

Yellow Faced Bumblebee (Bombus vosnesenskii)

Bee Family

Yellow Faced Bumblebees are the familiar, fuzzy, black and yellow bumblebees of town and country. In spring, they are everywhere, everywhere the flowers are. On clover, they will land and stick in their long tongue for some nectar; on poppies, they feverishly scurry around the center, packing pollen in their baskets. Wherever they land, they make it quick and move on, visiting up to twenty flowers in a minute. Bumblebees totally depend on flowers; their entire livelihood comes from nectar and pollen. In the process, they pollinate hundreds of flower species.

Yellow-faced Bumblebees are true-blue Californians, living throughout the California Floristic Province and Sierra Nevada, and up the coast into Washington State. They are very docile and rarely sting, except to defend their hive. Part of their name comes from the yellow fuzz that covers their faces. The other part, Bumblebee, imitates their sound; bee for the buzzing and bumble, an old English word for humming, for the loud, bass humming of their flight.

Bumblebees have lived on the earth for 60 million years, and they have evolved into highly social creatures. They are mostly bees of cool, northern climates, living in small, decentralized colonies. Unlike the more tropical oriented Honeybees, whose large hives operate year-round, for many years, Bumblebees start anew each spring. They build hives that, like many wildflowers, are annual, lasting only one season. They nest underground, often in an abandoned gopher hole. They will make their hive in Gopher's grass-lined burrow, crawling to and from the surface through several feet of tunnel.

Unlike most other bees and insects, who depend on the sun to warm their bodies, bumblebees have evolved the unusual ability to thermoregulate, to heat and control their body temperature, enabling them to fly and feed in cool, northern-style weather. They generate heat by shivering, by moving their wing muscles at flight speed, but with their wings motionless, much like racing a car in neutral to warm the engine. When their wing muscles reach about 90 degrees, they can take off and fly, regardless of the weather. So they are out foraging from dawn to dusk, and on foggy days. Their dense fur insulates them, and they can keep this heat in their wing muscle area, flying very economically with warm thoraxes and cool abdomens.

They heat their nests the same way. Heat promotes rapid egg and larvae growth, which is critical to completing the hive cycle in the few months when there are enough flowers. To warm the young, bumblebees once again shiver their wing muscles, except this time the heat is sent via the blood to the abdomen, which is nearly hairless underneath. The bees will straddle and warm their brood just like a chicken on her eggs.

In early spring, you may notice a few, large, solitary bumblebees, nearly the size of flying mice, out and about. They are the queens, just emerged from hibernation. They are fertile, having mated the year before, and they are gathering nectar and pollen to start a colony. If successful, it will grow in several months time to a hive of fifty to several hundred individuals. Besides the fertile queen, there are workers, the smaller, infertile females, and eventually larger queens-to-be, and males.

If you are the queen, you set up house with a few essentials: some honey pots, peanut sized open-top urns made from your body wax, pollen pots, and an olive-sized mix of honey and pollen, where you lay your first set of about ten eggs. After laying your eggs, your main concern is to keep them warm so they can quickly become workers to help with the hive. You set on your egg mass, sipping honey from the nearby pot, with your motor running. When the food runs low, you fly out to gather more nectar and pollen, but quickly, before the eggs cool too much.

When the first workers mature, in about twenty days, they will take over the foraging. You will then stay in the nest and lay eggs, while the workers feed and take care of you and the next, larger broods. For all of you, the strategy is to grow the hive fast, using nearly all the food to quickly build the numbers. The hive lives nearly hand to mouth, with just a few days honey and even less pollen on hand.

If you are a worker, your duties are threefold: gathering food, raising the young, and defending the nest. To gather food, you are up before dawn, out at the hive entrance, warming up. You may fly a mile or two to find the most productive flowers, but this is not hard since you can fly at ten to twelve miles an hour, a commute of ten minutes or less.

Eventually, you develop your own trapline, flower patches in an area maybe fifty by twenty yards, and learn to specialize in one or two flowers. For nectar, you have a long tongue to stick into those hard to reach places, and suck it into your honey crop, a large sack in your abdomen that can carry your own weight in nectar. For pollen, you will scramble around a poppy or a rose, and wetting the pollen with your saliva and packing it on special pads at the knees of your hind legs.

When you have a full load, you make a beeline back to the hive, regurgitating most of your nectar (which already begun to become honey) into the honey pots. This takes less than five minutes and then you are off again. You work until after sundown. Each round trip takes an hour or two, so you make up to nine trips a day.

To raise the young, you help incubate the eggs with your body. When they hatch, you feed them honey for energy and pollen for protein. In the early stages of the hive, you feed the larvae just enough food to grow to worker size, your own size. But towards the end of the season, you feed them more, so that a fifty or more will grow queen sized.

To defend the hive, you have a stinger, your modified ovipositor (egg layer) - you are female. If Yellowjackets come a-hunting, you will band together to kill or drive them off. If a skunk comes poking around your nest, smelling something sweet to eat, a bunch of you will swarm out and let him have it right on the nose.

You work around the clock, doing whichever task is most needed. You will live only a few weeks. But in that time, the hive will have grown much larger. There could be several hundred workers, with a hundred or more males and new queens on the way. As these hatch, the young queens may help for awhile with foraging and tending the young. But not the males. They are just interested in eating, and sex.

In late spring, as the dry season settles in, the young queens will fly up high up in the air, and the males will follow, to mate. They will couple abdomens and settle on the ground for a few minutes, while the sperm is passed. Soon the males, having done their part, will die. The mated queens will then burrow down to hibernate, not unlike the seeds of the poppies that feed them, waiting for rain and the warming days of spring.

Sixty million generations of Bumblebees lie behind each one of them, sixty million continuous cycles of a queen and her colony laboring to pass on their lives. On average, just one from each nest will be successful, and extend her kind for yet another year.