

[Read before Waterloo Beekeepers' Association.]

## ESSAY ON THE BEE.

THE BEE'S PLACE IN NATURE,—OR, HAS THE HONEY-BEE ANYTHING TO RECOMMEND IT TO HUMANITY BESIDE THE PRODUCTS OF THE HIVE.

**T**HOUGH we live in an enlightened community with intelligence and education on all sides, we find discords and bickerings, jealousy and envy, born of ignorance; making trouble all around us. The apiarist appears to be a special target for censure. His bees are charged with the committal of various offences, such as tearing out and sipping the juice of fruits, despoiling the plants they visit of their sweetness, strength, etc.

To the former of these charges, close and intelligent observations fail to give proof. It is found that bees only visit fruits that are already damaged by disease, birds, wasps, or other insects, the bees not being provided with the proper instruments for tearing the skins of fruits. They are therefore mere scavengers of what would otherwise be worse than lost.

Mr. Nelson W. McLean, who conducts the department of interest to beekeepers at the U. S. agricultural department at Aurora, Ill., stated at the late North American Bee-Keeper's Convention held at Detroit, that they in their investigations, had failed to discover that bees either would or could damage perfect fruit. No one denies that the bees will gather the sweets from the blossoms; but who, knowing that this nectar is secreted for the express purpose of enticing insects to the blossoms, and that what is not by them taken, will be evaporated and lost to the plant, would be base enough to deny them that privilege? If the offices of the honey bee in nature were generally understood, this industrious little insect would be hailed with a welcome into every neighborhood. We can not dispense with the insect world until we are prepared to do without the vegetable kingdom.

Plants are ushered into existence by the germination of seeds, thence by vegetation they are enlarged and grow until the third and most important stage of their existence is reached; that of fructification, or the production of fruits and seeds. It is in this last act, the act of fructification, that the honey-bee and other insects play such an important and indispensable part. The most careless observer and shallow reasoner knows that if no blossoms appear at the proper season, fruits and seeds will not be forthcoming. But how blossoms effect fructification is not so generally known. This I will endeavor to explain and show wherein bees effect the result:—

The flower with its parts, the fruit and seeds are the plant's organs of reproduction. A perfect blossom consists of calyx, corolla, stamens and pistils. The two latter are the essential organs of reproduction, and the ones to be explained. The stamen is that part of the flower crowned by the anther, which contains the powdery substance known as pollen. The pistil is that part which consists of an ovary at the bottom and rising from the centre of the flower terminates in what is called the stigma. This stigma is generally somewhat enlarged and has a moist or sticky surface upon which the pollen grains must fall and stick fast, if the ovary which contains the ovules or embryo seeds is to mature and ripen into perfect fruit and seeds. It is therefore plain, that if fruits and seeds are to mature, pollen must come in contact with the stigma, or in other words, the female flower must be fertilized, a process which at first sight may appear easy and simple enough, but is not so simple, when we consider that flowers are not all perfect. There are plants that have two kinds of flowers, in some of which there are stamens only, and in others pistils only. Who has not observed in walking through a pumpkin patch how very many blossoms there are in comparison to the pumpkins? We hear it said that they have so many false blossoms. Let us investigate a little. We find a blossom just opening with a small pumpkin at its base; this little pumpkin is the ovary of the blossom and contains the ovules or little seeds. Now look to the inside of your blossom you will find the pistil only, the stamen and its fertilizing pollen are absent. Next pluck a blossom which has no little pumpkin attached, it contains the stamen but not the pistil. It has therefore the pollen but not the stigma. In the pumpkin, then, as in many other plants, we have the essential organs of reproduction in separate flowers, growing though on the same plant, sometimes many feet apart. These flowers grow close to the ground generally in cornfields, where the wind gets little chance of blowing the pollen from one blossom to the other. Go to the field some fine morning with ears and eyes open. Your attention will soon be arrested by the pleasant hum of the busy bee. If you get sight of a bee, which you likely will, follow her up and you will find her going from flower to flower, sipping the precious sweets. When in the staminate or male blossom, she will come in contact with the anther, and get her dress dusty with pollen, and when in a pistillate or female blossom some of this pollen will attach itself to the stigma, thereby causing fertilization and fruit. The bee is not the only insect engaged in this work, but undoubtedly the most active and energetic.