

Honey Bees and Orange Trees

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Honey bees and fruit growing go well together. Florida citrus growers all over the State are beginning to realize more and more the wonderful help that bees render as a source of revenue whether oranges or grapefruit are grown. Of course, there are many other plants, such as the partridge pea, palmetto, gall-berry, etc., which grow in the citrus regions and help in the annual honey harvest, but one of the real, big supplies of nectar gathered by the bees comes from citrus blossoms.

A combination of bee keeping and orange growing works in very nicely from the standpoint that the bees do not require any care or attention at the time the grower is busy with harvesting his fruit crop; neither does the grove require much attention when the grower is busy with his bees, as the swarming period as well as the harvesting of the honey crop comes at a time in the spring and summer when the grove is not calling for a large amount of work.

Again, honey bees are responsible for increased production of certain fruits, for it appears that certain crops, such as cucumbers and melons, cannot be secured at their best without the help of the bee as a pollenizing agent, and for this reason they are sometimes called the "marriage priests" of the flowers. However, do not be mistaken in believing that better or

larger crops of oranges and grapefruit can be secured by this pollenization, for it has been pretty well established that orange blossoms are self-pollinated and do not require the aid of any insect for this purpose.

Florida citrus growers have, until recently, been backward in the bee-keeping industry. There have been, however, some few pioneer bee keepers in this State who have made more than a success of it.

The late Mr. O. O. Poppleton was considered one of the foremost veteran bee keepers in the State, and on the East Coast where he operated he harvested immense crops of honey from the orange, as well as from palmetto and wild mangrove. Mr. W. S. Hart, venerable treasurer of this Society and one of its charter members, for years operated an apiary with profitable results in his groves along the East Coast. Mr. H. L. Christopher is now operating several apiaries in the groves of the Atwood grapefruit grove at Manatee. While the main harvests of honey here in Florida were formerly produced in the western portions of Florida, in the bottom lands of the Apalachicola and Choclahatchee Rivers, the opportunities for this industry in the citrus groves of the peninsular part of the State are without doubt fully as great.

Bee-keeping possibilities in Florida are greater than in many other states for here the weather is not severe. Bees can be wintered out of doors in single-walled hives with splendid results and the orange blossoms which appear first of all in the spring are a wonderful stimulant for brood-rearing. Given a reasonably good location in the orange section, with modern beehives, and colonies of Italian bees of proper strength and number, the orange grower as a bee keeper stands upon better footing than many other bee keepers elsewhere. Of course the results he will achieve will depend upon his management. If he will study his bees, learn their ways, and acquire a comprehensive understanding of their traits, they will compensate him for his time and efforts in a most generous way, and will, at the same time, afford him abundant opportunity to gain a first-hand knowledge of one of the most interesting revelations nature has to disclose to mankind.

In many groves throughout our State, a few hives of bees are kept very much as the farmer and small townsman invariably keeps a few chickens. At some time or other a hive or two of these industrious insects have been bought or a stray swarm captured, a place has been assigned to them in any old out-of-the-way corner of the grove, and there with almost no attention from the owner, they have been permitted to dwell in peace. Occasionally the hive has been opened and a small or a large supply of honey has been removed with not even a passing thought given to the source from which this wonderful product comes or to the possibilities of increased production through systematic attention and the application of advanced

bee-keeping methods. Some of these neglected hives are in the very choicest citrus-growing sections, in communities rich with orange blossoms, etc., and, even though only a few colonies of bees are kept, they could, with proper management be made to yield a honey crop not only sufficient to meet the demands of the owner and his family but to supply many a neighbor's table as well. In fact, these colonies could contribute some small share towards supplying the demand for a product that all the world wants but never gets anywhere near enough of.

Bee keeping in the groves of our State should be today far more important than it is. When grandfather, or even father, was a boy, a dozen or so "swarms" were kept in 'gums," old logs or the old-fashioned straw hives, in a corner of the grove as far away from the house and live stock as possible. These methods should now be "out of date." Bees should be kept in a manner in keeping with other lines of progress.

The only profitable way to keep bees is in hives with movable frames. The bees build their combs in these frames, which can then be manipulated by the bee keeper as necessary. The keeping of bees in boxes, hollow logs, etc., is not profitable, is often a menace to progressive bee keepers, and should be strongly condemned. Bees in box hives (plain boxes with no frames and with combs built at the will of the bees) are too often seen in all parts of the State. The owners may obtain from them a few pounds of inferior honey a year and carelessly continue in the antiquated practice. In some cases this type of bee keeping does little harm to others but in sections where dis-

eases of the honey bee occur the box hive is a serious nuisance and should be abolished. A most important consideration in purchasing bees is to see that they are free from disease. In our State the Plant Board has inspectors of apiaries who can be consulted on this point. The inspectors spend considerable time in visiting apiaries for the purpose of learning if disease is present, but if it is not possible for an inspector to be found at once, then one should refuse to accept bees that have any dead brood.

It might be of interest to know something of the honey-bee family, whose members we hear buzzing in our groves in the spring. In every beehive there are found three individual types of bees: the workers, the drones, and the queen. The worker bees are females who perform all of the essential duties of the colony, such as gathering food, nursing, etc., with the exception of laying eggs. This last duty belongs to the queen herself, who is a fully developed female, the bee-mother of the colony. The drones are male bees who contribute nothing to the upkeep of the colony and whose only value is that of mating with the queen at proper seasons. Drones are tolerated in the colony only during a honey flow and mating season.

It might also be of interest to know something about what honey-bees eat and where they find their food. They will gather nectar and pollen from almost any flower or blossom that grows. The task of providing stores for the entire colony as well as any other duties in and out of the hive, falls upon the worker bees. It is the older workers, however, who go forth to the flowers and blossoms and

carry back their heavy loads of nectar and pollen. The younger workers remain in the hive to nurse the baby bees and perform the functions of housekeeping and ladies-in-waiting on the queen. The fielders, or honey-gathering workers, upon their arrival at the blossom or flower draw the nectar into their honey sacks, and through a wonderful arrangement this is partially converted into honey by the time the return flight to the hive is accomplished. On almost every trip to plants and flowers bees will gather very much more food than they can consume, but the bee through an inborn instinct seems to realize that the days of bright sunshine and blossoms are of limited number and that in order to avoid starvation and maintain life something must be stored away. It is for this reason, when its own tiny appetite is satisfied, that the bee does not cease its labors and lie down to rest, but works tirelessly on carrying load after load of nectar back to the hive; there to be used for food as needed.

Besides the organs with which the bee gathers, secretes, and delivers nectar into the cells of the honeycomb, there are other parts of the body which have important functions to perform. Along the under side of the bee's body there appear, at certain seasons when food is abundant, tiny discs of wax, like fish scales, which the bees remove and use in building comb.

Bees, if permitted to swarm naturally, will increase about double each year, although some will swarm more than that, so when a beginner starts out with one or two colonies it is not many years before he has quite a large sized apiary. The cost of operation with a few colonies is

very little, and the time required for their care is of no real importance.

It is advisable that those who anticipate going into the business of keeping bees should start out with not more than one or two colonies, learning all they can about it while their colonies are increasing. In order to secure the best information on the subject, it is advisable to subscribe to some one of the bee journals published in this country and to secure some text book, such as the "A. B. C. and X. Y. Z of Bee Culture." Bulletins on bee keeping can also be obtained free of charge from the Department of Agriculture, Washington, D. C., and from the State Plant Board at Gainesville. Failures have been made by some who started in on too large a scale, not having the needed experience required in handling large numbers of hives. The subject is one that should be thoroughly studied, and one finds that the deeper he gets into it the more interesting it becomes. One of the main questions is that of selecting good stock; then it is very necessary that the bees should be properly housed in regulation hives, using comb foundation for the purpose of keeping the honey comb

straight. As stated before, the old fashioned hive, or "gum," should never be considered, as it has been conclusively proven unprofitable.

Bee keeping as an industry is now more important than in the past. The demand everywhere for honey has increased greatly. The supply is inadequate, as a result high prices have ruled, indeed, the present day bee keeper's returns from honey sales are so great that the old-time bee keeper would have thought them impossible. With the increased demand for honey and the correspondingly high prices the need is all the greater for the employment of the most scientific and improved methods in bee keeping; never before has the intelligent, thorough-going and progressive apiarist been afforded greater assurance of a rich reward. Those of you who are now engaged in bee keeping, or contemplating entering this field, will be well repaid by practicing present day methods. This applies with equal force to the man who is following bee keeping as a commercial proposition and the individual who has only a few colonies for home use.