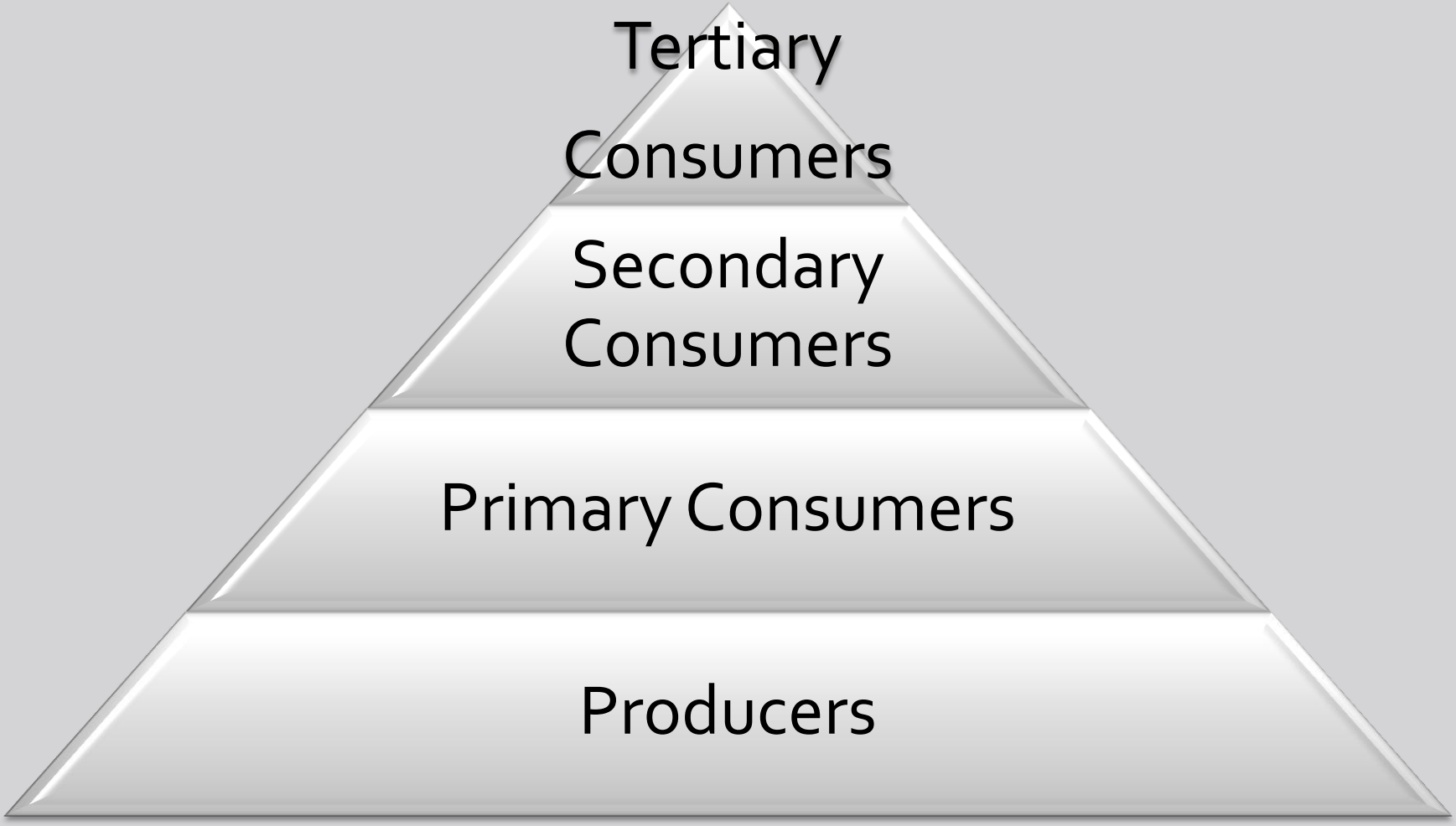
Parasitism, Commensalism, and Mutualism

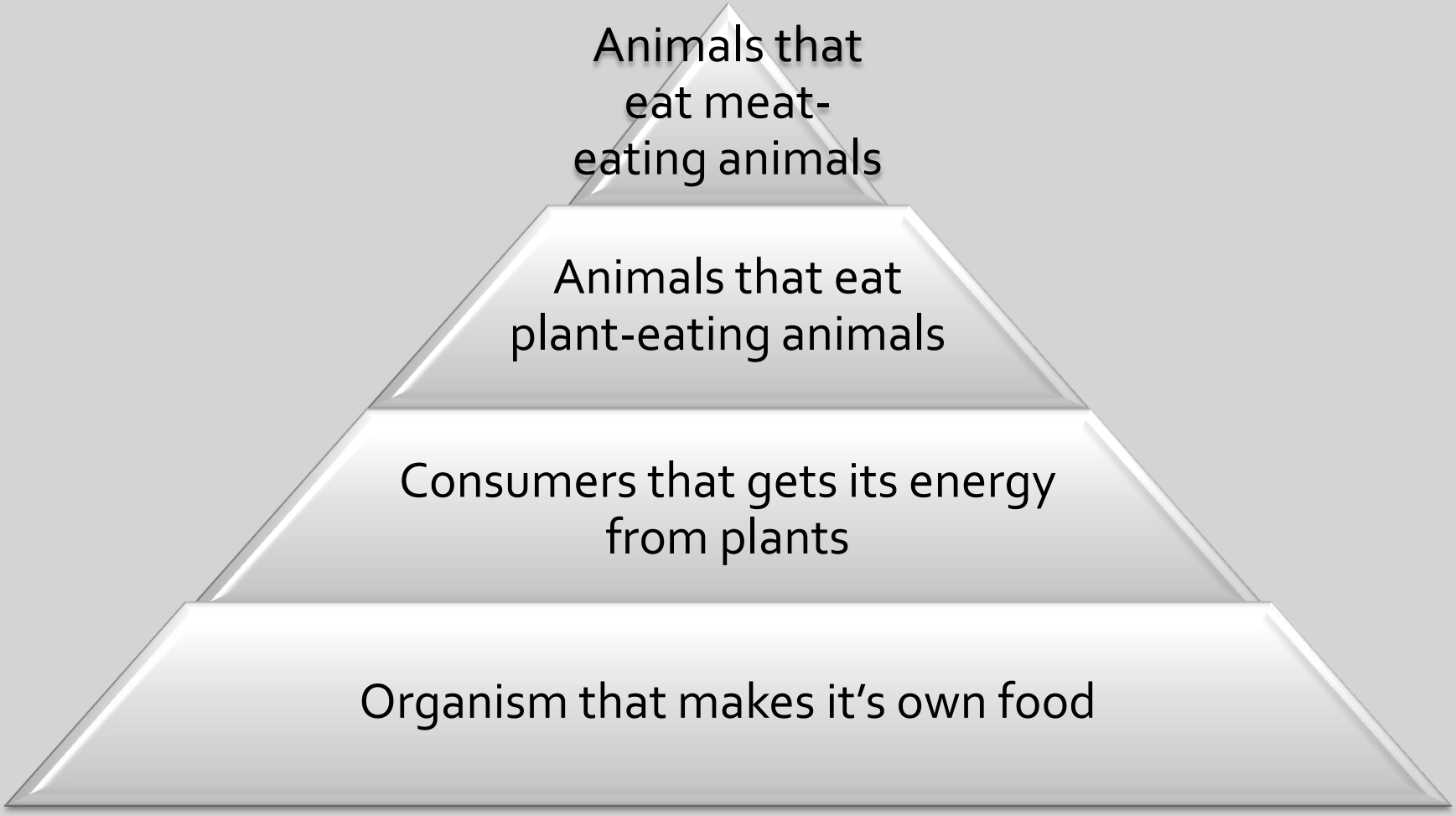
Symbiosis

Web Resource

How close were you?



Let's Define Each Level



Link to Types of Consumers

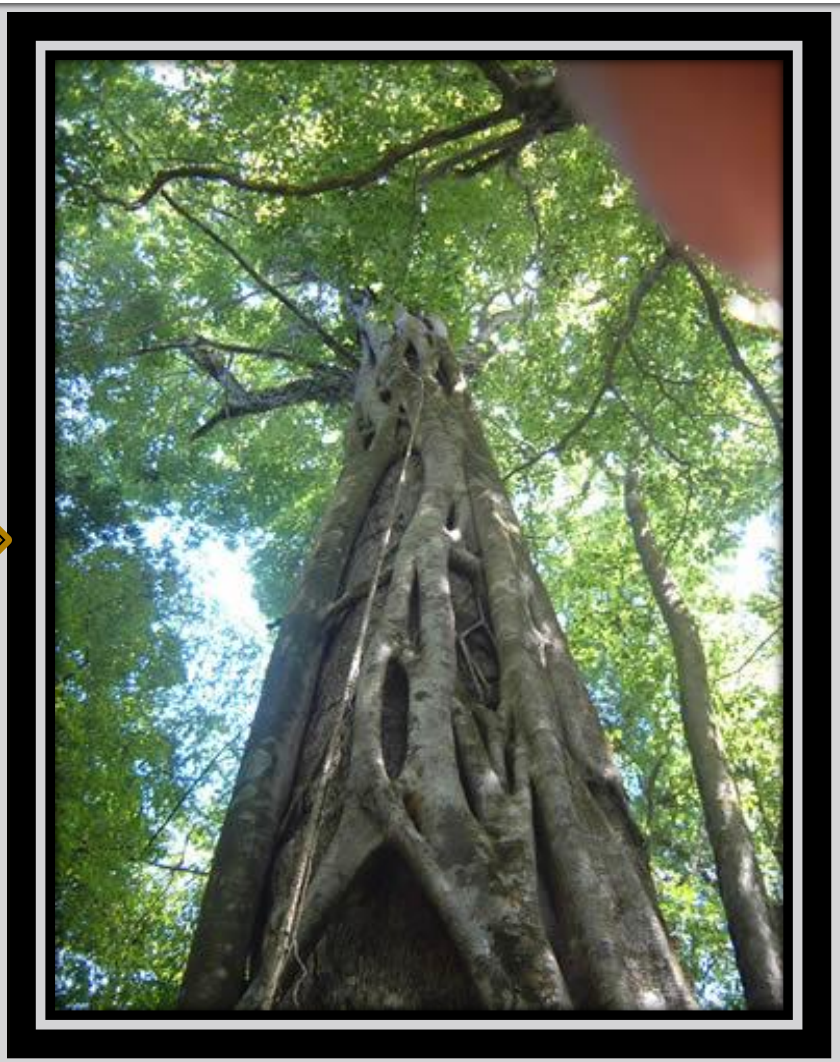
SYMBIOSIS

Living Together

Parasitism – is a relationship between two different kinds of organism which one lives in or on the other and causes it harm.

This strangler fig growing on another tree is an example of parasitism. The fig is getting support so it can grow quickly and get more sunlight.

Although the fig doesn't really strangle the tree, it does make it harder for the tree to get water and nutrients from the soil and also blocks some of the sunlight from reaching the tree's leaves.



Mutualism – is a relationship between two different kind of organisms that benefit both of them.

The ants have a home inside the hollow stem of the acacia. (Can you see the hole they are going in and out of?) They also get sugar from the plant. The acacia produces small spots of sugar at the base of each leaf. (The brown spot opposite the hole is a sugar gland.)

The ants attack anything foolish enough to try to damage the acacia's leaves.

Commensalism – relationship in which one organism benefits while the other organism is unaffected.

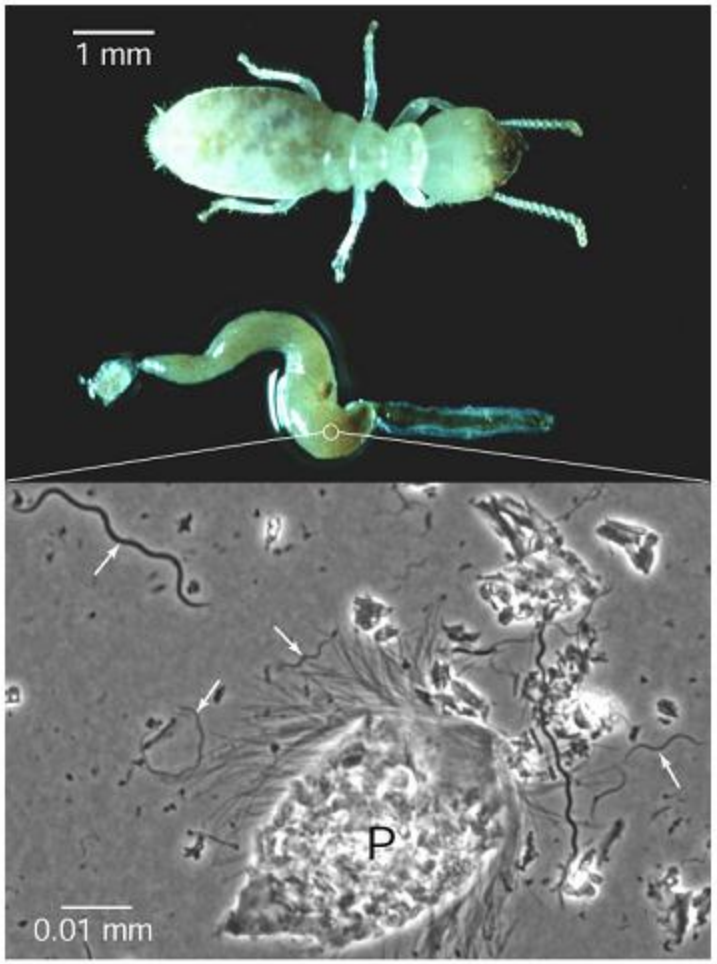
Orchids are epiphytes (plants that grow on other plants). They grow high in the canopy of rainforests on the branches of trees. The orchids benefit in several ways. They get more sunlight and are more easily visited by the moths which pollinate them. Also, because they are up high, the wind can more easily catch and spread their tiny seeds.

Orchids do not harm the trees they grow in. Their roots stay on the bark of the tree; they do not take water or nutrients from the tree.

What kind of symbiosis is taking place here???

Parasitism

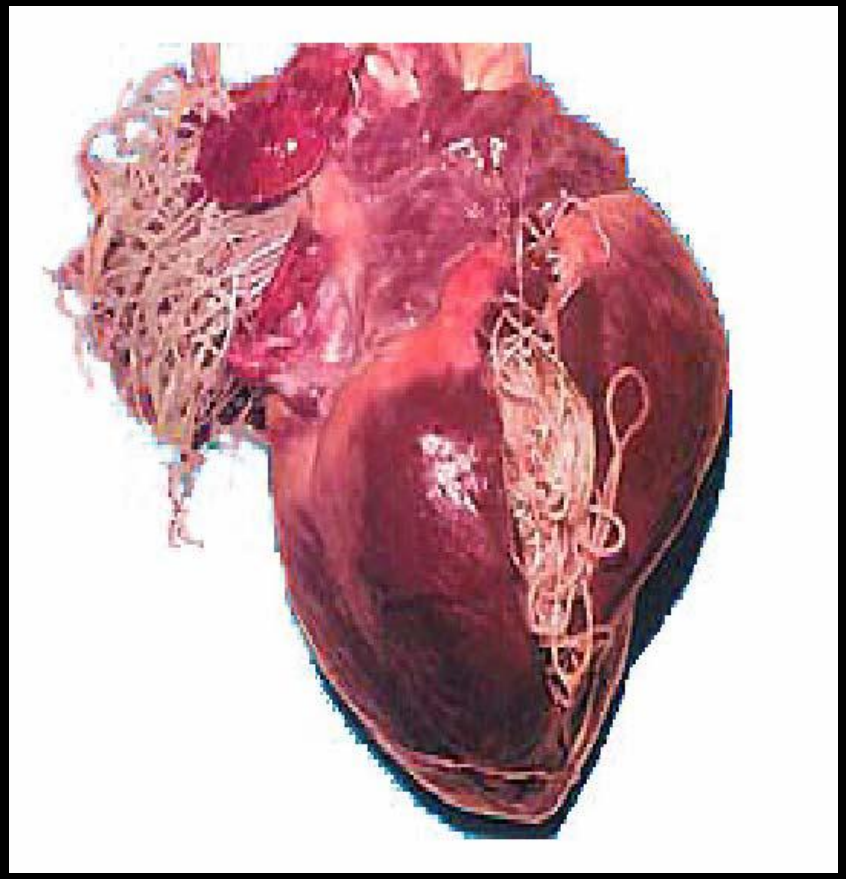
Athlete's foot is a skin disease of the feet which can spread to other parts of the body. It is caused by a fungus that commonly attacks the feet, because the wearing of shoes and hosiery fosters fungus growth. The signs of athlete's foot are dry scaly skin, itching, inflammation, and blisters.



What kind of symbiosis is taking place here???

Mutualism

Termites are nature's recyclers, breaking down and returning to the soil the cellulose containing materials of fallen trees and decaying wood. Termites derive nutrition from wood and other cellulose materials. They cannot digest the cellulose themselves. *Instead they are dependent on one-celled protozoa in their stomachs that break down the cellulose into simpler compounds that the termites can use as food.*



What kind of symbiosis is taking place here???

Parasitism

The heartworm (Dirofilaria immitis) is now recognized as a major, global pest affecting dogs, wolves, coyotes, and foxes. A mosquito serves as the intermediate host for the larval stage of the worm. Adult heartworms can reach 12 inches in length and can remain in the dog's heart for several years. Female heartworms bear live young – thousands of them in a day. The worms grow and multiply, infesting the chambers on the right side of the heart and the arteries in the lungs. They can also lodge in the veins of the liver and the veins entering the heart.

What kind of symbiosis is taking place here???

Mutualism

In many bee-pollinated flowers, there is a region of low ultraviolet reflectance near the center of each petal. This pattern is invisible to humans because our visual spectrum does not extend into the ultraviolet. Bees, however, can detect ultraviolet light. The contrasting ultraviolet pattern (called a nectar guide) helps a bee quickly locate the flower's center. This adaptation benefits both the flower (more efficient pollination) and the bee (rapid collection of nectar).

What kind of symbiosis is taking place here???

Commensalism

Epiphytes, or air plants, grow everywhere but can be found mainly on the branches, trunks, and even the leaves of trees. The name 'epiphyte' comes from the Greek word 'epi' meaning 'upon' and 'phyton' meaning 'plant'. Epiphytes grow on sides of tall trees in an attempt to be closer to the sunlight. They have no roots, and collect water and nutrients from the air. They begin their life in the canopy from seeds or spores transported there by birds or winds.

What kind of symbiosis is taking place here???

Commensalism

A few species of pseudoscorpions disperse by concealing themselves under the wing covers (elyatra) of large beetles such as the cerambycid beetle. The pseudoscorpions gain the advantage of being dispersed over wide areas while simultaneously being protected from predators. The beetle is, presumably, unaffected by the presence of the hitchhikers.