

## January Plant Highlights: Cool Pollinators

\*\*Please note: due to the ever-changing and growing nature of the Conservatory, plants may move locations and flowers and fruit may not always be visible.

### Chocolate Tree



#### **Where do we find it in the Conservatory and why do we find it here?**

Our chocolate tree grows in Sugar from the Sun. You can see it when you first walk in from the Palm House. The chocolate tree enjoys warm, wet conditions, which is what most plants in Sugar from the Sun prefer. Also, Sugar from the Sun showcases plants that we use in our everyday lives, particularly when it comes to food—the chocolate tree is one of these plants!

#### **How does it grow or reproduce and what is special about it?**

The chocolate tree reproduces through seeds and flowers. The chocolate tree's flowers grow directly out of its branches and trunk. It has co-evolved with its pollinator so that its flowers open when its pollinator is active. The chocolate tree's "fruit" takes the form of large pods and is where we find cacao beans that we eventually process into chocolate!

#### **How do humans use it or interact with it?**

We use the cacao beans in the pods produced by the chocolate tree to produce chocolate, cocoa powder, cocoa butter, and more. We have refined the multi-step chocolate production process, which includes wrapping cacao beans in banana leaves to ferment, roasting the beans, separating the hull of the beans from the "meat," and further modifications to get what we know as a chocolate bar.

#### **What is its pollination story?**

There is only one pollinator of the chocolate tree: the chocolate midge! This extremely tiny insect (which has earned it the nickname "no-see-um") is the only insect that has evolved to access the intricate, small chocolate tree flowers. Furthermore, they are most active in pollinating the flowers at dusk and dawn, which is exactly when the flowers of the chocolate tree are in bloom! Finally, on chocolate plantations, the trees are pruned so that they do not grow very tall. This allows plantation workers to be able to reach all of the fruit in the chocolate tree without crushing the flowers by stepping on the branches!

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### Vanilla Vine



#### **Where do we find it in the Conservatory and why do we find it here?**

The vanilla vine grows in Sugar from the Sun. The vanilla vine enjoys warm, wet conditions, which is what most plants in Sugar from the Sun prefer. Also, Sugar from the Sun showcases plants that we use in our everyday lives, particularly when it comes to food—the vanilla vine is one of these plants!

#### **How does it grow or reproduce and what is special about it?**

The vanilla vine is a flowering plant and reproduces with seeds. Vanilla is a part of the orchid family. It is a vine, and thus grows upward around existing trees and plants, using them for support. On the vine, opposite the leaves, there are small bumps called “nodes.” Roots grow from the nodes and help the plant get the air it needs! Another special thing about how the vanilla vine grows is its leaves: they are very thick and waxy. These qualities help the plant retain water and also stop the plant from absorbing more water than it needs!

#### **How do humans use it or interact with it?**

Humans use vanilla as flavoring in many foods, particularly baked goods and sweets. We also use vanilla in scented lotions, soaps, and other similar products.

#### **What is its pollination story?**

Why is vanilla so expensive at the grocery store? It has a lot to do with its pollinator, the *Melipona* bee. This bee is the only pollinator of the vanilla vine and is only found in Mexico. When humans first tried to cultivate vanilla outside of Mexico, they were unsuccessful because there were no *Melipona* bees to pollinate the flowers! The only way to pollinate the vanilla vine outside of Mexico is by hand. This is a very delicate, labor-intensive process, which is made more complicated by the fact that the vine’s medium yellow flowers only bloom once for a few hours and then close forever! Additionally, the pods on the vanilla vine all ripen at different times, so laborers must always be scouring the plants for ripe fruit—vanilla pods can only be harvested when they are ripe because they will not ripen off the vine, unlike bananas. Because it is so labor-intensive to grow, pollinate, harvest, and process, vanilla is the second-most expensive spice in the world, after saffron!

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### Bird of Paradise



#### **Where do we find it in the Conservatory and why do we find it here?**

The bird of paradise grows in the Children's Garden. Its brightly-colored flowers are beautiful to look at for people of all ages.

#### **How does it grow or reproduce and what is special about it?**

The brightly-colored flower attracts pollinators, but the bird of paradise is flexible in its methods of reproduction, since it can reproduce through both rhizomes and seeds. Rhizomes are swollen roots containing all of the essential nutrients and structures to produce a new plant. Having options in terms of reproduction can help improve the plant's chances of reproductive success.

#### **What is its pollination story?**

The sunbird is the pollinator of the bird of paradise. When a sunbird comes to get nectar from the bird of paradise, the sunbird will perch on the spathe, which is the blue protrusion from the orange part of the flower. The weight of the bird on the spathe opens it, exposing the sunbird's feet to the pollen of the plant. When the sunbird leaves the bird of paradise, the pollen is stuck to its feet and belly. Then, when the sunbird arrives at the spathe of a different bird of paradise, the bird deposits the pollen it brought over from the first plant!

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### Lobster Claw (*Heliconia*)



#### **Where do we find it in the Conservatory and why do we find it here?**

We find the lobster claw in Horticulture Hall. *Heliconia* is actually a part of the ginger family! Horticulture Hall showcases a spectrum of different species of ginger, from *Heliconias*, to torch ginger, to banana plants.

#### **How does it grow or reproduce and what is special about it?**

Most members of the ginger family reproduce through rhizomes. *Heliconia* reproduces through rhizomes, but can also reproduce through seeds and flowers. The lobster claw is flexible in its modes of reproduction, which improves its chances for reproductive success. Its flowers are typically brightly colored to attract pollinators. The bright-colored part of the flower is called the bract, while the true, nectar and pollen-producing flowers are within the bracts. The large leaves and unique shape of its bracts also provide safety and shelter for bats and insects!

#### **What is its pollination story?**

The lobster claw is a sneaky plant! It does not constantly produce nectar for pollinators. Instead, it will ration out its nectar to hummingbirds, *Heliconia's* primary pollinator. Once a hummingbird drinks nectar from one *Heliconia*, it will guard that plant from other hummingbirds while it waits for the plant to produce more nectar. These hummingbirds are extremely territorial, but the hummingbird's reliance on the plant's nectar ensures that the *Heliconia* will be pollinated...how sneaky!