distributed especially over the outer surface of the antennæ and at its apex, but occur also scattered over the other parts of the body and on the mouth parts.

Microscopic sections of the antennæ reveal still other organs which are not so apparent on the surface as the hairs just described. It consists of a small pit in the integument, widened basally, and having a small papilla on its floor, in whose summit is the opening of a still deeper cavity which also expands towards its deeper end. This inner cavity is almost filled up by a conical plug which arises from its floor and ends just below the aperture into the outer pit. The plug contains a thick nerve ending which these movable hairs brushes against an object the nerve within it must be at once stimulated. Tactile or touch hairs are arises from a ganglion cell connected with the antennal nerve by a nerve fibre. Ten or more of these sense organs occur on the terminal and the first three segments of the flagellum. It is evident that each is simply a sensory hair which has been doubly sunken into a cavity of the integument.

As before stated it has been conclusively proved by several investigators that bees perceive odors and it is said that if the antennæ are covered with shellac, bees can distinguish between distasteful substances only by means of proboscis. Schiemenz and most other writers on the subject therefore conclude that the sunken cones are the organs of smell, since, being below the surface, they could not be organs of touch. Some other authors, among whom are Cheshire, regard these inclosed cones as hearing organs. They suppose that the sound waves of the air enter the pit, as into an ear cavity, and these set up a vibration in the cone which stimulates the attached nerve endings. However, the appearance of one of these cones would suggest that it is too stable a structure to be affected by sound waves, so the olfactory theory seems much more probable.

The following, then, may be stated as a general summary of the evidence concerning the antennal senses and their sense organs in the bee: (1) The antennæ are highly sensitive to touch and are the seat of the sense of smell. (2) They are covered by several kinds of minute structures which are modified hairs containing special nerve-endings. (3) By inference, it would seem certain that these are the sense organs, but we can only form an opinion, based upon their structure, as to which are tactile and which olfactory. (4) One set of organs does not appear to belong to either of these categories and their structure suggests an auditory function, but, in the absence of evidence that bees hear, the purpose of these organs must be regarded as problematical.

HONEY CROP REPORT.

September 9, 1910.

The Honey Crop Committee met again yesterday (Sept. 8th), to consider crop reports and prices for dark honey. After carefully examining the many reports sent in, the committee conclude that the crop is slightly less than 1909, and believe that prices ought to remain firm in sympathy with the prices for light honey, fruit and other produce. The following prices are recommended, and have already been realized for large quantities:

In lots of one ton and over to wholesale grocers or commission houses, 6¼c. to 7c.

In smaller quantities to the retail trade 7¼c. to 8c.

Retail direct to consumer, 9c. to 10c.

In answer to our inquiry re prices realized for light honey, 95% report that the recommended prices have been obtained, 3% state that prices have been from 9c. to 10c., and only 2% have sold for less than 9c.

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Morley Pettit
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