

# Eighteenth Annual Meeting

## OF THE ONTARIO BEE-KEEPERS' ASSOCIATION.



Continued.

we got rid of the last traces of honey found in the comb. Then I took this very same die and stumped out two inches square and weighed it, and the result I will read in detail. The results are tabulated and they show the weight in grammes. I could not show it in ounces; it is necessary for me to take the metrical system of weighing to show the differences.

Our tables show the original weight of two inches square of foundation, and then they show the weight of the same area of empty comb at the close of the season and from those data I was able to calculate the percentage of wax that was added by the bees to these respective foundations. I found that in some foundations the bees added only 75 per cent. of wax, whereas, in others the per centage went up to as high as 175 per cent. I found that when we supplied a heavy foundation the per centage of wax added was the least and when we furnished the bees with the lightest foundation the bees added the largest per centage of wax. "Foundation in general use," that is the name of foundation supplied to us; we found that the per centage of wax added in that, in round numbers was 75 per cent; in the "patent process," 12 square feet per pound, the wax added was 175 per cent. If you wish the actual weights added I can give you them. I will give you two as an example: The Foundation in general use, two inches square, weighed 1.41; the wax that was added by the bees was 1.15; in the case of the 12 square feet the weight of the foundation furnished was 1.00; the weight of the wax added by the bees was 1.78. So that the first conclusion I was able to draw from that work was that the weight of the wax added by the bees was inversely proportional to the wax supplied in the foundation. I do not mean to say that I draw a rule and say that they all vary in the same proportions; that is not possible from these figures, but it is very evident from these three years experiments, because the two following years corroborate what I am saying now, that to the lightest

foundation the largest amount of wax has to be added. When we furnish a comb containing a larger quantity of beeswax then there is a less quantity of wax added to it by the bees. Now then, that points to this, that if our object in furnishing foundation comb to the bees is to allow them time and energy for the production of honey which otherwise would be given to the production of beeswax then, it is more economical to furnish heavy foundation than a very light one. That is one of the deductions we were able to draw from the first year's experiments.

Acting on the supposition that that was the main object in furnishing beeswax, I said that it pointed to the economy of supplying the bees with a foundation of not more than seven and a half to eight feet to the pound. That was what our results showed. That is to say, when you had a foundation which occupied an area of fifteen square feet to the pound then the bees had to supply a very much greater proportion of wax in building, than they did when you supplied a wax foundation of eight or nine feet to the pound. There were several other things which were noted and which are of some importance to you. For instance, when we started with a darkly colored foundation we found that that dark color remained and that there was a heavy and unsightly fishbone, as it is known, in the resulting comb, and I suppose that that materially affects, if not the quality, the sale of the honey. Another thing, we wanted to find out whether there was any difference between these foundations in the ease with which they could be drawn out by the bees, and supposing we were to take two waxes of different brands, but of the same weight, could the bees utilize more of one than they could of another? Several of these foundations that were submitted to us were milled at different temperatures and the object was to ascertain if the milling temperature had any effect upon what I might term the ductility, the ease with