Spring Bees

Now that you've rolled out the anything-but-red (because, remember, bees can't see red!) carpet on your garden, who might be some of the earliest arrivals?

Bumble bee queens (genus *Bombus*), emerging from a long winter's hibernation, are often the first bees to appear in spring. These royal visitors will need to find immediate and abundant forage, not only for their own vital nourishment, but also to provision new nests for their first round of offspring. Depleted as they may be following hibernation, bumble bee queens are easy to recognize by their relatively large size – often exceeding a full inch. Look for these robust, furry females on spring-blooming plants such as *Ceonothus*, manzanita or bearberry, redbud, lupine, *Phacelia* and California poppy.

Newly emerged bumble bee queen foraging on spring-blooming manzanita. Photo by Celeste Ets-Hokin.

Mining bees (genus *Andrena*) represent a large, diverse group of ground-nesting bees. Many of these small to medium sized, darkly colored bees, are among the earliest species to emerge in spring. Some are known to gardeners by their habit of nesting in lawns! The females have very noticeable scopae (pollen–carrying hairs) on their hind legs, and when they forage on flowers such as *Phacelia*, which have purple pollen, their entire hind leg appears to be purple.

Many species of *Andrena* are excellent pollinators of fruit trees and shrubs such as plum, cherry and blueberry. Look for them also on *Phacelia*, figwort, wild geranium and willow.

Andrena nigrocaerulea with purple pollen.

Andrena auricoma with Phacelia.

Andrena auricoma emerges around the time that Scrophularia californica (figwort), a preferred nectar source, is in bloom. Photos by Celeste Ets-Hokin.

Digger bees (genus *Anthophora* and genus *Habropoda*), as their name suggests, include several genera of rather robust ground-nesting bees. Both *Anthophora* and *Habropoda* species tend to be quite hairy, with especially dense hair on the thorax. Color combinations are typically, gray, tan and black. Female digger bees usually have quite prominent scopae, so they are easy to distinguish from the males.

Habropoda female showing scopa.

Male Habropoda showing lack of scopa.

Photos by Celeste Ets-Hokin

Some species of digger bees are known to nest closely together, as is the case with our community of *Habropoda depressa* at Lake Merritt in Oakland. Look for small holes in flat ground, sometimes surrounded by little mounds of dirt, or tumuli. Males will fly back and forth over the nest entrances, waiting for females to emerge.

Habropoda laboriosa (southeast blueberry bee) is a specialist on the flowers of rabbiteye blueberry, and an important commercial pollinator of this plant in the east. A number of *Anthophora* species are early spring bees, and in the West are often found foraging on manzanita, currant and sage.

Anthophora pacifica female on Ribes. Photo by Celeste Ets-Hokin.

Mason bees (genus *Osmia*) are important orchard fruit pollinators and are abundant in spring when the flowers of plum, cherry, almond, peach and apple are blooming. In fact, *Osmia lignaria* (blue orchard or orchard mason bee) is being used increasingly to pollinate commercial orchards. Mason bees are typically wood tunnel nesters, and will often readily adapt to artificial tunnel nests consisting of bundles of hollow stems or tubes – even the ones you place in your backyard!

Osmia species can be fairly easily distinguished from other spring bees by their coloring. They are typically metallic dark blue or green, with relatively little body hair. As members of the family Megachilidae, they are also distinguished by a feature shared by all the genera in this family (which includes leafcutter and carder bees): the females carry pollen in a scopa (brush of specialized hairs) on the underside of the abdomen, instead of on the hind leg, as is typical for most other female bees.

Female Osmia on Lupine showing pollen on abdomen. Photo by Rollin Coville.

Besides orchard fruit blossoms, look for Osmia on redbud, sage, Phacelia and catmint.

Osmia on Phacelia.

Osmia in flight.

Mason bee nest block at Full Belly Farms. The orchard mason bee (Osmia lignaria) is a superior orchard fruit pollinator, and will readily nest in man-made nest blocks.

Photos by Celeste Ets-Hokin.

Large carpenter bees (genus *Xylocopa*) are large, robust bees that are often confused with bumble bees. However, unlike bumble bees, carpenter bees have relatively little hair on their abdomens, which can consequently often appear shiny. Males of several species have lighter coloring than the females, making it very easy to tell the sexes apart.

The male carpenter bee (Xylocopa tabaniformis) has light brown hair covering the thorax, and his eyes are blue-grey. Photo by Celeste Ets-Hokin.

The female (Xylocopa tabaniformis has black hairs on the thorax and black eyes. Photo by Rollin Coville.

While there are 9 species of *Xylocopa* in North America, only 5 have a significant range, and there are regions in North America, particularly in the north, that do not have any representative species. *Xylocopa virginica* is the primary species found in the east, while *Xylocopa tabaniformis*, *Xylocopa varipuncta and Xylocopa californica* are the dominant western species. Spring is the mating season for many carpenter bees, and if you have them in your area, they're rather hard to miss. The robust males put on quite the territorial display, which includes much darting, hovering, circling, buzzing and swooping. However, like all male bees they have no stinger, and so despite their bravado, are harmless to humans.

Despite their large size and occasional swooping displays and loud buzzing, male carpenter bees are harmless to humans. Like all male bees, they lack a stinger. Photo by Rollin Coville.

The females of *Xylocopa* species have powerful jaws which they use to excavate their nests in solid or rotten wood – redwood structures are a particular favorite. Females are also able to buzz-pollinate the blossoms of certain plants, vibrating their wings to release pollen from deep pores in the anthers. But despite their formidable size and considerable carpentry skills, these bees are quite docile. There is a sizeable colony of *Xylocopa tabaniformis* that has claimed the rights to a 7 foot bush of *Salvia melissidora* in my backyard, and it is a delight to watch them all spring and summer long.

Female carpenter bee (Xylocopa tabaniformis) foraging on Salvia melissidora. Photo by Celeste Ets-Hokin.

Carpenter bees have long tongues, often preferring to forage on deep tubular flowers such as salvias, penstemons, lupines and redbud. However, since most are active from spring through early fall, they are generalists, and will forage on a broad range of seasonal plants. Taken together with the female carpenter bee's ability to buzz-pollinate certain types of flowers, these generalists are valued as excellent pollinators of numerous crop plants.