

## ASCENT ORGAN IN THE BEE.

### The Scent Produced Forms a Means of Communication Between a Swarm or Colony.

By F. W. L. Sladen, in British Bee Journal.

*Concluded from Page 281*

As I thought it probable that communication of the kind I have been noticing was carried on chiefly (if not entirely) by scent, and not so much by sound, I tried to prove this by placing a strongly scented canvas screen across a line of "calling" bees which were standing on the extendedighting-board of their hive, so as to cut off communication by scent, but not by sound, between the party above and the mouth of the hive. I found that at a further distance. Scents such as rose-water produced very little effect. The smallest trace of creosote produced a marked effect, and I think that the bees have an aversion to the smell of this substance, as they are known to have for a similar smelling substance—carbolic acid. On the whole this experiment, which was repeated in various ways, produced no definite result one way or the other.\*

The following, experiment which I quote from my notes, may be interesting:—

July 30, 1900. 5.30 p. m. I put a single queen from one of my nuclei into a wire-cloth cage with twelve workers.

6.30. I went to the the cage and shook it. All the workers hummed and protruded membrane. A very sweet odour was noticeable, mingled with "seaweed odour"—sweet and more noticeable.

10.30. When quiet I fed the bees with a drop or two of syrup, and placed the cage. Four or five bees were standing round queen with membrane exposed, wings standing

out; some vibrating feebly almost without sound. Some bees got out.

10.45. One bee dropped on to the floor, and ran about as if searching for something. I held cage with queen and workers in it, near her. She did not notice the cage for a long time. The bees in the cage hummed occasionally. This did not perceptibly attract her more. After five minutes' searching, when the bees were quite silent, she discovered her proximity to them. She was then fully  $1\frac{1}{2}$  in. off. She exposed her membrane, elevated her abdomen, and hummed. Other bees did not follow suit. She continued humming for about ten minutes, gradually working nearer till she reached cage. Then she ran over it and tried to get in."

The membrane in question appears to have been first noticed so long ago as the year 1883, when Nasonoff, a naturalist of Moscow, described the organ, and an account of his description was sent by Zoubareff to Swiss Bulletin d'Apiculture (translated by Mr. Frank Benton in the British Bee Journal of Dec. 15, 1883.)

The organ is described as a canal. "At the bottom of of this canal a large number of small glands open, each one of which has an oval cell with a well-defined globule. From each cell a fine duct starts out and extends out to the bottom of the canal." Nasonoff further says that the walls of the ducts are of a chitinous texture. He assigns a secretory function to the glands, suggesting that they produce the perspiration. Zoubareff, while not absolutely rejecting Nasonoff's theory, connects the existence of the glands with the little drops of liquid that bees were said to let fall when they are on the wing, which, he says, represent the excess of moisture which nectar, freshly gathered from flowers, con-