

bees, but careless of their quality! They preserve all their queens because it is a calamity to let a colony become queenless, and their colonies that are too poor to collect enough to supply their own wants they feed, for it is also bad to lose a colony. The prevalent curse too of breeding for fancy qualities is abroad, and, like foul brood, is frightfully contagious. But worse, perhaps, than all, we have not learned to control the drones—worse because with the drones under control all these other obstacles would almost vanish.

One hundred years ago the Collingsses of Great Britain undertook the improvement of the ox. For their purpose they selected stock wherever found, of whatever name or color having qualities which they desired to perpetuate. Their stock was originally improved by importing Holstein and Holland cattle which they used in crossing. Subsequently they crossed with a polled Galloway, from which was obtained a breed of great repute, and as the final result they obtained the magnificent shorthorn. We might accomplish in ten years with bees what they did in one hundred with cattle!

What ten, fifty or one hundred of our most successful honey-producers will form a syndicate, and, under competent management, on an island or a prairie, secure from any interference, put any colony or colonies they may from time to time find in their own apiaries showing more than ordinary honey-producing qualities without respect to race, or name, or color, and let them be there bred on scientific principles, with the most relentless culling and the most careful tests?

The mind of some one here is no doubt full of notes of exclamation and interrogation, and would exclaim; "What! would you cross and combine the races?" My reply is, yes! If we ever succeed in making a decided improvement in the honey-bee that improved bee will not be a pure blood of any of the existing races. No existing race has a monopoly of the desirable qualities—certainly not the Italian.

Let me make a suggestion in closing, with regard to the cross-breeding of bees. Some one, I have forgotten who, in one of our apicultural publications, to illustrate his ideas of the evils of cross-breeding, said, in substance, that he had a cow—a cross, if I remember, between a shorthorn and a Jersey, that proved to be an excellent milker; but, he went on to say, a further cross would result in a progeny of little value. He was in a measure correct in his statements with regard to the crossing of two breeds, which had each been bred for a purpose so entirely and radically antagonistic to that of the other. Indeed, he might have gone farther, for his cow,

the first cross might naturally have inherited the poverty stricken sinews of the one parent and the non-milking qualities of the other. But he was entirely in error in his application of these facts to the case of the honey-bee.

As we have seen, all our races of bees have been bred by nature for honey-production, and so nearly equal are they that each race has its friends. From whichever parent a cross-bred bee inherits, it must still be a honey-producer, and the same must be true of all subsequent crosses; and, to produce anything else, nature must "go back" on all her previously established laws.

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TOP VS. SIDE STORING.

QUERY No. 120.—(1) What are the advantages of a top story over side storage? (2) If I want a hive with a capacity of 7000 cubic inches, is it better to have 3500 cubic inches in a lower story and the same in a top story than to have it all in one story, and why?—GREENHORN.

H. D. CUTTING, CLINTON, MICH.—(1.) Less work.

JUDGE ANDREWS, MCKINNY, TEXAS.—(1.) Top storage seems to be more in accordance with the instincts of bees, and in cool climates it is desirable on account of heat economy.

H. COUSE, CHELTENHAM, ONT.—(1.) It is less trouble getting the sections completed. (2.) For extracting purposes I think it makes little difference, but for raising section honey adopt the crate system.

J. E. POND, FOXBORO, MASS.—(1.) This is a mooted question. I prefer top storage, as the heat is more easily confined to a given space. (2.) A two story hive is preferable for reasons given above, and many others that might be given would space allow.

PROF. A. J. COOK, LANSING, MICH.—It is more convenient and secures more honey. In two stories. It is more convenient for both comb honey and in securing extracted honey. Again hives look better. I have tried both styles thoroughly. I am done with long hives.

DR. A. B. MASON, WAGON WORKS, OHIO.—(1.) Bees seem to prefer to have their surplus honey above them. (2.) Better to have in more than one story, because more convenient, and the best place to get surplus is above the bees, and I should not want a lower story over two-thirds as large as mentioned.