

And this past autumn, on the cliffs above Hammond Pond, I found a large hanging puddingstone rock suspended two feet above the ground, where thousands of years ago it had become pinned between two rock faces, frozen mid-fall.

These woods are full of memories and discoveries. It was here I learned to adventure as a child in Newton's largest forest. As a teenager and young adult, I learned how to identify plants and spent endless afternoons hanging out with friends. Later I brought my children and students here to learn about nature and have fun. As a professional

botanist, I studied the reproductive biology of lady's slipper orchids, the restoration of rare wildflower populations, the sex expression of red maple trees, and impacts of climate change on the leafing out times of trees — all in these woods.

The Webster Woods is a special place for me, and also for my family, friends, and students. Many other Newton families and residents have similar ties to these woods. We are lucky to have them, and we need to protect them. ♦

## Adventures in Monarchy

Many years ago, we got some wildflower seed packs and started a garden in our front yard in place of grass. One year we noticed a new plant in the far corner of the yard. When it flowered later, we learned that this plant was common milkweed. Over a few years it spread farther and farther with our encouragement until we had a sizeable stand of it throughout the lawn surrounding our modest flower garden.

Milkweed is aptly named due to its milky sap when a stem or leaf is cut. On the other hand, the “weed” in its name might be a factor in its unnecessary removal; it has pretty and fragrant pink flowers in June and July, which are very attractive to bees and other pollinators. Two other types of milkweed are also commonly found in New England — swamp milkweed, which has pretty pink flowers and narrower leaves, and butterfly weed, with attractive orange flowers.

Monarch butterflies lay their eggs only on milkweed, and their population is being threatened by loss of milkweed habitat and the use of pesticides. And in our experience over recent years, sightings of monarchs were fewer and fewer, some seasons only resulting in two or three sightings.



*Male Monarch on asters, note dark spots on the wing.*



*Milkweed in garden*

We went on a quest in our garden to find Monarch eggs. The eggs are very small white ovoids, standing up like tiny footballs on end, usually just one per leaf. On common milkweed, they prefer the undersides of the more tender leaves on younger plants or the newer leaves at the tops of taller plants. A magnifier can be very helpful in distinguishing the eggs from little leaking milk-like sap drops. If a Monarch is landing on a milkweed

leaf, grabbing onto the top and putting its posterior underneath, it is likely a female laying an egg. In their lifetime, female Monarchs may lay 300-400 eggs; sadly, only a very small percentage survive from their many predators such as ants, spiders or flies.

Early on, I was able to identify and tag the leaves that had eggs, but in most cases checking them out later, the eggs had disappeared due to predators. We learned a simple method of increasing the survival odds is to simply pick the leaf and keep it in a small transparent sealed container lined with a moist paper towel. The egg can hatch in this small “nursery,” which can be kept indoors at a comfortable temperature. When the eggs hatch, the tiny caterpillar will eat its shell and begin chewing a small area of the leaf, leaving a crescent shaped hole at first, and generating tiny poppy seed-like

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PHOTO: TED KUKLINSKI

Newly hatched egg and tiny caterpillar



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Juvenile caterpillar with frass

frass — a polite word for caterpillar poop.

In the nursery, caterpillars can grow quite large if supplied with fresh milkweed leaves, and if the paper towels catching the frass are changed occasionally. The leaves stay fresh because of the moisture, and the caterpillars grow at an amazing rate, sometimes doubling in size in a day. On a trip last summer to Acadia, we happened to visit the beautiful Charlotte Rhoads Butterfly Garden in Southwest Harbor, Maine, where a helpful volunteer gardener showed us how they raised monarch butterflies. They would simply cut off milkweed stalks that they found with either eggs or caterpillars and put the stalks in water containers, where aluminum foil around the stalks would prevent the caterpillars from drowning. Gallon or half-gallon milk jugs can serve nicely and are heavy enough not to tip over. Small caterpillars raised in the nursery can be transferred to the stalks as well.



PHOTO: TED KUKLINSKI

Butterfly cage

The vases and stalks were put inside vertical fine mesh containers that had zippered sides. Such “butterfly cages” are readily available on the internet or at nature stores at a very modest cost. As they grow larger, caterpillars can enjoy eating the leaves on the milkweed stalks until they get to be about two inches in length. They then seem to go on an eating spree preparing for a long sleep. In a

mesh cage, they stop eating and climb to the top where they eventually hang vertically by attaching their tail to the ceiling and forming a “J” shape overnight.

The next morning “magic” happens as the caterpillar straightens out a bit and begins some movement. The caterpillar’s skin splits open at the head, and as it wriggles, the skin splits further and rolls up toward the tail, revealing what looks like



PHOTO: TED KUKLINSKI

J shape before chrysalis formation

a fat, greenish yellow larva inside. It spins and shakes until the skin drops off completely, spins a bit more, and then compresses vertically and becomes what looks like a smooth-skinned green hanging bean, the chrysalis only about an inch in length. Close examination shows a series of beautiful iridescent gold specks near the top.

For the next one to two weeks, the metamorphosis continues until the outer skin becomes a little transparent and even



PHOTO: TED KUKLINSKI

Chrysalis

portions of the wing structure become slightly visible. Usually in the morning, over a period of a couple of minutes, the butterfly will emerge starting near the bottom of the chrysalis. The legs emerge followed by the main body. In an amazing “transformer-like” process, the wings unfold and are pumped up by fluid in the thorax, expanding the butterfly to a size much larger than the seemingly tiny chrysalis.

Periodically, it will open its wings and close them again — the process of drying them. “Wow — look at me!” it may be thinking. In the next hour, it may take its first tentative steps away from its former chrysalis shell, continuing to fan its wings. After about two to three hours, the Monarch should

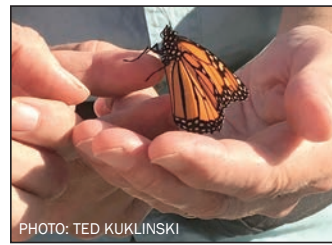


PHOTO: TED KUKLINSKI

Monarch in hand prior to release

be ready to experience flight for the first time. The butterfly will readily climb onto your finger and can be taken outside the cage. It may climb onto a flower and or simply take off skyward, free at last to fly and to explore its new world as a butterfly.

At least in our garden, the last of the eggs hatched around the end of August. By the end of September, these caterpillars had turned to butterflies — but very special ones. During the rest of the season, the butterflies live only a few weeks, during which they will mate, and more eggs will be produced. But the last brood of the season is different, and these do not mate but instead feed voraciously to prepare for their remarkable migratory journey south. They go all the way to Mexico if they are fortunate — where they will stay over the winter and breed in the spring and head north. It will take several generations in a kind of relay race for their progeny to make it back up north to New England.

The key to all this fun is a good supply of native milkweed. It’s so exciting to see this cycle in action, especially for budding young naturalists. Plant some milkweed and give it a try! ♦

✿ Ted Kuklinski