

day and all aimed at building by cooperation a prosperous colony for the next generation. There are three classes of bees: the queen, whose chief duty is laying eggs from which young bees hatch; the workers, who collect honey, feed the queen and the young, clean the hive, build honeycomb, guard the city against enemies and act as an air-conditioning and heating plant; and the drones, or males, huge, lazy individuals who sleep on the flowers all day long and eat the honey that the workers have collected. They are useful only as mates for the queen to enable her to produce more workers.



*A New Jersey Apiary*

Courtesy P. L. Holcombe

During the spring and summer months, the queen searches all day long for empty cells in which to lay her eggs. Eggs laid in small cells develop into workers in 21 days; in slightly larger cells she lays the eggs that in 24 days become drones; and in the largest chambers are the six or seven eggs that in 16 days will be queen bees. These eggs when hatched into grubs (larvae) are fed exclusively with "royal jelly," a substance secreted from glands in the heads of the worker bees assigned to care for the eggs. The grubs which are to become workers are fed honey as well as a small amount of "royal jelly." After being fed for five or six days, the grubs go into the cocoon stage from which they emerge as adult bees.

Between 1,500 and 2,500 young bees hatch each day during the early summer, and the hive becomes prosperous and overcrowded. When this happens (during the middle of June, usually) the old queen leads about two-thirds of the colony to a new home. Beekeepers call this "the swarm." Each worker who is to leave gorges herself with honey enough to last until the new dwelling is completed. Suddenly, thousands of bees fly from their hive and alight on the limb of a nearby tree while scouts are sent out to search for a suitable home. The beekeeper takes advantage of this natural halt. The bees are quiet, and he can easily shake them into an open hive.

A new colony is founded. Bees, left to themselves, build their own perfectly shaped honeycomb cells of wax secreted from glands on their abdomens. In the removable frames, however, the beekeeper has provided beeswax foundations for the honeycombs. The markings for the cells embossed on the foundation are the proper size for worker comb, and the bees will follow this pattern.

Meanwhile, what is happening in the parent colony which the swarm has deserted? Soon a queen is born, kills the other still unborn queen bees and rests for a few days until she grows strong enough to mate. The young queen then retains within her body the male seed which will fertilize her eggs, and the worker bees band together to slaughter the useless drones.

The queen is usually restricted to the brood chamber by a layer of wire mesh with holes too small for her to pass through. The worker bees, however, can work into the upper sections, or "supers," easily. The supers are in this fashion reserved for pure honey and never used for breeding.