HONEY—PURE AND ADULTERATED

An Address Prepared for the Annual Convention of the Bee-keepers' Association of Ontario

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Mr. President and Gentlemen: We have in connection with our work at Ottawa on five different occasions collected samples of honey throughout the length and breadth of the Dominion, and the results of our work upon these samples have been published in bulletin form, and I have brought with me a number of copies of each of the bulletins reporting the collections. The first collection was made in 1897 and is reported in bulletin No. 47. The next collection was made in 1903 and is reported in bulletin No. 90

Mr. Chairman and Gentlemen, it would be a very easy and satisfactory thing to speak in general terms of honey and the character of honey—its history, how it is used, and so on; but this morning I am going to try to act rather as a schoolmaster, if I may be permitted to do so. I wish to take up the subject in a serious fashion, and while I shall attempt to discard as far as possible all technical terms in the course of this address, because I hold it is not fair to expect people who do not make a specialty of chemical work to be able to follow chemical nomenclature and methods, yet there are two or three words that will insist upon being used, and just at the beginning I shall ask you to be kind enough to fix in your minds two or three terms. Take the term "flour." You have corn flour and buckwheat flour, as well as wheat flour. I want you to learn to think of the word "sugar" in the same way. When you buy a dollar's worth of sugar you imagine a particular kind of sugar. You must not imagine that this is the only kind of sugar. What you call sugar I will call cane sugar—I mean the kind we buy in the grocery shops and use in our tea. Chemists call it sucrose. The sugar that is in honey is not cane sugar; at least, not the main sugar. A well-made honey by healthy bees very seldom contains more than two per cent. of cane sugar. The sweetness of honey is due to a different kind of sugar altogether; it is really due to two kinds, dextrose and levulose. Often they are put together and spoken of as if they were one sugar; often we speak of this as invert sugar. What we mean by this is a mixture of dextrose and levulose. If you will kindly keep in mind the terms "cane sugar"—the sugar we use on our tables—and "dextrose" and "levulose"—as the names of the sugars in honey—and remember that these sugars are often spoken of as "invert sugar," you will be in a position to follow me. They are spoken of as invert sugar for this reason, that cane sugar can be turned into dextrose and levulose, and to turn it into it is called inverting it. To turn the common sugar we buy in the shops into the sugars we find in honey is termed "inversion," and when we do vice versa we call it invert sugar. I want to preface the address with these remarks because I can find no terms to replace those words.

The first thing necessary to a clear and useful discussion of any question is that we should know what we are talking about. In the present case, we must make up our minds as to what honey is. Perhaps you will allow me to illustrate at once the exact definition, and the importance of such definition by reference to another article of food.

Milk is universally recognized as a product of the cow's udder. We may imitate milk, by incorporating more or less successfully, the fat, milksugar, albumen, casein and water with traces of salts; but without the agency of the cow our best attempts will be denied recognition as more than imitations of milk. But we have still to decide whether the actual product of the cow's udder is necessarily milk. So far as Toronto is concerned, even this will not be recognized a **legal milk** if it fall below 3.0 per cent. in fat. Many cows yield a fluid