

For the Canadian Bee Journal

A LITTLE AFRAID OF HIS OWN LOGIC.

IN a lecture on the anatomy of the honey bee lately, Prof. Cook said, in speaking of the glandular system: "One pair of glands furnishes the saliva another the food for the larvæ. Drones do not have this gland, and it is only rudimentary in the queen, which shows that she once nursed the larvæ as the queen bumble-bee now does in the spring. The change that has taken place in the honey-bee in this respect, is another proof of the correctness of the evolution theory."

Mrs. M. B. Chaddock, in a late number of the *A.B.J.*, hauls the professor over the coals on this evolution theory in a manner at least lively if not logical and convincing. She tells him "there is no evolution about it," which of course, ought to settle the question. That is about the way such questions are settled by non-scientific people. That many excellent people, like Mrs. C., should have a strong aversion to a theory which clashes with their early education and their preconceived opinions, is perfectly natural, and the thing is as common as it is natural. And the arguments that these good people often use to dispose of a distasteful doctrine are often as ingenious as they are peculiar. Mrs. C. bravely argues the question in her own way and to her own satisfaction, and then triumphantly asks the professor some crushing questions. Friend Newman then adds a note asking the professor to "kindly reply to these queries." To say that I was anxious, indeed, impatient, to see how the professor would get out of the bad box he was in, is not saying too much. We had not long to wait. In the next number he comes down with his answer smiling. It is before me, but I am disappointed. True, it is courteous, conciliatory, almost apologetic, but—but, is it strictly scientific? Now, Friend Cook, I am quite willing to admit that it is an awkward—a very awkward—thing to get into an altercation with a lady on a question so abstruse—a question, scientific but unpopular—that I admit; but the man of science owes the duty of unflinching firmness to his readers and to the world, and that duty is to steadfastly stand by his colors, to stand by the conclusions of science whether they be popular or unpopular, whether they agree with the notions and prejudices of certain people or not, and whether they are attacked by a lady polemic or a male combatant.

After kindly assuring the professor that what he considers a proof of evolution is no proof at all—that "there is no evolution about it"—Mrs. Chaddock asks the professor, among other questions, the following: "Do rudimentary glands

prove that animals possessing them ever used them for the same purpose that the glands proper are used for now? * * * And do the rudimentary mammary glands in man prove that our baboon ancestors drew nourishment from the male and female parent just as it happened, without any distinction of sex?" Prof. Cook replies "that rudimentary organs are in themselves conclusive proof that they originated from a useful condition of the same organs, is surely disproved by Mrs. Chaddock's happy illustrations." I have the presumption to object to this answer as being not strictly scientific—as involving an unworthy concession to popular prejudice. Of the almost numberless rudimentary structures to be found throughout the animal and vegetable kingdoms, such as eyes, legs, lungs, mammary glands, muscles, teeth, wings, pistils, stamens, etc., every biologist knows, and Prof. Cook knows, that a large proportion are the degenerated *remains* or *rudiments* of organs once fully developed and having full functional activity, and that these rudimentary organs, many of them, do in themselves, carry the proof "that they originated from a useful condition of the same organs." Many of these structures, no doubt, originated through inheritance, but the fact above stated remains no less true.

As pertinent to Mrs. Chaddock's last question, I quote here from the greatest naturalist—living or dead—that the world has ever produced, whose remains now rest in, and honor, that great repository of the distinguished dead, Westminster Abbey. In "The Descent of Man," vol. I, page 30, Charles Darwin says: "The reproductive system offers various rudimentary structures. * * * We are not here concerned with a vestige of a part which does not belong to the species in an efficient state, but with a part which is always present and efficient in the one sex, being represented in the other by a mere rudiment. Nevertheless the occurrence of such rudiments is as difficult to explain on the belief of the separate creation of each species as in the foregoing cases. * * * It is well known that in the males of all mammals, including man, rudimentary mammæ exist. These, in several instances, have become well developed, and have yielded a *copious supply of milk*. Their essential identity in the two sexes is likewise shown by their occasional sympathetic enlargement in both during an attack of the measles."

In the process of evolution and development there are numerous examples of organs and structures degenerated through long ages of disuse, into mere rudiments of what were at some period in the past active, fully developed organs. In some cattle we find small, dangling horns,