

place. On plates containing one drop on blotting paper there was abundant growth in twenty-four hours.

(c) Eucalyptus agar was made by using a teaspoonful (4 c.c.) of tincture of eucalyptus to a litre of agar. Six plates were made with eucalyptus agar, each plate inoculated with spores, with the result that the growth on the medicated agar was only slightly less than that on the control agar. The medicated agar smelt slightly, but characteristically of eucalyptus oil.

A Queensland (Australia) correspondent of the *British Bee Journal* (71) is of the opinion that no foul brood exists among bees in that country. The reason of this is that the honey that goes into the combs is largely gathered from the eucalyptus, the medicinal qualities of which combat foulness in all forms. This statement, however, is not reliable, inasmuch as foul brood is known to be prevalent in Queensland.

(9) *Naphthol Beta*. Naphthol Beta was first used as a remedy by Lortet (72). The treatment is as follows:

The drug is administered in the food, in the proportion of one-third of a gram to a litre. This one-third of a gram is at first dissolved in a little alcohol, as it is extremely insoluble in water. Afterwards it is mixed in a litre of water, and this liquid is used for making the syrup. In England the usage is to dissolve the naphthol in the sugar, the proportion being about forty to fifty centigrammes to a kilo of sugar. It is, however, better to dissolve it in alcohol. Lortet thinks that external treatment by means of fumigation or spraying is helpful, as these methods contribute largely to the disinfection of hives, comb, etc.; but as he believes that it is always the digestive canal of the nurse bee which is infected and that it is by the act of feeding that the adult bee infects the digestive canal of the larvæ, therefore all efforts should be directed to the digestive canal of the worker bees, and the treatment ought to be internal and as energetic as possible. He states that when administered in the proportion of 0.33 gram per 1,000 of liquid it prevents all fermentation and decomposition and other changes caused by microbes. He further maintains that in addition to the use of this preparation first-rate hygienic conditions are necessary in order to give the bees vitality and recuperative power, which play an important part in enabling living organisms to resist the inroads of virulent microbes.

McKenzie found that (28) a beef broth containing one per thousand of B. Naphthol prevented spores of *B. alvei* from germinating, and consequently had an equal value with one per five hundred of carbolic acid.

This remedy has been widely used and with considerable success.

Experiments on the antiseptic value of Naphthol Beta. Naphthol Beta agar was made in our laboratory the same strength as that recommended by Lortet for feeding, that is 0.33 gram B. Naphthol to one litre of agar. Eight tests were made in Petri dishes, inoculated with spores of *B. alvei*, and in no case did growth result; from which we learn that a dilution of one-third of the solution used by McKenzie completely inhibited growth. Naphthol Beta agar containing 0.165 gram of the drug to a litre of agar was also tried, and the result of a number of tests was that some growth took place on the medicated plates and abundant growth on the control plates.

From these experiments, also those of Lortet and McKenzie, it will be seen that Naphthol Beta has a strong antiseptic action.

(10) *Naphthaline*. This substance is regarded as a preventive rather than as a curative, although there are cases known in which it has effected a cure of diseased hives. A small quantity of the drug is placed on the floor board of the hive, a crystal about 2 c.m. in diameter as far from the entrance

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