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terature

ment, I have worked steps, and find that dipary animal has half male and half or queen-bee has but 1,946 are female and while there is the en- 1,054,961 ancestors

the pedigree of a different, there being in the tenth generation of a queen or worker

at the reason for this in the number of an-bee and the ordinary ancestry of the bee tion, whilst that of up by involution of

8th	9th	10th
34 ..	55 ..	89
21 ..	34 ..	55
201 ..	423 ..	380

256 .. 512 .. 1024

York writes as fol-

answer is good. No mune to foul brood, better than others; is most vigorous in use the same vigor

We can not measure disease-resisting strength we can measure the be guided thereby. "American" is thus inion that the "stor-colony is in a mea- o its ability to resist

sked, "Why does Mr. rd 'Italian' at all in not the bees which y be the best to re-

sist disease, whether they have any yellow bands or not?" Very likely. All Italians are not of equal vigor. All blacks are not of equal vigor. Pit the best colony of blacks that can be found against the poorest colony of Italians that can be found, and the blacks will no doubt store more than the Italians; and equally they will do better at resisting disease. Italians resist disease not because they are yellow, but because they are **vigorous**."

It would be well for the bee-keeping fraternity if this were true. But is it? Most probably not. Immunity is said to be acquired only after a long and severe process of elimination of the strains that are least able to withstand the attacks of noxious microbes. We know that the people of Asia have developed an ability to resist disease to an astounding degree. A recent article in a scientific contemporary tells us that the Chinese can use contaminated water from canals without incurring dysentery, that very little typhoid is found amongst them, and that small-pox is a mild disease, to be likened to the mumps. And so on. For the conditions in China are such that individuals susceptible to these evils inevitably succumb, and as the result of a terrible selective process a specialized type of vitality, distinct from mere physical strength is evolved. It needs no explanation to show that such a characteristic is peculiar to races rather than to individuals, and we should not be surprised if adequate and carefully conducted experiment should prove that the same should likewise be true in the case of the bee.

Out-Door Wintering

What seems a good plan for out-door wintering is given by Isaac F. Tillinghast as follows, who writes:

In our climate we usually have days every month in winter when it is warm and pleasant enough for the bees to take a good flight, and my experience has shown that they keep in better health and suffer less from "spring dwindling" than where confined for four or five months as they frequently are in cellar

wintering. So for a number of years past I have practised packing them for winter on the summer stands, an operation which I accomplish about as follows:

The oil-cloth which is kept on top of the frames when the surplus supers and sections are not on, is doubled over to the front, leaving the back half of the frames exposed. Then in the centre of this uncovered space I invert a wooden butter dish (such as your grocer gives you as a part of a pound of butter), extending it crosswise of the hive, to cover as many frames as possible; and then fit an empty super on the hive as tightly as possible so that no water can be driven in.

This makes a clustering place for nearly a quart of bees, where they can retain their bodily heat, and keep warm and snug in the coldest weather, and also be enabled to reach their stores of honey below by passing over the tops of the frames. It also prevents the few bees from becoming detached from the main cluster and getting caught between two combs and perishing, as they otherwise sometimes do in sudden snaps of very severe weather.

Next, over this half of the hive, and over the inverted dish, I place a piece of old coarse carpet, or gunny-sack will answer, tucking it down carefully around the edges, and then fill the super with dry wheat or oats chaff.

Now carefully fit on the cover, and if there is any possibility of its leaking rain or snow water cover it with a piece of roofing, being sure that there is no place for water to work in, either.

Then raise the rear end of the whole hive at least two inches, letting it rest upon a couple of bricks or stones so that rain or melting snow will speedily run away from the entrance, and not work in so as to clog it or keep the bottom board wet.

THE FRENCH JOURNALS

By Dr. Burton N. Gates.

According to L'Apiculture, quoting from the British Bee-Keeper, it is advised that the novice in managing an apiary should gain the major part of his experience upon one colony, leaving the remainder undisturbed. In this way he gets practically all the experience he