

advantage over those slow to take up new ideas. It is better to be slow and sure and hold fast to well proved methods than to rush blindly into those new and untried, yet should we not take pains to find out the merits of all improvements as soon as possible and lose no time in adopting those which save labor or make success more sure. Since last March there has been much brought forward, ideas both old and new, that are of interest to bee-keepers.

The feeding of sugar for winter stores has been much discussed in the bee journals. While many advocate selling the honey and giving bees sugar syrup for winter, claiming that it can be done at a profit and that bees will winter better than with honey, the majority favor that management by which plenty of natural stores are left in the hive. The question as to whether it pays to use full sheets of foundation in the brood-chamber when working for comb honey has also been under discussion. The theory is that when foundation is given in full sheets the bees make nice even combs and do not build drone comb as is usually done, and that fifteen or more pounds of honey are saved for every pound of wax or foundation furnished. This is generally admitted to be the case, but on the other hand it is said as bees are able to draw out foundation in about three days, they then store honey in the brood-nest and the queen has all the room she requires to deposit eggs, the result is that boxes are neglected, honey stored below, and a large amount that should go in boxes, used in rearing useless brood. That in working for extracted honey or increase full sheets are profitable. When comb honey is the object, if narrow starters are used in frames and boxes containing finished combs or full sheets of foundation given at time of swarming, they at once store honey in them instead of in brood-nest, and as queen can only deposit eggs as fast as brood-combs are built, less brood is reared, little or no honey is stored and they are used for brood and pollen. This gives more honey in marketable shape. Drone comb will be built in some cases, but with right conditions this can be avoided. These conditions are a hive set level with a limited number of frames closely spaced, a young queen, the right kind of bees and a medium sized swarm. An extra large swarm, an old queen, frames spaced too far apart, or too many of them, will favor the production of drone comb. There is another reason not generally considered which favors the use of starters. When bees hang in festoons, secrete wax and build natural combs they are carrying out a natural instinct, its gratification stimulates their energy, and a colony so managed will gather

more honey than if not allowed to build natural combs. The suppression of this instinct in a measure lessens energy or prevents development of activity and affects the future usefulness of the bees. I think this idea is one worth attention, it will affect our methods considerably. It is said that in many cases when swarms are furnished with sheets of foundation or finished combs, the wax scales secreted by the bees are not used, but fall to the bottom and are lost. There are several prominent apiarists who claim that it does not take fifteen pounds of honey to make a pound of wax and that we go too far in the use of foundation. I believe this opinion, and the one that sheets of foundation are used at a loss in brood-chamber is growing among those who give the subject careful thought.

That natural swarms do better than those artificially made is admitted and this may be one of the many reasons. It may be possible to so perfect artificial swarming that we may get the benefits and avoid its disadvantages.

Another point for those who work for comb honey, although it is not new and has been followed by many bee-keepers for many years, yet is not well understood or its importance realized by bee-keepers generally.

It is that bees breed or cap over brood in shallow cells and store honey in deep ones. This natural law of the hive can be used to get nearly all the honey in sections. By placing frames so near together that bees can not lengthen out the cells for storage, these combs will be used for brood and pollen and the honey will be stored in wide boxes above. Brood combs that are already built out for storage should be shoved down to the right thickness and placed just bee-space apart. In the fall when boxes have been removed they are spaced wider that they may be used for store combs for the winter supply of honey. The majority space their frames one and one-half inches from centre to centre, about one-half inch between combs, in this case combs are about three-eighths or one-quarter inch apart, or one and one-quarter or one and three-eighths inches from centre to centre. This is too close for winter. Mr. Pond has ably advocated this plan of late and it is well worth following. I commenced bee-keeping in 1879 with the Hoffman frames and have used them almost entirely since. These frames have shoulders which keep them spaced one and three-eighths inches from centre to centre. They may be crowded together and when hives are shipped or handled the frames do not swing or slide. When a hive is opened several can be shoved back in a body and the required frame at once taken. I have tried some of the ordinary style, both with and