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A number of correspondents of the American Bee Journal and other periodicale have lately given their opinion that the spores of Bacillus Alveii were destroyed in a very short time in boiling honey. In order to ascertain if this belief was conjecture or otherwise a number of experiments were tried and with the following results.

## HONEY USED IN THE EXPERIMENTS.

The honey 20 lbs. of clover and 20 lbs. of buckwheat, was furnished by Mr. R. F. Holtermann of Brantford. The clover honey had a specific gravity of 1.042 and the per cent of formic acid in it was .057. The buckwheat honey had a specific gravity of 1.042 and the per cent of formic in it was .170, that is about three times more acid than was in the clover sample. (This result was in accord with a number of other experiments made on this subject two years ago and reported in the Agricultural College report for 1896.)

The formic acid determination of the two samples is given because this substance is used in Ecrope as a curative or preventative of Foul Brood. Bertrand in the Conduite du Rucher, 8th Ed. Nyon, Switzerland, gives the following directions for the use of this substance.

A solution of acid in water in the following proportions is made;—acid 10, water 90, and this solution is poured into the cells, the frame having been taken out of the hive. In addition, to hasten the cure, a tablespoonful of the solution to a litre of syrup may be fed to the bees.

This last quantity, a tablespoonful of a 10 per cent solution of formic acid to a litre of syrup, is exactly equivalent to a .15% solution of formic acid, or a little less than is normally tound in samples of buckwheat honey. This small amount, however is sufficient to inhibit the growth of Bacillus Alveii, or in other words it acts as an antiseptic.

In a number of experiments the writer has found that nutrient media made up with .15 per cent of formic acid was sufficient to prevent the growth of this germ, even when the cultureswere placed ander the most favourable conditions for their growth, except of course the presence of the acid. This strength of acid has no effect on the spores. Spores kept in .15% formic acid beef broth for six month retained their germinating powers unimpaired.

## DEATH POINT OF THE SPORES OF BACILLUS ALVEII IN HONEY.

In these experiments the spores were treated in three different ways:--

A. Silk threads were dipped into water containing spores of B. Alveii about three weeks old, and allowed to dry.

B. A large test tube was half filled with honey, and spores were thoroughly mixed into it.

C. Small capillary tubes were filled with water and spores and then sealed.

These three lots were then suspended in 20 lbs. of boiling honey. At the end of every fifteen minutes, a silk thread, a portion of the honey and spores from the test tube, and two capillary tubes, were withdrawn from, the boiling honey, immediately inoculated into nutrient media, and placed in the incubator at a temperature of 37°C. By the growth or absence of growth in the media one could ascertain if the spores had been killed or not.

The results of this experiment was as follows :---Clover Honey.

## A. SILK THREADS.

TIME.	темрт.	RESULT.
15 min.	115°C	Growth.
30	113°C	"
45	115°C	"
60	113°C	"
1.15	114°C	**
1.30	115°C	"
1.45	115°C	"
2 hrs.	114°C	"
2 15 min	116°C	"
2.30	115°C	66
2.45	11500	no growth
8 hra	11500	10 810W CII.
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## B. TUBE CONT. HONEY.

TIME.	TEMPT.	RESULT.
30 min.	113°C	Growth.
45	115°C	<i>46</i>
60	113°C	"
1.15	114°C	"
1.30	115°C	**
1.45	115°C	"
2 hrs.	114°C	66
2.15 min.	116°C	"
2.30	115°C	no growth
2.45	115°Č	~~ BIO(( )