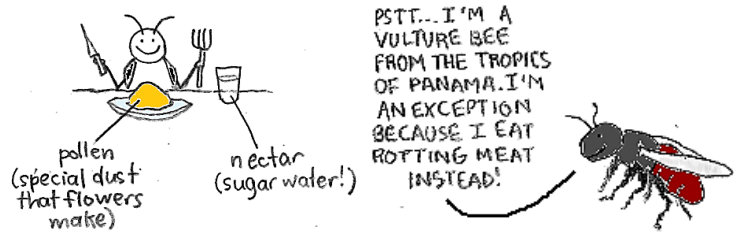


Bee Project Musing #2

July 20, 2018

Well it's been another exciting week of observing bees, scribbling madly in my notebook and capturing bees at work in my camera. Meanwhile, our pollinator friends have been hard at work buzzing and bounding from flower to flower in your gardens.

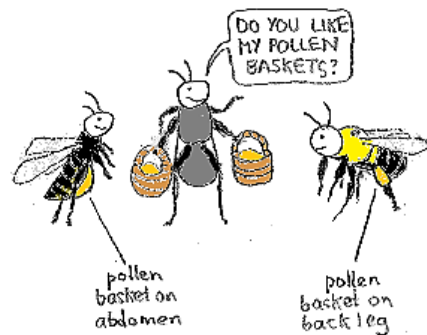
Most bees, from the newly hatched larva to the fully-grown adult, survive on a diet of two things: pollen and nectar. Pollen is high in protein, while nectar provides bees with sugar. This means that almost all bees are entirely dependent on flowering plants!



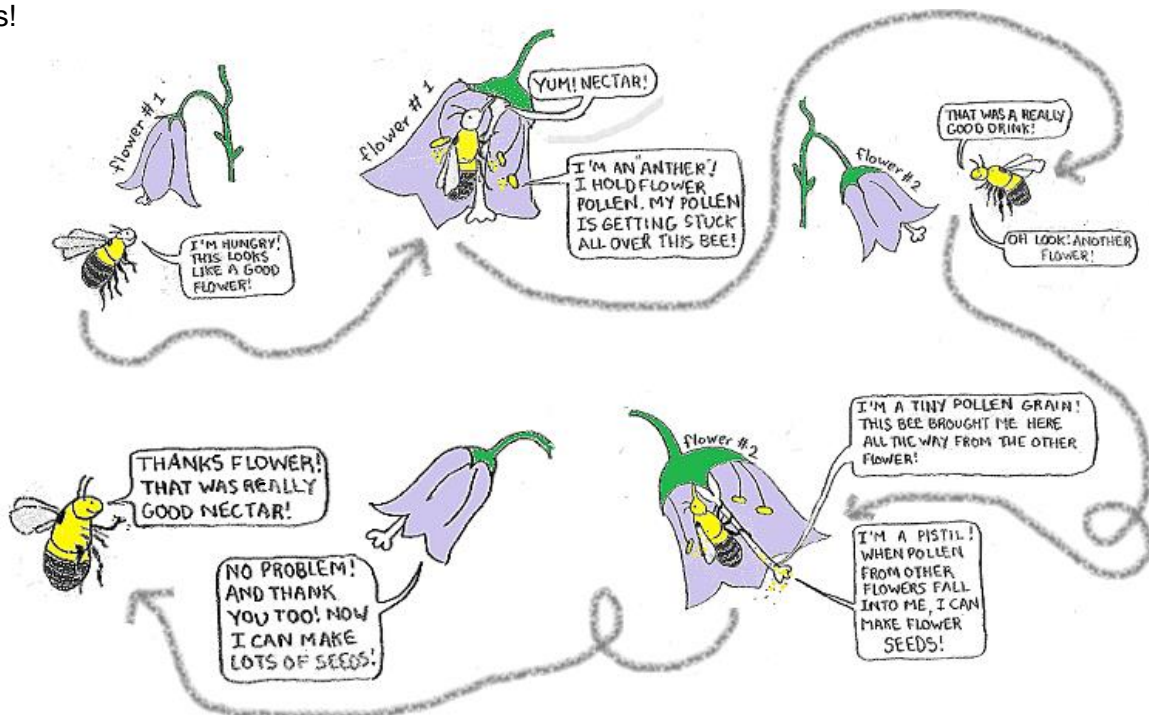
Many female bees have special structures on their legs or bellies called "pollen baskets" to carry pollen back to their nests. Next time you see a bee, take a look at it's back legs –you might see full pollen baskets!



[1] Mining bee (*Andrena*) and [2] Two-spotted Bumble bee (*Bombus bimaculatus*) with back leg pollen baskets



Bees use their straw-like tongues to suck up nectar from flowers. Glands that produce nectar are usually at the very bottom of the flower. This means that hungry bees have to reach all the way down into the flower to get their sugary snack! As they move through the flower to reach the nectaries, flower pollen sticks to the bee. Coated in pollen, the bees then move to the next flower for another nectar drink. Some of the pollen from the first flower rubs off on the second flower. And there we have it! Pollen is moved from one flower to another, and the flower is able to make seeds!



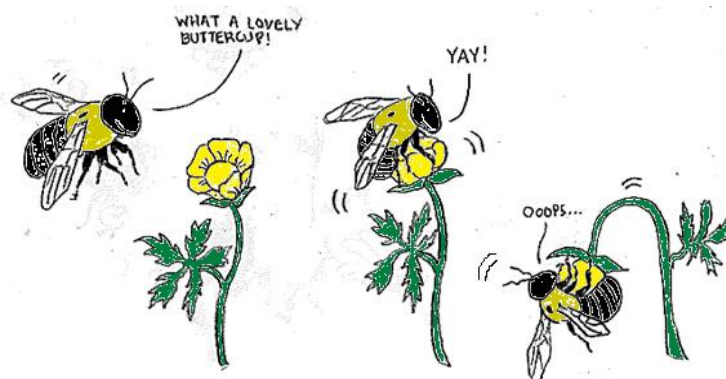
Sometimes, I like to think of all of this as a dance between the bees and the flowers. Different flower shapes, placements of nectar glands, bee sizes, and tongue lengths mean that there are many 'dance styles'. Generalist bees have many different dance partners and visit many different types of flowers. In one garden, I watched a Common Eastern Bumble Bee (*Bombus impatiens*) lap up nectar from a Sea Holly, stop for a visit at the Scarlet Beebalm, and then buzz off to forage in the Echinacea. That was three different dance partners in the span of a minute! Other bees are specialists because they like to stick to the same partners all the time. In many of your gardens, the Harebell Carpenter Bee (*Chelostoma campanularum*) only visits flowers from the bellflower family.



Certain 'dance steps' are more complicated than others. Some flowers, like tomato flowers release their pollen through a narrow tube only when the plant is shaken very quickly. Bumble bees are able to perform 'buzz pollination' by shaking their flight muscles so fast, that pollen comes shooting out of the flower! Now that's a neat dance move!



This summer, I've also seen some funny bee-flower 'dance moves'. In the Cedarvale Ravine (where I spend my time when I'm not in your gardens), I once watched a very **large** Virginia carpenter bee land on a very small buttercup flower. The poor buttercup wasn't able to support the bee's weight and flopped right over! Perhaps this was the carpenter bee's version of a tango dance?



Anyways, that's all for this week! I hope to tell you more in the coming weeks!

Lydia