

Raising Bumblebees

For Fun, And Maybe Profit!

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When people think of beekeeping, they usually think of white wooden boxes – reminiscent of filing cabinets – filled with frames of golden honey. Neat, clean and sweet, honey bees have been raised in the United States since Colonial times when they were brought over from Europe by our earliest settlers. However, because of *Varroa* mites beekeepers are looking for alternatives to supplement their income.

of the Summer. New reproductive females and males (queens and kings) are produced in late Summer. The queens and kings mate on the wing, and the fertilized queens find places to hibernate for the Winter (loose bark, hollow trees or burrows in the ground). A chemical in the queen's body, almost like antifreeze, keeps her from freezing in the frigid Winter months. The remaining bees in the colony die when the first hard freeze hits.

Introducing the Humble Bumble Bee

Bumble bees (of the genus *Bombus*) may not be glamorous, but they are miraculous. Native to North America, bumble bees are industrious and efficient pollinators. Flitting from flower to flower, the queens gather nectar and pollen, and in the process pollinate the plants. Their large, fuzzy bodies are the perfect design for picking up large amounts of pollen and their "buzz" shakes it off onto the flowers (also known as sonication).

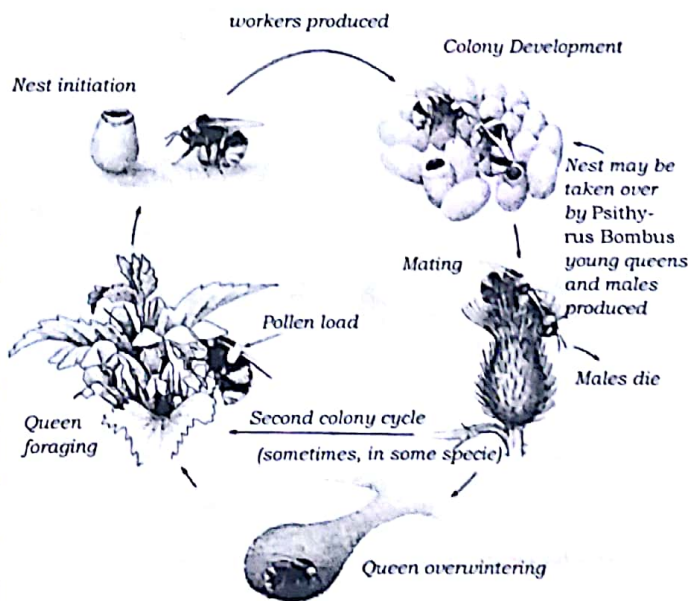
After spending the Winter underground, queens emerge in the early weeks of Spring and look for a nest site. Nesting sites are typically abandoned rodent nests (mice, rabbits, gophers), but they will nest almost anywhere close to the ground and protected from the elements. When a queen finds a suitable nest site, she will line the cavity with moss or dry grass, and then collect nectar and pollen to produce a food called "bee bread." She uses this blend of pollen and nectar to build the nest and feed the young. The first brood of offspring will all be female workers (five – 20) who then take responsibility for nest growth, food gathering and storage, and caring for the next developing brood.

The queen is then free to lay eggs for the duration

Raising Bumble Bees

Beekeepers should find it fairly simple to start their own bumble bee hives. According to the book, *Befriending Bumble Bees: A practical guide to raising local bumble bees*, written by Elaine Evans, Ian Burns and Marla Spivak, there are five steps to raising a hive.

- 1.) Catch a local mated queen.
- 2.) Place the queen in a small box with a pollen ball and nectar.
- 3.) Once there are eggs, continue to provide fresh pollen every few days so the queen can feed the larvae.
- 4.) When workers emerge, transfer (or transform) the colony to a larger box. Continue to supply pollen and nectar.
- 5.) Once colony population exceeds 20, the colony can be opened to the outside.



Elaine, Ian and Marla have had consistent success with *Bombus impatiens*. They used a starter box with the dimensions 2.5 x 5 x 3.5 inches. One-eighth inch hardware cloth (a stiff metal mesh screen available at most hardware stores) is used for the top and bottom of the box. The sides are made of wood. The door is made of metal and slides to allow access to the inside of the box.



Queen and workers.



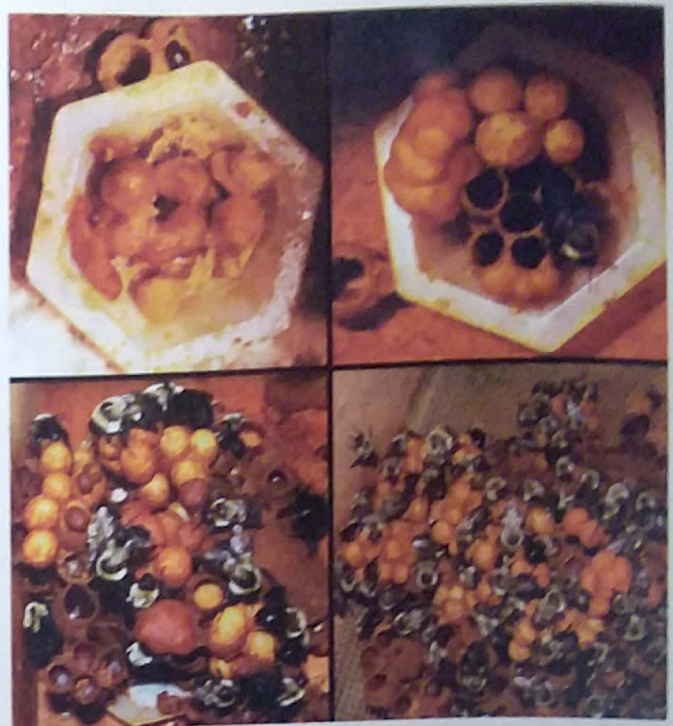
Nest box showing plexiglass top and tweezers for holding adults.

There is also a clear inner door (plexiglass) to facilitate observing the hive. The inside of the box is split into two sections; a food area and a nesting area, separated by a piece of wood with a hole for the queen to move between the two sections.

When the first clutch of workers has emerged, the brood is moved to a larger wooden box, dimensions 9 x 12 x 7 inches. The bees can be picked up by their hind legs with tweezers, but be gentle with the queen – without her – there is no hive. The bees enter and exit the box through a piece of plastic tubing large enough for two bees to pass, kind of like a two-lane highway.

Bumble bees seem to do well in a dark environment with 50% humidity and an average temperature of 70°F. Some light during the day doesn't seem to bother them, but try to mimic the natural conditions of the nest.

Feeding the bees will most likely require a visit to the friendly neighborhood beekeeper (unless, of course, you are the beekeeper). One half pound of pollen per colony should keep the bees happy until they are foraging on



Colony development over time.

their own. Mix fresh pollen with a sugar solution (nine cups water to six cups high fructose corn syrup or 1:1 sugar solution) to form a stiff dough. Then roll the dough into a cylinder shape about half an inch thick. The pollen balls should be about the size of a pea. A growing colony should need an amount of pollen equal to roughly one third of the size of the brood each day.

There are a few national commercial producers/sellers of bumble bees for pollination, but keeping and selling your own bumble bees locally decreases the chance of transporting diseases or parasites. It also ensures that the bees are adapted to the climate and vegetation.

The advantages to raising bumblebees are:

- Bumble bees are not aggressive. They only sting if threatened. And the males don't have stingers.
- Bumble bees are active in windy and cloudy conditions and at low temperatures (41°F).
- Bumble bees do well in greenhouses, so rent or sell them to your local nursery (added revenue).
- Bumble bee hives have a finite life ending at the first hard frost (no over wintering care or cost).

Until such time that the honey bee population rebounds, raising and selling bumble bees is a cost effective alternative. Bumble bees don't seem to be affected by *Varroa* mites, and as long as there are crops and wild flowers to sustain them, raising them should be an enjoyable and revenue producing endeavor. **BC**

For more information:

- *Befriending Bumble Bees: A practical guide to raising local bumble bees* is available through the University of MN Extension Store <http://shop.extension.umn.edu/PublicationDetail.aspx?ID=1902> Phone: 1-800-876-8636
- *Befriending Bumble Bees website* www.befriendingbumblebees.com
- *Beekeeping forum* is available at <http://forums.gardenweb.com/forums/bees>
- *How to build a bumble bee box* at <http://tomclothier.hort.net/page38.html>