

what he has seen with the naked eye, of course Mr. Doolittle has a perfect right to believe or disbelieve, whatever he pleases, but, if he persists in discrediting observations made with the microscope, when he "lifts up his warning voice," let us hope some one will feel it to be his duty to set him right, if he teaches error.

Mr. Jones calls attention to an alleged error by Cheshire, in regard to the angles of cells, which bees are capable of building, and he refers to a comb exhibited by himself, in proof of Cheshire's mistake. The inference he wishes the reader to draw is, that, since Cheshire is not infallible, he should not be looked upon as an authority on foul-brood. Every bee-keeper knows that when combs are soft from the effects of heat, they may be stretched or compressed, so as to put the cells altogether out of shape. Something of this kind may have happened to the comb in question. If infallibility is a requisite qualification for an authority on foul-brood, I fear Mr. Jones is in a much worse position than Cheshire. Some years ago Mr. Jones taught that he 'could start foul-brood in his yard at will, by decapitating drone brood, and leaving it to rot over a nucleus. Lately he stated in the C. B. J. that it cannot be started at will in this way. This was one of his *believed* facts, stated with as much confidence as if it had been *ascertained*.

There are more unwarranted statements and assumptions, in the science of foul-brood, as taught by Mr. Jones and those who agree with him, than are to be found in any department of bee literature. For instance, Mr. Jones says, "We have no knowledge of the disease ever being spread by the bees after the honey in their sacs was consumed." I reply that it is an unwarranted statement to say that he ever knew when the honey in their sacs was consumed without killing the bees. Then again, Mr. Jones says, "Perhaps some of the scientists can tell us why it is that a bee, with its sac filled with foul-broody honey, can consume or remove every particle of it from the sac, so that clean honey put into the sac never gets a trace of foul-brood." Before any real scientists would attempt to tell Mr. Jones *why* it is, he would ask him first to show that the fact is as stated, and then Scientist Jones would find he had a contract on hand which he could not fill. Mr. Jones can never know, in the first place, that a certain specimen of honey is foul-broody, unless he knows that the infecting matter has been either purposely or accidentally placed in it, and even if infected honey were fed, he is not warranted in telling us that it can be known when the contamination has disappeared from

the alimentary canal, without microscopical examination.

To show that Cheshire is not the only well informed writer who holds that the disease is not always conveyed in the honey, but is sometimes conveyed by diseased queens, and that other remedies besides the starvation plan are required, I shall quote selections from a foot note by the present editors of the British Bee Journal. They write as follows: "One hundred and twenty-five years ago Shirach wrote: "The most simple remedy is to remove from the hive the infected combs, and to make the bees fast ten days, after which fresh combs can be given them." In those days, and until quite lately, it was supposed that honey was the medium through which the disease was communicated, and means were taken to induce the bees to consume all the honey they carried, before they were allowed to raise any brood. Over and over again has this been tried; combs have been removed, and bees have been starved, to make them consume their honey, and when brood rearing commenced, the disease has again broken out."

"We English know something about foul-brood, and the remedy proposed on the other side (of the Atlantic), and those who have been bee-keepers long enough know that it has been thoroughly tried here, and has as thoroughly proved a failure. German beekeepers have also advocated the same thing.\*\*\* All the leading bee-masters of Europe have tried and failed."

"We have no need to take a lesson from our Canadian friends on the treatment of foul brood, for they are now only where we were ten or fifteen years ago, and it would be well for them to take a lesson from us, for we have taken precautions against it spreading."

They say further: "Although not denying that honey is a possible source of infection, that it is the usual means, we cannot admit, as we have abundant proof to the contrary. We know of many instances where the introduction of a queen has resulted in foul brood, and we also know that it can be carried from one apiary to another." See B.B.J., pages 42 and 43, 1891.

The foregoing extracts confirm in the strongest terms possible, what Mr. Cheshire said, and yet Mr. Doolittle thinks he should take it all back. Let it not be supposed that this is a case of one writer backing up another writer's statements, simply because they happen to be countrymen. Most readers of the B.B.J. know that for some years past the relations between the editors and Mr. Cheshire have not been cordial.

When bacteriologists wish to be sure that they