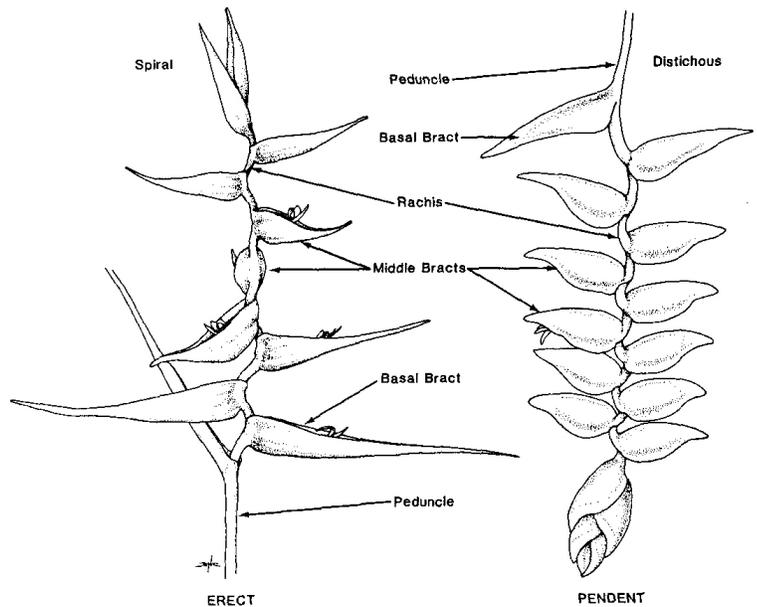


# Heliconias and Hummingbirds

Cloudbridge Nature Reserve - Nature Notes No. 22

## Introduction

Parts of a Heliconia Heliconiaceae is a family of beautiful medium to large herbs related to bananas. They are native to central and south America and to a few Pacific islands. The flowers are often large and beautiful and many Heliconias are grown for use in flower arrangements. The flower group (called an "inflorescence") is almost always at the end of long, leafy shoots. The stem is either erect or drooping (erect in the diagram to the right), with respect to the leafy shoot from which it emerges. The inflorescence is made up of the peduncle and modified leaflike structures known as bracts. The rachis connects adjacent bracts. Within each bract there is a coil of inconspicuous flowers. The fruits also develop within the bracts. The bracts are often filled with water and house a distinctive aquatic micro-ecosystem. Heliconias are found near river banks and forest clearings and wherever sun is able to reach the plants.



## Heliconias and Hummingbirds



Heliconias in the tropics rely exclusively on hummingbirds for pollination. This accounts for their bright red, yellow and orange colors, which attract hummingbirds. In addition to their colors, the Heliconias have developed long flower tubes with rich nectar contents. While obtaining the energy-rich food that they need to survive, brush pollen off onto the sticky surface of the stigma, the female organ of the Heliconia flower. The pollen may be obtained from the anther, the male organ of a different heliconia flower, or perhaps of the same flower, since heliconias are also self-compatible. Thus, in this way hummingbirds help Heliconias to propagate their species. Heliconia with hummingbird (A plant is called self-compatible if a viable fruit containing fertile seeds can be obtained when a pollen from a flower of the plant fertilizes the egg in the same flower.) The hummingbirds also evolved long curved bills to be able to reach to the bottom of the flower tube to obtain the nectar. Even their tongue is long -- twice as long as the bill -- so that they can reach even further down the tube.

In most cases the size of the flower tube on the plant matches the exact size of the bill on the pollinating hummingbird. Certain Heliconias with deep flower tubes rely on a specific hummingbird with an extra long bill to pollinate them.

Unlike most other flowers, Heliconias have evolved a relationship that gives hummingbirds "exclusive" feeding (and pollination) rights, because neither color nor smell has developed to attract insects. Hummingbirds have no sense of smell. And different species of heliconia uses the birds in different ways. Each species places its pollen on a specific part of a hummingbird's body to avoid pollen waste and contamination from other Heliconia species in the same region.

### **Heliconias and Insects and Bats**

Many species of insects feed on Heliconia leaves. Maggots, bacteria, and protozoans make their homes in pools of water in Heliconia bracts, as do tiny frogs.

The plants also provide habitat for disk-wing bats (bats with suction-cups on their wings) and several species of tent-making bats. These bats construct shelters for themselves by chewing along both sides of the midrib of Heliconia leaves, so that the sides fold down, making temporary “tents.” A few Heliconias, the green ones, rely on nectar-eating bats for pollination.



*Heliconia rostrata*