

ty method are correct, then we must conclude that 70 degrees is too high a temperature. I think it more probable that the levulose decomposes below 70 degrees. If the method by specific gravity is strictly applicable then the results obtained at 70 degrees are evidently too high. I will read you a few more results for the sake of comparison :

The percentage of moisture obtained when honey is dried at 70 degrees centigrade is 23 ; by the specific gravity method we obtained 19 per cent ; another sample by drying 20, by specific gravity 15 per cent ; by drying 22 ; by specific gravity 13 per cent : drying 26 ; specific gravity 21 per cent ; by drying 21 ; specific gravity 15 per cent. We seem to get about 5 per cent less water in honey by this specific gravity method than when drying at 70 degrees.

I am not prepared to say to-day definitely which one of those two is the more correct. I do not believe either of them is strictly speaking accurate, but I think the specific gravity method gives results nearer the truth. There are reasons which I need not on this occasion enter upon that lead one to think the specific gravity method does not give the exact per centage of solid matter in the honey, but I believe it will be found on further investigation to be much more reliable than the drying method. We shall examine this method more fully as time permits. We also purpose next year to institute a series of experiments drying at still lower temperature than 70 and using a vacuum. It may be a lengthy process but we shall have achieved something in Canada if, through the instrumentality of this Association, we show that the results as recorded for the per centage of water in Canadian honey are in-

accurate and that we have been able to find out something of a definite character with regard to the normal contents of water in honey. It is a question of scientific interest but it is more than that, it is a question of some commercial importance, because if there are differences in water contents of ripe and unripe honey if it is desirable that only ripe honey should be placed upon the market. it is absolutely necessary we should have some means for determining what is ripe and what is unripe honey ; in other words, a means of accurately estimating water in this material.

I trust I have made clear the reason for the statements I have made with regard to the unreliability of this drying process, of the results on record and the necessity for future work towards perfecting an analytical method. In order to see if our assumption regarding the decomposition of levulose were correct I made artificial honey. You remember that honey consists essentially of two sugars, dextrose and levulose ; so we obtained chemically pure dextrose and levulose and mixed in equal proportions and then analysed them by these two methods the specific gravity and the crysolite or asbestos fibre methods, and with the latter drying at the temperature of boiling water and at the temperature of 70 degrees centigrade. By the specific gravity method we got the results expected ; that is to say, there was a return for all the dextrose and levulose in the solution. It is thus evident that if honey were a mixture of dextrose and levulose only then reliable results as to the percentage of water present would be obtained by the specific gravity method. I am very hopeful of this method and think it very probable that further