

For those getting buzzed about backyard beehives, there is no question. Beekeeping is great for the garden, and the golden harvest is ambrosial

TO BEE or not to bee

by Roberta Staley

“Just don’t swat,” John Gibeau says casually, but with an emphasis that hints agitated hand waving might be regrettable – painful even.

Garbed in heavy white overalls, Gibeau strides among a dozen irregularly stacked beehives – rectangular wooden boxes scattered like the building blocks of a giant baby. His balding pate is tanned from exposure; beekeepers normally wear a safari-type hat with a heavy veil that drapes to the chest, but the dozens of flitting bullets filling the air with an electric hum know Gibeau by his scent and blithely whiz around him. “I rarely get stung,” shrugs Gibeau, president of the Honeybee Centre, located in the heart of Surrey farmland.

Gibeau is grasping the handle of a metal smoker, reminiscent of a hobo’s billycan, which is stuffed with smoldering burlap emitting a pungent black smoke. A smoker, explains Gibeau, is a key tool of bee husbandry, deterring attacks during hive inspections and cleanings, and during honey collection. The carbon wafts fool the bees into thinking a forest fire is close by and, instead of protecting the hive by stinging, they prepare for evacuation, filling their bellies with honey. If the bees were fleeing a real fire, the honey would sustain them long enough to find a safe site for a new colony. Gibeau places the smoker beside one of the rectangular 50-cm-long (20 in.) hives, grabs the lid and lifts out one of several “frames,” each an amber crocheted of six-sided hexagons as precise as an architectural blueprint. Some frames constitute the hive’s larder, plump with energy-rich honey derived from flower nectar and protein-rich pollen for feeding the growing brood. Other frames constitute the nursery, where eggs and larvae, each cozily ensconced in an individual cell for up to three weeks, grow into a new generation of fuzzy, yellow-and-black Lilliputian pollinators.

Bees are ancient; their highly complex, cooperative social structure – a perfect matriarchy composed primarily of female worker bees, an egg-laying queen and some male drones for breeding – developed 30 million years ago during the age of dinosaurs. Honeybees belong to the order of insect known as Hymenoptera, or “membrane wings,” that includes more than 25,000 species, most of whom are solitary bees. There are five species of commercially farmed honeybees.

Cave drawings indicate that humans began collecting honey about 8,000 years ago. Pottery jars of still-edible, 3,000-year-old honey have been found cached near Egyptian mummies in pyramids. But it isn’t just the sweet, liquid honey that so endears bees to people. The wax from hives – sunny yellow and with a heady, sweet scent – has long been coveted. During medieval times, bee-wax candles were so expensive that only royalty and the church could afford them. (One of the oldest guilds in the world is the Wax Chandler Guild.) Peasants made do with acrid, foul-smelling animal-fat candles.

Later, when Europeans first began immigrating to

A hive of bees must travel a total of 90,000 km (55,000 mi.) and tap two million flowers to produce one pound of honey.



Harvesting Honey

Collecting a golden harvest from the hives is a relatively simple process:

Bees are removed from honey “supers” (hive frames placed above the brood chamber and containing only honey) by using a bee escape that allows the bees to move out but not back in. Other common techniques include brushing the bees from the frames, smoking them out or blowing them out using a bee blower.

Wax cappings on the comb are then scratched away to reveal the honey inside.

The frames are now placed in an extractor that whirls the honeycomb at high speeds against its walls. The honey drains down the walls and is poured from a spout at the bottom of the extractor.

The honey is then allowed to settle, enabling impurities to float to the top. Any excess wax is also filtered out as the honey is poured through a series of graduated filters.

It's now ready to be bottled!

Bees fill perfectly formed hexagon honeycombs with energy-rich honey, derived from flower nectar and protein-rich pollen, for the hive during winter. European honeybees, *Apis mellifera*, produce such an abundance of honey that humans can harvest the excess.



North America in the 1600s, honeybees – *Apis mellifera* – were brought over as well. Native Americans called them the “white man’s fly.”

The 20th century saw the family farm elbowed aside by large-scale, corporate, industrial farms, and beekeeping morphed into a horticulture business vital to rich crop yields. In the process of gathering nectar and pollen for their hives, bees transfer pollen grains from male plant parts to female plant ovules. Although many plants can self-pollinate their own flowers, cross-pollination by bees is highly beneficial to the overall vigor of a species and often results in more seeds, fleshier fruit and stronger seedlings.

In Canada, \$1 billion worth of crops depend upon bee pollination, and in the United States it's \$14 billion, according to bee expert and author Mark Winston, who teaches the Bee Masters program at Simon Fraser University



in Burnaby. American almond growers truck in about half-a-million hives to their orchards every year, while New York apple growers fill their orchards with 30,000 hives. In B.C., blueberry farmers are dependent upon bees

to ensure a bountiful crop; bees also pollinate the province's luscious hothouse tomatoes.

It isn't just commercial fruit growers and farmers who depend upon bees; urbanites are also getting a buzz on, setting up hives in their

Bee Poison

The urban gardener should be aware that good bee husbandry includes finding alternatives to toxic chemicals. Soap and water can be used instead of the popular diazinon and malathion, which kill not only aphids, but also bees. Nontoxic insecticides include products that use pyrethrum or neem. Pyrethrum is a natural compound found in some chrysanthemum species (*Tanacetum*) that controls mites, stinkbugs, whiteflies and aphids. Neem, derived from an Indian tree (*Azadirachta indica*), acts as an insect repellent but is also nontoxic to bees. Varroa and tracheal mites, which have decimated honeybee populations around the world, can also be controlled using formic acid. Caution should still be exercised; these substances are harmful to bees in high dosages.

backyards. Gibeau, who wrote the bylaw in New Westminster for beekeepers, holds six-week, \$200 courses on bee management – called *Apiculture* – to teach neophytes about hive equipment, disease prevention and harvesting

honey. For about \$250, Gibeau also sells “starter kits,” a 3,000-strong colony headed by a single queen bee, “just like at home,” quips Gibeau. His stock mainly consists of the common Italian honeybee, *Apis mellifera ligustica*,

which is docile and adaptable to most climates.

Numerous municipalities in the Lower Mainland have a bylaw that allows beekeeping. Last fall, the City of Vancouver considered a beekeeping bylaw to complement a sustainable



Making Herbed Honey

To add the essence of herbs to your honey, gently heat honey and stir in dried herbs such as lavender or thyme. Turn off the heat and let steep for one to two hours. Reheat and strain through cheesecloth to remove all herb bits. Pour into decorative jars, label and enjoy. Or, even quicker, place fresh bundles of herbs of your choice into honey and infuse overnight.

urban food production policy that encourages city dwellers to grow more fruit and vegetables. However, it did not pass due to reluctance to manage the activity, says Allen Garr, beekeeper for VanDusen Botanical Garden and UBC Botanical Garden. The new bylaw would have legitimized the hundreds of Vancouver beekeepers who, for years, have quietly indulged in this backyard hobby.

There is good argument for encouraging beekeeping in urban centres: Rural farmers tend to cultivate only monocultures – growing a

single crop over hundreds or thousands of acres – and use herbicides and pesticides. According to the bee-lover's bible, *The Forgotten Pollinators*, overuse of chemicals is linked to the extinction of bumblebee species in Britain, and other species are in decline. (A worldwide mite infestation has also reduced bee populations.) Urban centres like Victoria and Vancouver that may ban pesticide use could thus become oases for bees, which plumb the Eden of wild and cultivated flowers growing in gardens, flowerbeds, in parks and on fruit trees.

Bees will forage a three-kilometre (1.8 mi.) radius around a hive, gathering pollen and nectar from neighbour's gardens, fields and parks, says Gibeau. An average hive of 40,000 to 50,000 bees will yield 90 kilograms (200 lb.) or more of honey annually, which can be sold for \$5 a pound, Gibeau adds. The taste varies. Honey can be imbued with essence of raspberry, blackberry, pumpkin, clover, blueberry, fireweed or buckwheat, depending upon which fields and crops the bees mined for nectar. Honey has distinct hues as well, ranging from 24-carat gold to dark oak. (B.C. beekeepers can enter honey and beeswax in competitions.) Honey can be harvested from a hive at least three times a year, although a sufficient store must be left for the inhabitants to survive the winter. From October to mid-February, the bees live off carbohydrate-laden honey. After mid-February, the maturing brood of larvae consumes the protein-rich pollen. A Lower Mainland beekeeper can usually resume harvesting honey in May. Beekeepers in the interior of B.C. can start harvesting in June, while those in northern B.C. begin in July.

Phacelia tanacetifolia (purple tansy) is a cover crop that attracts bees from miles around. Turn to our Garden Planner on page 24 for expert advice on bee-friendly perennials to plant.



Doctor Bee

Many people are looking to preventative and alternative medicine as a way to fight disease, with focus on the beehive as a medicine cabinet as well as a source of honey. Apitherapy (*api* is Latin for bee), which has been practiced for more than 5,000 years, includes nutritional supplements and treatments for ailments ranging from ulcers to dyspepsia, autoimmune diseases and anorexia. The beehive also provides antifungal, antiviral and antibacterial treatments. The following are a few examples of beehive-derived therapies available at many alternative medicine outlets. (Source: Honeybee Centre.)

Propolis

Bees create propolis from a mixture of leaf buds, resin, wax, honey and enzymes from saliva to sterilize the hive and seal cracks and openings. Propolis acts as an antibiotic, anti-inflammatory and antioxidant and is used for colds, flu and infections.

Honey

The gluconic acid in honey acts like hydrogen peroxide and is now in use at some hospitals in England and New Zealand to clean wounds.

Bee Pollen

The pollen collected by bees is rich in B-complex vitamins and provides fatty acids and other nutrients. It provides energy and helps reduce the symptoms of hay fever.

Bee Venom

Venom is used in the treatment of autoimmune diseases such as multiple sclerosis, gout, arthritis and fibromyalgia. It also kills warts.

Royal Jelly

Bees secrete this substance to feed queen larvae and queen bees. It increases mental clarity and is used as a multivitamin and to treat sexual dysfunction in women.

After visiting an average of 50 to 100 plants on each collection trip, a bee returns to the hive heavily coated with pollen.



Beekeeping, besides being a means of having delicious and natural food for the table, is one of the ways to become a custodian, rather than exploiter, of the earth – a sweet gesture toward the world and the creatures in it. ■

Roberta Staley is a Vancouver-based award-winning magazine writer and editor whose work has appeared in such publications as Vancouver magazine, Georgia Straight, BCBusiness and Alberta Venture. However, she counts To Bee Or Not To Bee among her sweetest assignments.

PHOTOS page 42 ImageSource; Terry Guscott: herbed honey and purple tansy; all others: Janis Nicolay; Styling: Heather Cameron