

FOR THE CANADIAN BEE JOURNAL.

"DRY FECES."

A VALUABLE ARTICLE FROM PROF. COOK.

DEAR SIR,—I have received a beautiful lot of "dry feces" from our friend, S. Corneil. Many of them are undoubtedly feces of bees. These for the most part were voided out doors. They contain hardly anything but pollen, and must have been unusually thick and solid when voided, as in many cases they have not stained the substance on which they fell, and they have kept their form remarkably. Some masses are attached to the cloth above the bees; these are full of fibres, which were undoubtedly torn from the cloth by the bees. Some of these masses, perhaps most of them, never went through the bees, I think.

I have examined many and many a bee, some from the hives in winter, some from the hives in the spring, as they first left the hive, and all during the season. Yet I never found any faecal matter as dry and stiff as those must have been. That the faecal mass in bees may become impacted and the bees costive is not improbable. From my numerous examinations, such dried fecal matter is not common. I doubt if it is normal. I have also examined all matter beneath bees in Spring when they had wintered very well, and when all was dry and nice. I never found any that I think was dry feces. I found wax pellets, often containing pollen, hairs, etc., sand, wood cuttings, mice droppings, etc., etc. One winter I took all matter from bottom board of a hive and had it analysed. Wax was very flinty, sand was found but no nitrogen, nothing that acted like feces.

Mr. Corneil's painstaking and laborious researches show that bees do sometimes void their feces in a state of considerable consistency. That this is common all observation denies.

My own researches show that bees may winter with almost no loss, and there may be no feces voided at all. All these matters are complex and time is required to make accurate determination. Such observers as Mr. Corneil must help any cause. Let all watch and report.

I like the CANADIAN BEE JOURNAL. It starts off grandly.

A. J. Cook.

Agricultural College, Lansing, Mich.

Friend Corneil's discoveries are quite new to us, so far as bees voiding dry feces in the hive is concerned as we never discovered what proved to be dry feces in the hive, although we frequently imagined we had found it until close ex-

amination proved the contrary. Several times in placing our bees on summer stands in the spring, colonies that had wintered unusually well would sometimes void what could almost be called "dry feces," and it would even retain its shape and consistency. This year when we placed them on their summer stands in one of the yards, we remarked the absence of the specking on surrounding objects which frequently occurs. On examining the bees as they would light we observed that it was with seeming difficulty that they discharged any feces, the discharge being unusually hard, resembling short pieces of wire. When they would light on our own or other person's hand we would watch them carefully and see the discharge take place. It generally took so long that costiveness rather than dysentery appeared to prevail. The droppings might be noticed around on boards and on the ground retaining their shape perfectly, and if not examined immediately after discharge would be dry, and rubbed between thumb and finger would crumble to powder. Exposure to the sun gave it the appearance of dry feces, but on watching the discharge it was found to be slightly moist though a few minutes sufficed to render them perfectly dry. It appears to us that if the moisture could be removed from the feces that there would not be any trouble from dysentery, or if the condition of the hive was such as would enable the bees to pass off the excess of moisture leaving the residue in a more solid form, their bodies would not become so distended. We have examined many bees, and their bodies seemed to contain no more residue (if freed from moisture,) than those above referred to. This subject is one which may be studied with interest and profit by many of us. We think it a fortunate thing that we have such a friend as Prof. Cook to keep us all right with his microscopical investigations which are conducted with such accuracy and carefulness. We also feel very proud that