

terations, we believe; and all any one has to do is to have certain samples of doubtful honeys analyzed by proper chemists, and submit the results to the Bee-keepers' Union, or such a union as will take cognizance of such cases. Glucose of the best quality can be bought in car-load lots for about $2\frac{1}{2}$ cts. per lb.; granulated sugar, for not less than 5 cts. Practically, then, glucose is the only article that can be used as an adulterant, at a profit. Sugar may possibly be used, but we doubt it.

Samples Nos. 104, 110, 126, 127, 149 (see Bulletin No. 13 of the Department of Agriculture), bearing the label of Chas. F. Muth & Son, were pronounced adulterated with glucose. We knew that the Muths would not adulterate. One of three things *must* be true; viz. (1): They have unwittingly bought honey from parties who adulterated; (2) Their labels have been counterfeited; (3) or the chemists may not always be able to detect glucose adulterations. We incline toward the probability of (1) and (2), that Muth & Son have, as innocent parties, been imposed upon. In view of the possibility of (3) being true, we should like to see the experiment of Prof. Cook's tried once more by three other chemists, and the results compared again. If necessary we will foot the bill, providing State or national funds can not be secured for the purpose. By the way, who bears the expense in the present instance?

The above rescript of the analyses of Prof. Wiley has just been received by us contemporaneously, as we understand it, with its receipt by the proprietor of *Gleanings*, whose remarks upon the subject we entirely endorse.

The Successful Wintering of Bees Results from the Proper Combination of Different Conditions.

HIBERNATION of bees is a question that was much discussed a few years ago in the bee journals. Some claimed that we could not winter bees without it, and others argued that the theory of hibernation was the result of a vivid imagination. If the word was taken to mean an absolutely torpid state and nothing less, as death cannot mean less than complete absence of life, then we know that bees cannot remain in this latter state more than a day or two and remain alive. However, I take it that hibernation, as a word much used, really means that torpor or languor that comes upon very many animals upon the approach of winter, and is only dissipated by the natural fulfilment of this demand of nature, just as we cannot live without sleep. Some

have claimed that bees were not intended by the Creator to endure the winters of temperate climates, but are natives of warm countries, and that, therefore, we are abusing nature to attempt to winter bees, and must always expect loss. Now I believe that bees were as much intended to live in cold countries as the other myriads of hibernating insects. Even in California, Cuba or the hot climates about the Mediterranean and wherever bees are found, it is noticed that, at a certain season annually, they almost or quite cease brood rearing and readily enter that state of torpor provided by nature, called hibernation. The honey season in Cuba comes in February and March, so that special skill in management is needed to overcome the tendency to hibernation at this season, and induce the bees to breed for the harvest. Now the larger animals, being hardier, are able to hibernate under adverse conditions. The woodchuck, that winters so snugly in his nest underground, might perhaps winter in a snow bank, yet all animals that pass the winter in a state of quiet, must feel the injury from other than natural conditions. The principle of hibernation is found among all the orders of the animal kingdom, being very common among the insects, and less met with among the higher vertebrates. Now, since we find this hibernating instinct such a very common thing, and that among our bees it is simply an answer to the demands of nature, to the inexperienced it must seem like a very simple matter to supply them with proper conditions to winter them in health. But to those of most experience it is an ever difficult problem.

Mr. G. R. Pierce, of Blairstown, Iowa, recently issued a little book upon "The Winter Problem." It is very well written; most of the statements therein made seem to me to be scientifically accurate and the general theory correct. The book is, however, remarkably narrow in its view of the causes of winter loss. For example, the claim is made that upward ventilation of the hive is very detrimental, and that the bees only live in spite of their abuse in this manner by their keeper. He also belittles the effect of honey dew and poor stores, which I think is wrong. The evident object of the book is to prove that the only true way to winter bees, whether in the cellar or out of doors, is to leave the covers well sealed down, and to protect upon the sides or top with double walls, paper, or chaff, etc. I am willing to grant that bees can be well wintered in this manner, but so they can as well in many other ways. His narrowness in this conclusion is to be attributed directly to the falsity of the premise. This is