have you ever seen a colony during the winter with its chief entrance nearly propolized shut? Such evidence usually reveals that the sealing has been done by Caucasian bees or bees whose ancestry traces their previous geographical habitat to an extremely cold climate.

I haven't counted the number of external clues to colony conditions that are cited above, but I suspect it's in excess of a dozen - and most of them can be taken in, largely at a knowing glance.