

the domesticated animals through the ages, as the horse, for we find the bones of the original *Equus* fossilized in the rocks. The horse has developed from a little 3-toed (?) animal about 18 inches high to what we have now, but the knowledge of man goes not back to the time when the bee was different from what it is now, excepting that we have yellow Italians. Enthusiastic breeders of goldens make great claims for them, but the verdict of the bee-keeping world seems to be against them as honey-gatherers and for hardiness.

Before the Langstroth hive was invented there was but little talk of improving the bee, and I suspect that once more *effect* is being taken for *cause*, and the *management* as a factor in securing a crop is ignored in an effort to prove a claim. I know from persistent observation that a colony which gives a large surplus this season may in subsequent seasons prove to be of little value, and I have letters from old bee-keepers who tell me they have observed the same thing. What does it mean?

When I took up the study of Mendelism I hoped to be able to solve some of the problems pertaining to the bee, notably its improvement by selection and breeding, but the student will be disappointed with me, for the Mendelian law cannot be applied to the parthenogenetic insects. Could we "hand pick" our drones we might do something if we could know what the queen was, that we were about to mate; but unfortunately for us, we cannot hand-pick our drones before mating, or know whether the queen is going to be worth a politician's promise. Her mother was a fine queen. Hum! Owners of trotting mares and stallions would give a pretty price if they could know when they bred them that the progeny would trot in swift time.

We seem to be able to keep up family

markings in the bee-family, but as long as bee-men will find colonies of "scrubs," which produce enormous crops of honey, so long will bee-keepers doubt that there is much in "breed."

One of the most prominent bee-keepers in the United States says: "It is almost impossible for a queen rearer to duplicate the characteristics of his breeding queen. The fact that Nature has designed that there shall be promiscuous mating among the drones explains how sports, showing 'extra yellow' or 'long tongues,' revert back to normal type in spite of us." In other words, we may, and can, and do perpetuate sports in the domestic animals, producing plain, barred and spotted chickens; race, general purpose or draft horses, milch or meat cattle, and so on down a long list of domestic animals; but we may not, cannot, and do not perpetuate the rare sports in the family *Apis*, because bees are wild by nature. It does not matter a whit how much we may believe that a non-swarming strain is possible, for belief is not evidence, and some prominent bee-keepers frequently acknowledge unintentionally I suppose, that we have made but little progress in improving the bee.

Dr. Miller says, in reply to an enquiry (see page 117 of the American Bee Journal for April, 1911): "The trouble is, that if you get a queen of that kind you are not at all sure that her royal progeny will be like her."

J. L. Byer says, page 187 of the American Bee Journal for June, 1910: ".....and if I were asked what is the 'best bee,' I should certainly say the first cross of Italian queens with Carniolan drones. Unfortunately the next crosses are not nearly so uniform in good points as the first cross."

Why?

I am inclined to the opinion that in the hands of such men as Townsend,

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Doolittle, By and others, and hives h with honey r selection. A to swarm doc a colony lacki "ready" for what was the which made me last (1911) of surplus co the year before ter season, and old, I got prac from what I h versations wit who keep bees a similar exper

I do not care tionist. I am a tion, while ma selection and b when Darwinism the survival of th among bees) an ing types.

It has been e start of this di not understand th which is our ma the bee, is not count of actions, the tint of hair o Century Dictiona are chiefly obse and cultivated pl plain. Most of th centuries of bree oddities, and are vert to original and plants almost to ancestral types. domestic animal, an best, "domesticatio term.

We want somet occasional colony large surplus. We bees which will bre