

# Sechelt Garden Club

## Bees

***Kathleen Suddes Roberts Creek Honey***

***summarized by Cathy Hallet***

Who are the pollinators in your Garden?

Anything that creeps, flaps, slithers and crawls.....but tonight's talk will centre on Bees.

Bee History

Bees have been around for at least 74 million years. When flowers evolved, so did bees. They originated in Asia (not Africa which is a common misconception). *Apis Mellifera*, or the common honeybee, evolved about 22-25 million years ago. Nesting bees originated in Asia and spread to Africa and Europe.

Bee Basics

Brood Cycle Egg....Pupae....Adult

Bees are social insects. The hive consists of one queen – who can live up to five years – drones and workers. The queen can lay 1500 to 2000 eggs per day when at her peak. She is the only reproductive female.

The workers are all females and do all the work. They are full or half sisters. After birth their duties are: At 3 days, they clean cells; At 3-7 days, they feed larvae; At 7-14 days they secrete royal jelly; At 14-21 days they forage for pollen; At 18-21 days they guard the hive; At 21 days plus they forage for nectar. They typically only live for 6 weeks.



Honey Bee photo from Wikipedia

The drones are males who have no stinger....they gave it up to have a penis. The drones are made from an unfertilized egg with 100% of the queen's genetics. They have big, strong wings which are used to cool /or warm the hive. Their main role is to mate with the queen.

Bees have 5 eyes. 2 are compound eyes which can see violet, blue and purple flowers. 8 cells respond to various lights....polarized, U/V. 3 smaller eyes are used to help stability.

Bees have facial recognition. Tech has used bees and wasps in developing AI. Paper wasps also recognize each other.

If you happen to notice bees flying into you while working in the garden....if you are wearing U/V blocking sunscreen, you are seen as black. Evolution has taught bees to be wary of black and this tells them that bears are a threat!

## Bees cont'd

When the worker bees are making wax, it starts out as a liquid which they move around and roll with their mandibles. This wax starts out white and becomes dirty as the bees walk on it. Their mouth parts include a tongue which is like a straw. Their mandibles have receptors that sense touch, taste and smell. Bees use odour and vibration to communicate, which is sensed through their mandibles. These mandibles also measure temperature, carbon dioxide, humidity, and gravity. Amazing!!

### Bee Brains

Bee brains are about the size of a poppy seed. Their incredible little brains realize the concepts of same/difference, above/below, playful, fear, optimism, frustration. Here lies the argument for sentience.....Bees sleep for 8-10 hours per day. When they sleep, their mandibles move like they are in REM sleep!

### Nutrition Received from our Gardens

Bees receive nectar, pollen, and water from our garden plants. They are the only insect that produces food for their young. Bees turn the pollen into fermented bee bread. The bees use the bee bread and honey for food.

## How do They Know Which Flower to Visit?

They have a visible spectrum which includes U/V light. Bees also have a positive charge and when they land on electrically grounded flowers the pollen is attracted to them and voila, the pollen lands on them! They then move the pollen off the hair down into a pollen basket.

### Nectar Gathering

Worker bees collect the nectar by sucking it up through their proboscis. The nectar is stored as honey in their honey stomach, as they have 2 stomachs. The nectar is passed on to a food-handler bee at the hive who then places it in a chamber.

It's real alchemy – nectar to honey. When it has 17% moisture the nectar is ripe, capped and stored. Enzymes are broken down – sucrose into glucose and fructose. One kilo of honey is produced by 50,000 flower visits.

A hive may have 40-60,000 individual bees at the height of summer, with approximately 100,000 individuals per season.

*continued on p.3*

## Sechelt Seniors Activity Centre Our new meeting location

We have changed venues in order to improve our audiovisual presentations and be in a slightly smaller venue. We are grateful for the arrangements offered by the Seniors Centre management.



Club meeting Jan 29, 2024 photo by Susan Essiembre

*Bees continued from p.2*What Is Experienced When You Open a Hive?

It is a multi-sensory experience. You can feel the vibration, smell the honey, hear the bees. If you can smell bananas, it means the bees are upset. Their alarm pheromone smells like bananas.

Their flight pattern is also an indication of their mood.

Bee Pests

The Varroa Mite is a destructor mite for honeybees. It delivers viruses to the bees. Colony collapse is caused by mono floral culture as in fields of the same flower e.g. canola, or blueberry. Bees need a variety of flowers. Many of these crops are treated with herbicides, fungicides, and insecticides. Any of the “ides” are deadly to bees.

Honeybees and native bees are in competition for the same food. It's important for gardeners to plant our gardens with species that attract and feed bees and pollinators.

Winter Care

The hives are wrapped in the winter to insulate them. The workers and drones cluster around the queen to keep her warm. The bees keep the hive between 34.5 and 35.5 degrees Celsius throughout the winter. 50-60 lbs of honey should be left in the hive to feed the bees through the winter.

Good Food Sources for Bees

Buckwheat is good to plant in late summer for all pollinators

Big Leaf Maples make delicious honey!

Flowers and flowering shrubs

Sourwood tree which flowers late

Joe Pye Weed, Goldenrod

Herbs and mints....wild oregano

Brassicas

Hyssop

Springtime and Late Winter Habitat

Create a native habitat...keep it undisturbed.

Don't rake up leaves until the queens have left.

Be a messy gardener! Many pollinators overwinter in the pithy stocks of flowers

Leave brush piles...a good idea is a bundle of bamboo stocks

**Save the Date**

Sechelt Garden Club

Plant and Bake Sale

May 25 10-3

Cascade Butterfly Garden

**Pot up your plants NOW**



# In the Garden



## *Dragonflies in the Garden*

*Suzan Essiembre*

*Photos by Rand Rudland*

What do dragonflies love most in the garden? Water!

Dragonflies will hunt, reproduce, perch and play near water sources.

After they mate dragonflies mostly lay their eggs in aquatic vegetation above or below the water surface, although they will lay eggs in dry areas that the female knows will flood later on. Aquatic dragonfly larvae spend 1-6 years before their final metamorphosis to aerial predators.

Dragonfly larvae are beneficial aquatic insects, so having a pond or other water source in your yard will make them feel right at home. The water should be about 2 feet (.61m) deep, which is deep enough for dragonfly larvae but too deep for mosquito larvae to survive. A bubbler or fountain will deter those pesky mosquitoes. Any wayward mosquito that wanders into the garden will be happily consumed by the dragonfly, which catches its prey 9 out of 10 times. This is thanks to their large eyes that let them see almost 360 degrees.

Dragonflies are carnivorous and fierce predators with sharp mandibles. Besides eating mosquitoes, they will chase and catch other insects like ants and termites. Dragonflies will even eat each other. The aquatic stage larvae will eat many things, including other insect larvae, tadpoles and small fish.

Frogs and fish are common predators of dragonflies when they are in their larval stage. When they are in their adult stage, birds and spiders are the predators.

The biggest enemy of dragonfly populations is habitat loss. Increases in flooding, water pollution, pesticide use, drought and extreme weather also threaten dragonfly habitat and can impact their life cycle.

Dragonflies play an important role in the food web, both as predators and prey, and help keep populations of other insects balanced.

In addition to their striking colour and dazzling aerial displays, dragonflies make the outdoor experience more enjoyable. They are physically beautiful, with delicate, lacy wings that have a sheen to them in the sunlight, and brilliant metallic colours on their bodies. Dragonflies are agile and can fly backwards, up and down, hover and turn on a dime. Their unparalleled flight skills and acrobatic displays amuse and delight as they cruise around local ponds, wetlands and swamps.



***Dragonflies cont'd***

To attract dragonflies and their offspring to your garden you will need water, trees, shrubs and plants. Young adults need somewhere to hide so water plants that grow near and in a pond are necessary. The following plants are considered helpful:

For the garden:

- Black-eyed Susan (*Rudbeckia hirta*)
- Swamp milkweed (*Asclepias incarnate*)
- Joe-Pye Weed (*Eupatorium purpureum*)
- Meadow sage (*Salvia miltiorrhiza*)
- White yarrow (*Achillea millefolium*)

For the pond:

- Arrowhead (*Sagittaria latifolia*)
- Wild celery (*Vallisneria spiralis*)
- Water horsetail (*Equisetum fluviatile*)
- Cattail (*Typha latifolia*)
- Water lily

**Next SGC meeting**

**Feb 26 7 pm**

**Speaker Chris Hergesheimer**

**Topic: Local food security to support seniors and children**

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