

or in the poison bag for regular domestic use, just renders the queen fit for infection. The brood may (by its absence in the brood food) also be just in condition to be preyed upon by spores floating about in a diseased hive, whilst the worker-bee, by carrying about infected honey, spreads the infection to young queens fed on royal jelly. Thymol, salicylic acid, phenol, and perchloride of mercury have been found, well diluted, to retard the growth of disease germs, but so far as I can learn, unfortunately such germs have been found to actually develop and multiply rapidly when the supposed poisonous dose has been afterwards increased, even to double its strength. Koch gives us a fine list of antiseptics (thymol, arsenate of potassium, turpentine, clove oil, iodine, permanganate of potash, eucalyptol, camphor, quinine, salicylic acid, benzoic acid, etc., etc.), but gives the palm to perchloride of mercury, "1 in 600,000 solution impeding, and 1 in 300,000 completely checking the germinating power of spores." Yet even this substance (*i.e.*, corrosive sublimate) which is highly poisonous, acted no more upon the life of the germ than weak vinegar would. Ten per cent. of phenol was no better. How, then, can we expect much from fumes of an acid, or a spray which we are bound to use so weak that the skin may not be injured. Besides, we must bear in mind that the presence in the hive of large quantities of carbonic acid would result from the use of much formic acid, and this we know is inimical to animal life.

I am afraid we are not yet within measurable distance of a complete cure for foul brood, one which destroys the spores when used as a spray, and also destroys the bacillus itself when given as food to the live bee. Certain chemicals which will kill a plant will not injure the seed; for the latter, like the spores of bacilli, are provided with marvellously protective skins. To destroy combs, brood and hive, and feed queen and bees upon syrup containing almost any acid in clean combs, fumigating with camphor, phenol, terebine, thymol, menthol, fir wool oil, or similar hydrocarbon would be my procedure if it were ever my fate to be in such ill luck as to have a visit from what I call "bacillus incognito."

NEW FOUNDATION FASTENER.

FROM Mr. J. W. Whealy, of Kinross, we have received a sample of his new machine for fastening foundation in sections. The frame measuring thirteen inches in height, eight in width and nine inches deep, is ingeniously made and held firmly together by dovetailed mitres, no nails, screws or glue being used.

When in use it stands on the edge of a table, a steel plate fastened to the bottom projecting sufficiently to be heated by a lamp. This steel plate has a tongue measuring nearly four inches across, so that it readily slips inside an ordinary sized section.

The section is placed on a small spring table having a piece exactly half the width of section for ensuring the foundation being placed precisely in the centre. Slight pressure with the hand brings the edge of the wax in contact with the warm steel plate; when the pressure is released the foundation is fastened securely in position.

The device is very simple and quite ingenious, and with one or two slight improvements might be made to serve a very good purpose. With it sections can have foundation placed in them very speedily; five or six a minute is a low estimate.

There are a great many new devices for this purpose coming to the fore at the present time, and a serviceable arrangement which would not cost the user more than about \$2 would meet with a ready sale. Doubtless such a machine can be made—we think Friend Whealy's could be produced for that figure—that would meet all the requirements of the bee-keeper.

FOR THE CANADIAN BEE JOURNAL.

Free Trade—Increase and Comb Honey.

MR. Editor, wont you please let us have a few leaves of your BEE JOURNAL for about 6 months to discuss free trade on, of course, but itle do no hurt as I can see to let me and Hamalshire and some others have a little tok on free trade. Of course some readers will kik, and wont like it, but let them lump it. Give us the leaves and its all I care, I haint never sed nothin bout free trade nor any other polly-ticks in your journal cos I thought it would be prostituting my common-sense too much, and we alers ben a protectioner