Conservation Corner

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June is knocking on summer's door, a welcome guest bearing flowers for the table – roses, peonies, and carnivorous plants. Yes, you read that last one correctly. Perhaps you also read the May 22nd Mark Trail comic strip that featured the Venus Flytrap, perhaps the best known of over 1,000 species of these fascinating plants. The flytrap leaves, which act like jaws to close around and capture unsuspecting prey, have "trigger hairs" that signal the arrival of a meal via a spike of electricity that travels along the surface of the plant's cells. However, the prey must strike two of the hairs before the leaves snap shut and begin to digest the prey. In other words, the cells act only when they receive two of these signals, suggesting the plant is counting.

Carnivorous plants have fascinated scientists and plant lovers for centuries. Charles Darwin's early text *Insectivorous Plants* was published in 1875. Since then scientists have learned much about the feeding mechanisms of these hungry plants but not so much about their pollination biology. Think about it: How do plants know which insects to eat? After all, they wouldn't want to eat the good guys. In other words, how do they attract pollinators without killing them?

As it turns out, carnivorous plants have evolved three main strategies of keeping their pollinators safe and their prey not so safe – specific attractions to flowers and traps as well as both temporal and spatial separation of flowers and traps.

Some carnivorous plants have developed either specific attractions or un-attractions to their flowers and traps. Plants may attract both pollinators and prey using color, odor, and rewards such as nectar, pollen, and oils. Ultraviolet patterns allow traps to be unattractive to pollinators or flowers to be unattractive to prey. Other carnivorous plants use temporal separation to protect their pollinators. One common strategy is for the plant to bloom before its traps develop. Finally, in spatial separation, the flowers and traps are located well away from each other. The traps are often located close to the ground while the flowers bloom high atop a stalk called a scape.

Perhaps the perfect example of spatial separation is the true aquatic plant *Utricularia vulgaris* or the common bladderwort. Over 220 species of bladderworts are found around the world. Here in Iowa, they are common in the wetlands and lakes area of the northern part of the Des Moines Lobe. In June and July, yellow blooms appear on scapes that rise above the surface of the water to be pollinated by bees and flies. Meanwhile, beneath the water's surface, bladderworts are capturing and digesting plankton, crustaceans, even tadpoles. Similar to the Venus Flytrap, trigger hairs control the flap that serves as a valve for the bladder. Once these hairs are touched, the door releases a suction that vacuums the unsuspecting invertebrates into the bladder.

Just when you think you've heard of everything, you discover plants that talk, count, and eat tadpoles for lunch. What other tasty tidbits will nature bring us this summer?