

THE BEE COLONY

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One of the most complex and highly developed civilizations in existence today is not the work of mankind, but rather is the creation of the common honeybee. Groups of bees do not periodically set forth on expeditions to exterminate their fellow creatures, neither do they have any unemployment or labor troubles. Perhaps if we knew more about ~~ten~~ them and their behavior, nations would profit in their efforts to live amicably with each other.

Like most animals, bees live in groups called colonies, or, if the bees are moving about outside the hive, these groups are called swarms. To the three kinds of bees present in every hive, the queen, several hundred drones and 30,000 to 80,000 workers, is assigned a particular and useful function in maintaining the colony. Let us examine the colony in detail and see what the purposes of the queen, the worker bees and the drones are.

The sole purpose of the queen bee is to perpetuate the colony, and mighty efficient in this function she is, for normally she lays from 1500 to 2000 eggs per day. All of the eggs that have been fertilized are the same, and until the third day after hatching the resulting larvae may develop either into queens or worker bees. Here the natural instinct of the bee comes into play, for if conditions are crowded in the hive, the worker bees will pick out one larva and feed it a special diet in contrast to the honey and pollen given larvae destined to become worker bees. This is given as the only reason why one larva develops into a queen fitted only for ~~work~~ egg laying, and another will grow into a worker fitted

only for work in the hive and field. The queen never leaves the hive except on two occasions. The first is on her mating flight and the second is when she goes with the swarm in search of a new home. Her two contacts with the outside world are always in that order, too, for when a swarm issues forth from a hive, it is the old queen who often has **been** alive for two years that goes, leaving the young queen in the old hive.

IN FIELD AND HIVE WITH THE BUSY HONEYBEE



THE QUEEN'S LADIES IN WAITING KEEP HER WELL FED AND PREENED
Her diet is not honey and pollen, but "royal jelly," a secretion from head glands of her daughters.
Workers (lower right) are cleaning cells. Two baby bees are gnawing their way out.

The fertilized eggs that have been fed the regular diet of honey and pollen when they were in the larva stage will develop into worker bees. The worker bees are all females without the power of reproduction, yet they retain all the other maternal instincts,

for they feed their queen and the drones, keep the hive clean, and toil ceaselessly in the field in search of pollen and nectar. A certain percentage of the worker bees in each hive form a suicide squad about the entrance to the hive, ~~pro~~ti protecting it from all dangers. It is a wise provision to have only a certain number of workers assigned this duty, for if in attack, all the bees in a hive rushed out and succeeded in stinging the victim, the colony itself would perish. This is because upon stinging, the bee implants its stinger so firmly that in trying to free itself it loses its life. Thus it is safe to say that there is not a bee alive today that has ever stung anyone. Those worker bees that gather the nectar and pollen from the flowers are incredibly industrious, and the harder they work the shorter time they live. During the active season their life span is only about six weeks, While during the winter they live for several months.



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A WORK-WEARY FIELD BEE PASSES ITS LOAD TO A YOUNG NURSE AT THE HIVE

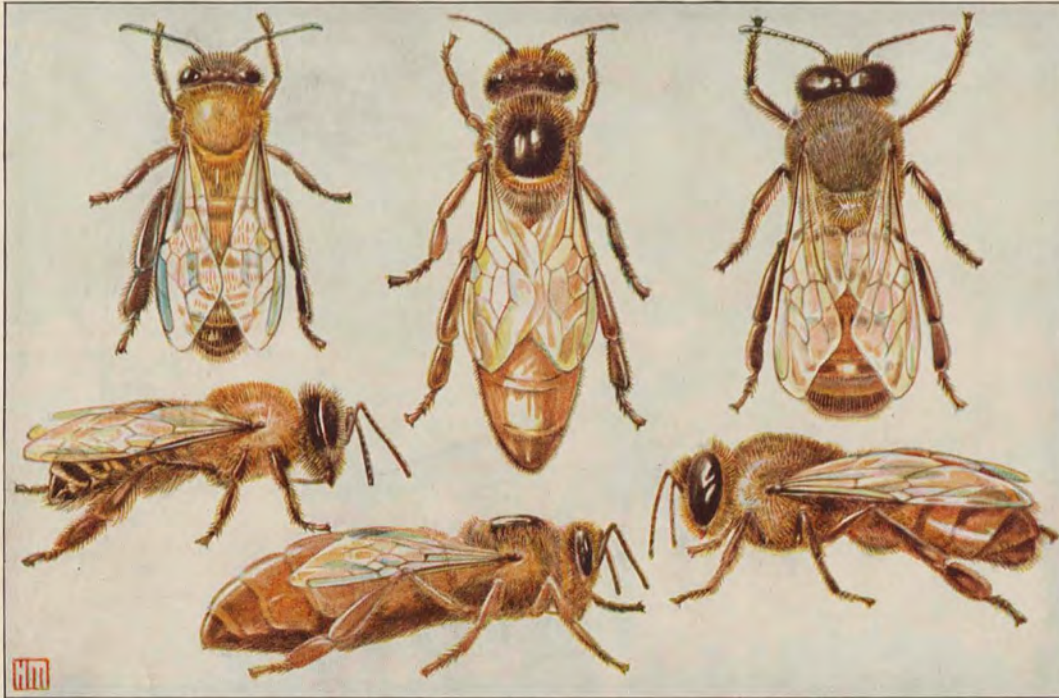
Wings tattered and torn, golden hair gone from its body, this aged black, but once yellow bee is about to expire. The gray bee (right) is an immigrant from the Caucasus Mountains, the yellow ones being from Italy. Both kinds are thoroughly at home in the United States.

The third group of which the colony is comprised is the drones. Because of mistaken conceptions the word drone has become, in English, a synonym for laziness and worthlessness. However the truth of the matter is that the drone has his purpose.

The drone arises from an unfertilized egg, of which a number are laid just before swarming so that the new queen may be successful in finding a mate on her mating flight high in the air. This, then, is the reason why more than one drone is permitted to live: since the queen bee makes only one mating flight, obviously there must be a relatively large chance that she will meet a drone to insure perpetuation of the colony. These male honeybees are entirely dependent on the worker bees, being unable to gather their own food and, having no sting, being unable to defend their homes.

Altogether the drone has a very unsatisfactory life, for immediately after mating he dies and the rest that were unsuccessful in finding a queen are driven from the hive to perish.

Honey bees are often referred to as domesticated bees in a manner similar to the way that we refer to farm animals. This is entirely incorrect, for the bee that is alive today is just as wild as his ancestor was a thousand years ago. If we go back and look at the organization of the colony we can see why this is so. The queen and the drones, who are the only bees that have any part in reproduction scarcely ever come in contact with the outside world and so have no need to adopt themselves to new situations. On the other hand, the worker bees who do have new experiences, have no



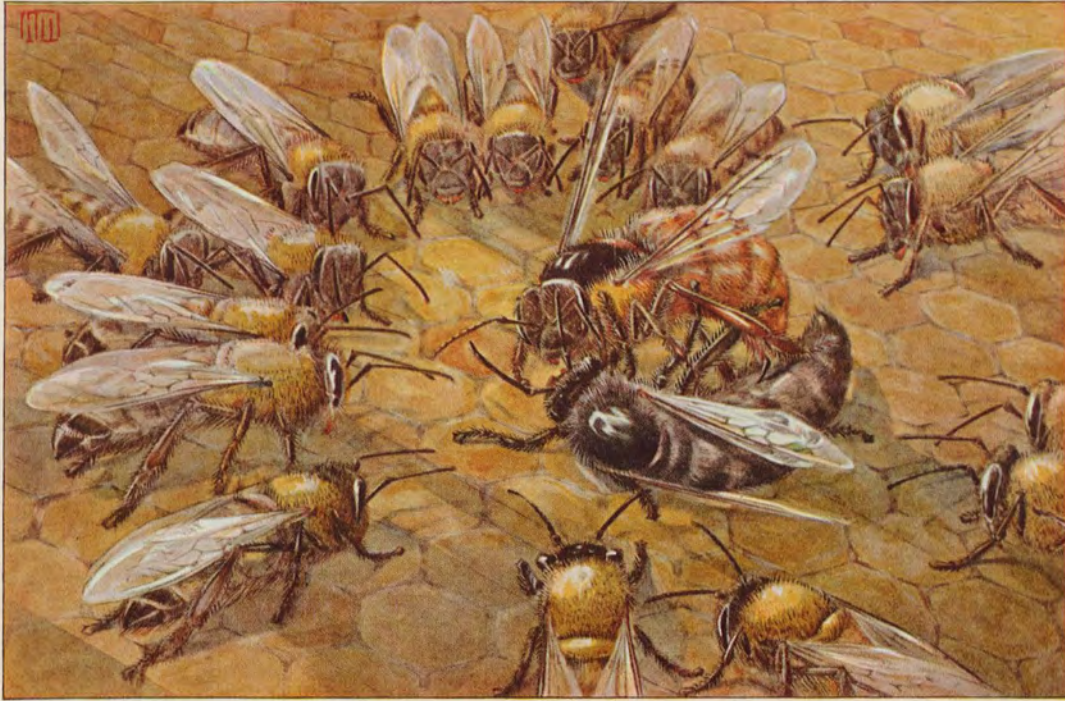
THREE KINDS OF HONEYBEES ARE FOUND IN A COLONY

The mother of all bees in a hive is the queen (center), whose long body is more graceful than that of her children, worker (left) and drone, or male (right). All figures three times life-size.

offspring and so have no opportunity to pass on to future generations any adjustments that they might have made.

The apiarist recognizes the fact that his bees cannot be domesticated and in his work he makes use of his knowledge of their habits. He knows that bees will not kill each other and that his hives are protected by a few guards that can be easily disarmed with a little smoke. He also knows that bees in general do not sting in self defense, but only in defense of the hive and that a worker bee can be plucked from a flower and safely held in the hand if it is not excited or crushed.

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WORKERS TAKE RINGSIDE SEATS AS TWO RIVAL QUEENS FIGHT TO A FINISH

In such struggles for supremacy, the battle is interrupted by the onlookers only when it appears both may die. Here a golden Italian queen is about to sting to death her darker adversary below, a gray Caucasian. Should their own mother be killed, bees will readily accept the new queen.

Thus, the busy bee which is commonly considered to be a pugnacious insect and which is to be left alone with his evil desires for stinging people has many gentle characteristics and really knows how to live not only with his fellow kind but also with the other creatures of his environment.

SUMMARY

The common honeybee has one of the best organized civilizations in the world today. Like most animals, bees live in groups or colonies and in each colony the three types of bees, queens, workers and drones each have a specific duty in maintaining the hive.

The queen may be said to be the mother of the entire colony because it is she who lays all the eggs which eventually grow into bees. Worker bees do all the work around the colony, even to feeding the drones or male bees.

Because it is impossible to domesticate bees those alive today are just as wild as their ancestors were thousands of years ago, and yet the honeybee has certain traits which could easily serve as ideals for mankind.

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