

Notes from Waring Field

By Kim Smith

During the month of September, Rockport's Waring Field is washed in sunlight tones of yellow and orange. The goldenrod is in full bloom and copious members of the amber-paned brushfoot butterflies are on the wing. Along with the Pearly Crescentspots, Meadow Fritillaries, Red Admirals, Monarchs, and American Ladies nectaring at the wildflowers in the meadow, butterfly enthusiasts are drawn to Waring Field for its metapopulation of Silver-bordered Fritillaries. The Silver-bordered Fritillary is a medium-sized orange butterfly with a variety of black markings—scallops, chevrons, dots and dashes on the dorsal, or topside of the wings. The underwings, or ventral side, are marked with silvery spots, with a pearl necklace-like border of more iridescent spots.

The diverse family of Nymphalid butterflies are commonly referred to as “brushfoot” butterflies because, like all insects, they have six pairs of legs, but their one common characteristic is that only four of their legs are used for walking. The two front legs have atrophied and are used for sensory detection. The structural arrangement of the scales creates a fur- or hair-like appearance, hence the name brushfoots. Butterflies do not grow fur or hair. Iridescence in butterfly wing patterns is created by yet another type of scale. The ridged and grooved structural layers of the iridescent scales refract light. As the wings undulate in a rapid figure-eight pattern, dashes of light flash, confusing predatory birds.

While walking along the meadow's edge towards the bog, I heard a loud rustling coming from the opposite side of the dense, tall grass and bramble thicket. I must admit that I am occasionally spooked when out in the field or in a wooded area alone. I know it is silly; there is absolutely nothing sinister about the sunny cerulean-sky of a September morning in New England. I stood very still and again, more rustling noises. In a commanding voice I said to the rustling noise, “go away wild creature,” and listened. Nothing happened. Cautiously I proceeded a few steps more. If I had not been so intent upon listening for a beast I may not have heard the tiny rustling noise at my feet. I looked down and there, not more than several inches from my foot, was a spectacular Chinese mantis, very intently looking at me and holding herself very still. I had my camera poised in anticipation of Silver-bordered Fritillaries and was able to take several photos, made easy as she was playing possum. In shades of brown and beige, she was well disguised amongst the blades of brown and green grasses.

There are over 2,000 different species of mantids world wide. Three types are most commonly seen in North America and only two in a New England garden or meadow. The native Carolina Mantis (*Stagmomantis carolina*) is found in the southeastern states. The colors of the *Stagmomantis carolina* vary in shades of brown and gray with a mottled appearance that provides camouflage. At two to four inches long, the Carolina Mantis is approximately half the size of the Chinese Mantis. Both the green European Mantis (*Mantis religiosa*) and the Chinese Mantis (*Tenodera aridifolia sinensis*) were introduced about 75 years ago. Although considered a beneficial insect, I would not invite any praying mantis to my garden as they eat butterflies and Ruby-throated Hummingbirds. The front legs give the praying mantis its name. Positioning them in a prayer like posture, the mantis holds very still until prey comes close enough to grasp. Quickly thrusting a spear-like front leg and impaling prey, she grasps the victim in an escape-proof grip while eating it alive.

The pink and white Orchid Mantis (*Hymenopus coronatus*) of south Asian rain forests is found on frangipani and papaya trees and orchids. They are characterized by walking legs that

look like orchid petals and by their stunning coloration, which tend to match the environment in which they were raised. Depicted in the earliest of Asian art and poetry, the mantis represents fearlessness and courage.

The Pearly Crescentspot camouflaged in goldenrod, the Chinese Mantis disguised in tall grass, and the iridescent flashes of the Silver-bordered Fritillary are all ways in which insects have evolved using structural and pigmented color as a defense against predators, or to their advantage to prey. We are fortunate to have an ecosystem such as Waring Field in our community. Surrounded by rich boggy wetlands that support a treasure trove of wildflowers, Waring Field is an ideal habitat where the symbiotic relationships between flora and fauna flourish.

End Notes: The first photograph is of a pregnant female Chinese Mantis. In autumn, the mantis mate and when the fertilized eggs are mature, she deposits the eggs in a styrofoam-like mass or cluster called an ootheca, which is attached to a twig or stem with a gluey-like substance. The eggs overwinter until early spring, when ant-sized nymphal mantids emerge.

Chinese Mantis



Silver-bordered Fritillaries

