

Bees in Orange Groves

PROF EG BALDWIN from Land Florida

Pollen is the essential feature or element in all fruitification of blossoms essential to fruitbearing Nectar the thin watery and only slightly sweetish substance that later ripens into honey is but the bait placed in the blossoms by Dame Nature to draw insects that aid in the fertilization of the blossoms.

As nearly everybody knows blossoms are of two sorts the perfect blossom in which the pistils and the stamens are both present The others the imperfect blossoms are such as show only the pistils or the stamens alone Some varieties of the strawberry for example bear only pistils and others only stamens while on still other sorts both are present on the same plant Now a blossom that is perfect can in theory fertilize itself that is can produce fruit without the presence of pollen from other blossoms But in reality self-fertilization is extremely rare so rare as to be almost negligible in a way Even perfect blossoms need pollenating agents of some sort to successful fertilization There are a side from the hand of man in a very artificial methods of fertilization only two fertilizing agents the of heaven and winged insects agents carry the pollen from the stamens to the pistils thus completing link that perfects the fruitifying the bloom In early books of it was customary to divide plants shrubs and trees into the wind loving and the Insect loving Now this division is not greatly followed for reason probably that most flowers the one sort often belong also to other class that is overlap A like the Indian corn for instance the stamens the tassel and the silk on separate stems Such a plant is theoretically capable of complete self-fertilization And its perfect fertilization ought to be complete if the pollen falls from the higher tassel upon the lower silk But place a stalk of corn by itself far from others of its kind and only a few scatterings of grain will appear on the cob showing that the fertilization was incomplete Corn while it is nominally a wind lover also encroaches on the domain of the insect lovers for bees visit the tassels of corn when in bloom aiding thus the winds that scatter the pollen dust But because the bees do not have any occasion to visit the silk the pistils because no nectar is there they confine their visits to the tassels the stamens So when the winds are few or low or absent corn that is a single stalk of corn will I never fully fill out its quota of kernels on the cob that develops with or without fertilization.

In a bloom like the orange for example the pistils and stamens are on separate stems more or less united at their base But the pistils rise a little higher than the enveloping stamens that stand below the pistils Hence while the orange blossom is a so called perfect flower still were the wind the only pollenating agent the pistils would have generally very slight chance to be fruitified in case a single blossom existed at a given moment For in case of the orange blossom the winds would have to lift the pollen from the lower stamens to the higher pistils Fertilization might take place it is true on one solitary orange blossom But a period of comparatively calm weather during the floruit of the particular blossom under consideration would almost prove fatal to fertilization and unless fertilization take place there would be no fruit on the blossoms Of course one solitary blossom is but a hypothetical case for illustrative purposes Does One citrus tree usually has many blossoms out at the same time and nearby trees often add their quota of bloom to swell the number of flowering stamens within wafting distance Therefore were even the wind the sole pollenating agent for orange trees there would be some fruit some fertilization if that is to say the tree stood near other trees or blossomed profusely enough itself.

Suppose however as often happens damp foggy weather should prevail during most or all of the time of bloom or a dead calm reign What then Suppose this dampness or calm prevail for even several days at the height of the blossoming period Both the dampness and the quiet calm with no air currents moving would seriously shorten the fertilization cripple the transmission of the essential pollen from stamens to pistils For the dampness prevents the free sifting of the fine flower dust and in calm weather no air currents bear the dust afar from blossom to blossom In such cases therefore were winds the sole fertilizing agency fertilization would necessarily depend upon what few grains of the pollen dust might chance to fall from stamens above upon pistils on blossoms directly below others But right here is where the other agency comes into operation and appears to best advantage For insects that live on the sweets of flowers more or less completely will be attracted to the thin watery semi sweet liquids secreted in the blossoms the so called nectar It is this thin nectar that later after evaporation and ripening by bees becomes the honey of commerce and our tables These sweet juices are placed by a wise Nature in the blossoms of the trees shrubs and plants needing the aid of insects for the very purpose of drawing their winged visitors to their stamens and pistils Millers butterflies sweat bees wasps humming birds bumbles and honey bees are the main agents in this particular kind of fertilization But damp weather a gain almost ends the visits of all but the bumbles and the honey bees and moreover bumbles are often too scarce or absent altogether to be dependable over very wide areas of time or in all localities In Florida for instance we have almost no bumble bees the great clover belts further north being their main habitat Bumble bees cannot be counted upon as 'universal pollinators.'

It is upon the honey bee therefore that the main task falls of fruitifying the vast areas of bloom from the short summers of a Labrador to the steady warmth of the tropics from the earliest peep of spring to latest fall Few fruit growers realize their great indebtedness to the visits of the honey bees to their groves in the Southland and to their orchards in the North But they are coming to a realization of their debt more and more In some parts of Florida notably in Manatee county the citrus growers are recognizing their need of something more dependable than mere chance to fertilize their groves. Formerly the beemen were too few or had too few bees in proportion to the number of groves and there was an antipathy to bees on the part of many because they thought the bees damaged the trees, blossoms or fruit, by their coming and culling going to and fro As a result heretofore bee men have had to pay a rental for the privilege of putting their bees in groves locating an apiary inside an orange grove for instance But enlightenment is coming Now the fruitman actually court the presence of the bees Notable around Braden town the citrus men actually offer the beemen free rent for bee yard sites and in many instances even buy bees of their own to place among the trees It is worth noting also that the Manatee Fruit Co of Palmetto has established three bee yards in or near their groves and still wish more They declare that the nearer the bees to their groves the more fruit they have and the better the quality Mr Z Goddard of Terra Cea has kept about 40 colonies of bees in his grove for the past six years or more and in all that time he had had every year an extra fine crop of fruit that has attracted wide attention For not only does cross fertilization increase the amount of fruit but it also betters the quality encouraging a heartier growth and development wherever the pollen of one tree is mixed with the blossoms on another tree just as for example a mixture of races produces the hardiest types of mankind

We venture the assertion that one very important reason for the marked increase in quality and quantity of the fruit in and about DeLand and in Florida in general is the very large increase in numbers of bees kept near the groves Twenty years ago there were not ten hives kept groves Twenty years ago

there were not ten hives where there are now hundreds Mr CF Spaulding of De Land was the first to see the importance of having bees in his grove and kept a dozen hives or so among his trees to increase effective pollination Now with many times that number of bees all about the neighborhood of De Land it is no longer necessary to place hives actually inside the groves for bees will and do ordinarily fly from one to three miles for blossoms in quest of honey and pollen But in counties where few bees are kept it will surely pay well if the growers will see to it that yards of bees are located not far from their groves.

For best results there should be not less than five hives to an acre more are even better for in stormy weather when bees fly for only a short time during the day or only a short distance from the hives a larger number of colonies will insure fertilization where only a few bees would not If any doubt the statements here made we shall be very glad to give such testimony of governmental and other experts on the whole question of **More Bees More Fruit.**

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