

Foul Brood—Account of Its Cure in Twenty-one Days.

IN last week's issue, you, in an extract from a private letter of mine, held out hopes to the bee-keeping public of a speedy extirpation of the scourge to bee-keepers—"foul brood." I should not, under other circumstances, have made public the progress made towards the solution of this, the most difficult problem in apiculture, until a much larger number and more exhaustive series of experiments had been made by myself, but knowing the vast amount of interest taken by every bee-keeper, not only in Great Britain, but also to the Antipodes, I felt that as the "ice was broken" that all should know the means used, and particulars of the one perfectly completed experiment made by myself, and also the name of my co-discoverer of what, up to the present, seems to be a final solution to this apicultural dilemma.

Beginning from the commencement of a series of experiments I may say that since last March, when I found a whole apiary infected without even the owner's knowledge as to the dire calamity which awaited him this season when brood-rearing was in full swing, I recommenced to try various antiseptic drugs as a means of curing foul brood, and I think that I tried every drug of this description named in the *Materia Medica*, with varying results, but chiefly with utter failure. The difficulties under which I labored were great, as I could not, in justice to my customers, bring the subjects into my own apiary, and therefore had to travel backwards and forwards many miles, mostly on foot, as I cannot afford to keep a horse for such a purpose. I also, after examining such colonies, had to thoroughly disinfect myself and cease work in my own apiary for two days. Having no one else that I cared to trust among my bees it caused me a vast amount of inconvenience in the conduct of my business.

In all these experiments I used the drug tried in the food given to the bees. This I found exceedingly difficult, the bees objecting to feed on same, and when honey commenced to come in even refusing pure unmedicated syrup. Among the drugs used was formic acid—tried by several bee-keepers a few years ago—which I gave a deal of attention to, as I thought that this seemed to be more efficacious than any, simply from the fact that the bees would feed more freely on syrup medicated with this than on any other, but with this I failed to cure. I was almost giving the experiments up in disgust when, in a letter of Mr. Sproule's, published in a contemporary, he said that he also had been using formic acid in the food, and also by vaporizing,

and thought that he had made a cure. I felt confident that the presumed cure was not effected by feeding the bees, as I had fed and fed the same medicated syrup, but with failure, and therefore deduced the theory that the cure was effected by the vaporizing only; if so, what a glorious discovery! as this would be the more simple by far than by any other means. I felt so certain upon this point that I purchased a colony as badly affected as I possibly could get. In this colony comb after comb had dozens of affected cells in all stages. I moved this hive nearer my home, having purchased it between twenty and thirty miles away, so that I could conduct the experiment with greater facility, making preparations to burn the lot if in a week they showed no improvement.

I commenced by crowding the bees upon six of the worst combs, shutting the remaining three in a perfectly close box. I then cut two narrow strips of wood half an inch broad and thick and long enough to lay along the runners on each side of hive, so that when the frames and division-board were placed on same the bottoms were raised $\frac{1}{2}$ of an inch above the floor-board. I then made an apparatus which would mould a gutta percha trough 6 in. long, $2\frac{1}{2}$ in. wide, and $\frac{3}{4}$ in. deep, outside measurements. Having formed this trough to my satisfaction, I covered the top with coarse wire-cloth, with the exception of $\frac{3}{4}$ in. at the end. This trough I inserted under the division-board, leaving the uncovered end outside same. I then made a wood cover with lid that would cover the end of trough and also prevent the bees access behind the division-board. The wire-cloth I covered with a solution of gutta-percha. Everything was now prepared for the experiment. Lifting the wood lid I poured three-quarters of an ounce of pure formic acid into the trough, shutting the wood lid and contracting the entrance of hive to two bee-space width. I left them for twenty-four hours, and at the end of each such space of time lifted the wood lid and poured three-quarters of an ounce of the acid into the trough. On the sixth day I examined the colony and with feelings of disgust saw no difference; if there was any it was not perceptible to me. Of this, more in future experiments, as I think perhaps something will come out of it.

I stood no doubt looking the picture of despair, when a sudden thought occurred to me, and breaking off a small piece of zinc from an excluder I placed this in the trough. Upon next examination, seven days after, writing from my notes, all the newly hatched larvæ were perfectly healthy, compact in cluster, and pearly white. Several dozen cells with perforated cap-