

of honey; and any device, whereby the queen is hindered in rapid depositing of eggs in the proper season, is a detriment to the apiarist, and costs him many pounds of honey.

The hives, to be non-swarmling, must be capable of expanding, to meet the needs of an extensive army of workers, and at the same time we should be able to quickly contract them to any small-sized nucleus; by this means we have increase practically at our command, if we will be awake and attend to the bees in their season.

As the markets call for honey in comb form, in one and two-pound sections, of course our receptacles must be put up to accommodate this size of package, and if we can persuade our bees to build the sections marketably without separators, I would advocate their abolishment; but this is a debatable question, and one not fully settled in my own mind.

#### THE PREVENTION OF INCREASE.

There is another question of more vital importance to the apiarist than the use, or non-use, of separators, in working for comb honey, and one which we believe to be more difficult of solution, viz: the prevention of increase, and how to induce the bees to work in the sections. A practical method that will solve this problem, will be a boon to the apiarist, and we will listen with interest to all arguments in that direction.

It has always appeared to me that combs the size of one pound sections were contrary to the laws governing the household economy of the bee; and when they occupy them it is with reluctance, and only under force of circumstances; their brood-chamber must be filled to its utmost capacity, with brood, pollen and honey, and then only for pastime will they cluster in the sections, and gradually deposit a small amount of honey therein, until sufficient "steam" is raised to engender the swarming fever, when out go the bees, and the sections are left as empty and void of workers as a church-house garret.

It is the swarming nuisance that is a menace to the comb-honey producer, and any surplus receptacle and will overcome this difficulty, will be a boon to the bee-man, as well as to the consumer.

I also believe that a skeleton break-joint or zinc honey-board used in the centre of the hive is a detriment to the progress of the bees, more or less, and should be excluded. In manipulating for extracted honey, the case is quite different. Combs put up more in accordance with their natural instincts, can be placed above the brood-chamber, and with little or no ceremony they are quickly occupied, and the apiarist can expand the size of the surplus department to ac-

commodate the size of the colony, by adding more combs and cases; and the force and attention of the bees being turned to honey-gathering, the swarming impulse is almost wholly overcome.

To sum up: 1. Let us see that the hives and combs are put up in a way that will give the queen a chance to develop her strength. 2. See that the surplus receptacles are arranged so that they can be accommodated to the needs of the colony, be it strong or weak, and abolish as much as possible all complicated features. Let all frames, hives and surplus receptacles be made by a pattern, and use no other throughout the entire yard. Let all hive-stands, bodies, covers, brood frames, etc., be interchangeable with any hive in the yard, and you will be prepared to combine pleasure with profit in your bee-keeping.

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#### CROSSING RACES OF BEES.

**A** RACE, whether of men, cattle or bees, is a group of animals with certain marked characteristics which are persistent. That

is to say, the individuals within a breed or race, if purely mated, will breed true to the characteristics of the race. Race and breed are essentially the same thing; though we usually use the word breed when the group referred to has originated through man's selection, as we say Shorthorn breed, Morgan breed, Merino breed, Berkshire breed, etc., while we generally apply the term race where the breeding has been done solely by nature; where natural selection, not man's has developed the peculiarities. Thus we speak of the negro race, and the Carniolan and Italian races of bees. In case of a breed or man-formed race, the selection and breeding, if carefully done, is towards some type or standard. Thus our Jerseys were bred for milk exclusively; our Shorthorns more for beef. In like manner, our Hambletonians are bred for speed, our Percherons for draft. As such animals are bred for a distinct and specific purpose and owe their superior excellence to the very fact of a stored up potency because of this careful breeding, to cross such animals is very unwise. It antagonizes two powerful but opposite, or a least, different, tendencies and so is a shock to both and likely to shatter both tendencies and leave only uncertainty.

In case of a race this is quite different. Here nature has selected and the gain has been solely the good of the individual. So our races of bees, each has its virtues and all are developed in the line of the best welfare of the individuals.