

form the incidents of life. Such variation in the bee, as Mr. [?], is admirable artifice of mere chance. Between the bee and [?], presents, in a more [?], alliance entered [?], kind, in that [?], space of history. [?], would learn more [?], honey-bee would [?], me of the secrets [?], of the humbler [?], y-bee. To such, [?], alists like Mr. [?], great force. They [?], world of thought, [?], higher conception [?], ly are.

T IN BEES

articles, reprinted in the *Journal* present the subject of "Im- [?], ney is no slave [?], readers will notice [?], statement he runs [?], y beliefs held by [?], nce he says "We [?], in the male egg of [?], while all knowledge [?], st be." It would [?], read Dr. Bonney's [?], lar question. Dr. [?], me of the last pas- [?], he anatomy of the [?], doubt as to the [?], on theory. [?], to have no doubts [?], vement. For some [?], proving" his bees [?], "and he is con- [?], eceeded in a very [?], wo articles furnish [?], g reading.

BONNEY

nal is too limited [?], o complex a ques-

tion as improvement of the honey bee, and I wish to make my position plain; that I do not deny that it is possible, while doubting that it has been, either by lengthening the tongue, altering their shape, decreasing their tendency to attack persons and animals, and what is of vastly more importance, eliminating the swarming instinct and increasing their tendency to store honey. Different persons have at various times claimed these improvements for the bee, just as others have followed the dictum that the cellar is the only place for bees in winter, while at least one prominent bee-keeper in a cold climate has discarded a thousand dollar cellar to winter his bees out of doors. I was laughed at because I never liked a cellar; and now there is a great revival of interest in the chaff or protected hive.

People run after crazes in the bee-world as well as in other callings. In the year, 1096, Peter the Hermit led half a million women and children toward Palestine to wrest the Holy Sepulchre from the infidels; in the two hundred years succeeding a million men perished in the same useless effort. I have only to recall to the mind of the student the Black Tulip craze, the South Sea Bubble engineered by law; the persistent belief in the Divine Right of Kings, and the old belief that slavery was a Divine Institution, to revive memory of an almost endless list of frenzies which have held the minds of people at different times. Now it seems to be "Improvement of Bees," and while, as wife declares, I am prone to try new things, I hesitate to subscribe to this.

Man can argue only from what he knows. He may imagine strange things, but like dreams, all must be founded on knowledge. We know not how the bees and other insects communicate information to their kind, though it seems that they do. Aside from the raw fact, we know nothing

more about parthenogenesis than we did at first. We are ignorant as to when the male egg of the bee is fertilized, while all knowledge of life tells us it must be. It is claimed and denied that the poison of the bee-sting is formic acid, but, in all, about habits, mentality, and a disposition to reason, we must ever go back to what we know about man for argument. Man is the only *intelligently* industrious animal on earth, but there are those who claim that the habit of industry can be developed in the bee.

I believe from present knowledge, that *management* has more to do with surplus honey crops than the breed or color of bees, and a very pertinent illustration of this is a small book issued by Mr. Doolittle a couple of years ago, in which he details how he got 114 pounds of honey to the hive when his neighbours got none. If my memory serves me, there was not a word in the book as to the *kinds of bees used*. It was all *management*. A letter from Mr. Darbishire, author of "Heredity and the Mendelian Discovery," confesses ignorance of the subject, but promises to let me know if he finds out anything.

What have we accomplished toward a *permanent improvement* of this insect in the past 50 years? A few men, and some professional queen-rearers claim much, but I defer vastly to the opinion of the professional bee-keepers; and few, if any of them, seem to be satisfied that anything has been done. They all seem to hope for results by and by.

Mr. Wesley Foster, in a recent letter to me used the term, "Hand-picked drones." I think the term original with him, and it expresses the vast difficulty of trying to breed bees.

While we always have had the bee just as it is now, and especially that branch known as the *Apis* family, we can trace the development of some of