

## INDEXED HONEY DEW

### Is it Produced by Plant-Lice or by Exudation of the Leaves.

After hearing Colonel Walker in an able paper maintaining that honey dew was the production of plant lice, Mr. Cowan, the Chairman of the B.B.K.A., summed up the discussion and said, "that both sides were right, because there was honey-dew produced by exudation of the leaves. You will always find a strong flow of honey-dew after hot and dry days, followed by hot and damp nights. If the night is dry, you do not get honey-dew. There are two causes which produce honey-dew. First, insects, which attack the leaves, and digest only part of the liquid they suck up, discharging the greater part in sticky drops, which we all know. Then, in the absence of insects, there was the exudation of the leaves. The exudation forms in small drops on the under-side of the leaves, and drops from one leaf to another. This has been verified by experiment, and anyone can test the experiment. If you take a branch of a tree and put it in water, allowing the leaves to be in an atmosphere saturated with moisture, after carefully examining the leaves to see if they were free from insects, you will find in time the drops of honey-dew form on these leaves. There are certain trees which produce it much more readily than others, as, for instance, the ash. He had intended to bring some ash leaves, with him to show them that night with the honey-dew crystallized on them. The two honey-dews differed in many respects; that produced by the leaves being formed at night—just the reverse to the other; that produced by the insects being formed during the day, and the hotter the weather the more it was produced, the greatest production being in the middle of the day; that was because the aphides were feeding during the day. During the night they do not feed on the leaves, so that the production

ceases. On the other hand, the leaves exude honey-dew during the night, when the atmosphere is moist. There was also a distinction in their composition. We all know that flower nectar is composed of saccharose and glucose, but the composition of honey-dew produced by insects contains a large quantity of dextrine, gums, and other sugars, such as mannite. Mannite is abundant in the ash, and is found in white scales on the leaves. Now, the honey-dew that is produced by the exudation of the leaves is identical with the nectar that is collected from the flowers. We know that the polariscope helps us very much in discovering these things. All flower-honey polarises to the left, and honey-dew, on the other hand, polarises to the right, like glucose, and it was supposed at one time that all honey that did not polarise to the left was adulterated. It is now known that some of this honey that polarises to the right is not adulterated at all, but is due to honey-dew. There is another important matter. The exudation of the leaves also polarises to the right, and we have to find out how to differentiate the one from the other, and devise a method of diagnosing it. He had demonstrated some years ago that insect honey-dew polarised to the right; but as the honey-dew produced by the exudation of the leaves polarised to the right, also, after dialysing it for twenty-four hours, according to Dr. Haenle's method, it would go back to zero, whereas the other would not do so. It therefore, showed that there was a difference between the insect honey-dew and the exudation of the leaves. This was a very important point to bear in mind. In some districts in France bee-keepers value this honey-dew so much that they take their bees to those parts where the honey-dew is prevalent. When he (Mr. Cowan) stayed at Hohwald, in the Vosges mountains, he investigated the matter carefully. He examined the fir trees that were being cut down which were visited by the bees. He had also brought over and ex-

g it the full strength After two days move w stand. The young ogether with the new ld up a good strong rther precaution, you ame of brood and give the new hive. This he bees swarming out h clipped queen there of the bees swarming you are not present uch an event should queen will likely be es have returned to themselves queenless, ne of the queen cells n this queen goes out they will swarm out there may be more en. In such case the n to the hive, and if ately hived they may strates the necessity condition of the hive to expect. Clipping if carefully worked. rked properly it may n no case, however, d traps.—Ed.]

a correspondent refers iticism of "E. A." of e report on Canada to nal, we criticized last hmen, who are arriv- parts of the world, e industries, possibil- l disadvantages of the have unpacked their acquainted with local limate, market, etc. l the new-comer like r the would-be settler nces in a new land of e right kind of man, willing, the whole of nces of independence a the more congested