

8/14/82



Natural History Notes

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BUMBLEBEE



The largest and most imposing of our bees is the bumblebee. The bumblebee is one of two groups of social bees found in the United States, the other group being the honeybees. The bumblebee is quite distinctive in appearance, having a relatively large black body with brilliant red, orange or yellow markings. The body length of the various species of bumblebees ranges from 1/2 to 1 inch. Bumblebees can and do sting but are really not too aggressive. They are found almost worldwide but are most common in the temperate zones.

In the springtime the fertilized queen bee will come out of hibernation to start the annual cycle of the bumblebee colony. She starts by going on an eating binge, allowing her ovaries time to completely develop. Meanwhile she's searching for an appropriate nesting site. She typically selects an abandoned field mouse nest or similar hole in the ground and remodels it to suit her needs. She lines the inside with soft grasses, constructs an entrance tunnel and perhaps enlarges it. After this preliminary work is out of the way, she's ready to get down to business. The queen bee constructs a shallow cup approximately 1/4 inch in diameter on the floor of the nest using wax she has produced. The wax is secreted from her body in thin scales around the abdominal area. She removes the wax using her legs and works it with her jaws to form the egg cell. Into this egg cell the queen bee places a ball of pollen. The eggs are laid on top of the pollen ball and a wax covering is put on the entire structure. In the meantime the queen bee has built a "honeypot" near the entrance of the nest. This 3/4 inch high by 1/2 inch wide cup, also made of wax, contains nectar for her and her newly emerged young to feed on. After this is all finished, the queen

bee then proceeds to incubate the eggs. This is something you might expect from a bird but rather strange for a bee to do. The eggs hatch in less than a week into larvae, turn into pupae and finally emerge as worker bees in about three weeks. Workers are female bees which generally are incapable of producing eggs. After hatching, the workers take over the chores of the colony, allowing the queen bee to devote most of her time to laying eggs. By the end of summer the colony may contain 100 to 400 worker bees.

Of the workers, the larger ones generally do more pollen and nectar gathering and the smaller ones do more of the nest work. Nest work includes construction of new egg cells and feeding the young. After the pollen ball originally deposited in each egg cell has been used up, a worker will open up the cell putting into it a regurgitated liquid for the larvae to feed on.

Towards the end of summer, some of the workers may lay eggs which will become drones. These are males whose only purpose is to fertilize future queens. Other larvae are fed an especially rich diet. These individuals will become "princesses" which, if fertilized, will be the queens of new colonies.

As winter approaches, members of the colony start to die, mating takes place and the fertilized females hibernate. They will emerge the following spring to start the whole process over again.