

Asclepias

Every fall, in fields and roadsides across New England, warty, sap-oozing pods set adrift myriad tufts of silken down attached to seeds resembling a small flake of whole grain cereal. So begins life as a milkweed. This rather incongruous union of ethereal grace and unabashed homeliness is a fitting metaphor for this contradictory clan of some 140 primarily North American species of herbaceous perennials. Be it their beguiling flowers that ensnare hapless visitors, leaves laced with a toxic chemical soup that ironically confers protection to the few insects that can survive a snack, or the fact that of the 10 species in New England, 8 are rare in at least part of the region while another, *Asclepias syriaca* is one of our commonest weeds, *Asclepias* is a study in contrast.

The milkweeds have evolved very complex and ingenious flowers to lure pollinators and affix pollen to them in a most embarrassing way. If you examine a flower closely, you will notice the five fused petals reflexed back against the pedicel (flower stem) like a skirt. Rising up from the center of this skirt is a column formed from the fused filaments or stalks that normally support the pollen-bearing anthers individually. The female stigma bulges out at the end. Not only are the five *Asclepias* anthers fused, but they have evolved complicated hoods resembling grain scoops from which jut small horns.



At the base of these hoods lies nectar, and as a pollinating butterfly, beetle, or bee lands on the flower and dips its proboscis into the hood, it often grips the column with its feet (tarsus). If one of the feet works its way into any of five small folds around the edge of



the column tip, it comes into contact with a structure termed the corpusculum linked by two thin threads (called the translator) to two wing-like, crystalline yellow pollinia. The web-like translator becomes entangled in the tarsus, and with pollinia thus attached, the pollinator must then travel to another flower and deposit the pollen in narrow stigmatic folds lower down on the column to complete the process. It's truly a marvel of plant-pollinator co-evolution.

If pollination and fertilization are successful, the familiar milkweed pod starts developing within a week and grows to a length of 3-4 inches over the course of the summer before splitting open along a vertical seam when seeds are ripe. The silk or floss that serves as a sail to keep the disbursing seed aloft is damp and matted when the pods

first crack, much like the down of a newly hatched chick. After a few hours, though the floss dries and fluffs out, and the seeds are borne away on the breeze. This silken sail has such tremendous buoyancy that if you clean the seedpods indoors, you will be vacuuming bits of it off the drapes for days. Floss is buoyant in water as well, and as supplies of kapok ran out during World War II, great quantities of *Asclepias syriaca* and its western cousin *A speciosa* were harvested to make 1.2 million "Mae West" style life preservers. These days, other synthetic materials are used in floatation devices, but milkweed floss has other potential uses for which it is being promoted as an alternative crop for



corn/soybean farmers. It has the same insulating abilities by weight as goose down, and is thus being utilized both in comforters and pillows as well as building insulation.

Milkweeds get their name from the chalk-colored latex that oozes from any wound. This sap contains a host of chemical poisons that effectively discourage most herbivory. The most potent of these chemicals are cardiac glycosides similar in effect to digitoxin, the well-known poison turned heart medication made from foxglove. Other chemicals include enzymes called proteinases that begin the breakdown of protein. This explains one use of *Asclepias* (nor recommended here) as a meat tenderizer and another as a wart remover! The latex also holds promise as a source of liquid fuel, rubber, and oil.

Why are most of these species rare in New England? Not surprisingly, it has mostly to do with habitat requirements. *Asclepias* reach their greatest level of diversity in the South and West, where the climate

is hotter and drier. Since New England is cool and wet, the milkweeds' options are limited. Swamp milkweed (*Asclepias incarnata*) is one of the few that thrives in wet locations, and it is common in damp meadows, swamps, and along pond and lakeshores. It boasts rich pink flowers in flattened heads atop 3-4 foot stems in mid-summer.

Common Milkweed (*Asclepias syriaca*) is the only New England species that is aggressively colonial (all the others are generally clump-forming). Its rhizomes can travel yards underground, resprout if damaged, and quickly colonize suitable locations. It is an abundant, widespread weed of disturbed places, roadsides, and fields. Its stiff, paired, elliptical leaves and balled clusters of silvery pink flowers are a familiar sight in



July. The purple milkweed, *Asclepias purpurascens*, is a prairie and meadow species that has become very rare in New England as agricultural land has reverted to forest. It's a charming milkweed superficially similar to *A. syriaca* but with darker purple flowers in round clusters that spring from the upper leaf axils of 3-foot stems. It is somewhat shade-tolerant, being found along edges of fields and glades.

Asclepias exaltata, the poke milkweed, has leaves which can become quite large in shady situations. Its ability to bloom in lightly wooded locations gives it an advantage in our region, though it is still rare north of Massachusetts. I have a patch on the road across from the mailbox, and its distinctive, white and greenish-beige, pendulous flowers still appear every June, though the spot is getting too shady for its liking. The white hoods and long, incurving horns look to me



like one of those white crab spiders perched on a flower awaiting its prey. *Asclepias variegata* (red ring milkweed) is extremely rare in New England, and in fact may have disappeared from its one known location in Connecticut. This is unfortunate, for I find this one of the most beautiful of all the milkweeds, with its porcelain white flowers decorated with a subtle garnet collar at the base of the column. Though more common in the southeast, and tolerant of the same semi-shaded locations as poke milkweed, we are perhaps just too cold in winter for its liking. After searching for years to find seed of this species, I was saddened to find all the plants dead after last year's intense cold. It has elliptical leaves with a wavy margin, much like *Asclepias amplexicaulis* (blunt-leaf or sand milkweed), a species of dry, sandy soils. In New England, it is most common

on the coastal plain and uncommon elsewhere. The wavy leaves are held out perpendicularly from the stem and the bases of each pair butt up against each other so tightly that the stem appears to perforate their center. A round cluster of pretty, bicolored flowers stands above the uppermost set of leaves like a tassel on a long stem. The petals are bright green while the hoods are garnet to pinkish red.

Asclepias quadrifolia (four-leaved milkweed) also has distinctive foliage – four, oval, pointed leaves whorl around the stem on mature plants, though paired sets are also common. The flowers are carried in the manner of *A. amplexicaulis*, on a stiff terminal stem above the last set of leaves. The delicate flowers have shell-pink petals and white

hoods, and the plants can be found occasionally on rocky balds and outcrops.



Asclepias verticillata (whorled milkweed) is a dainty little plant with fine foliage in pairs or whorls along thin stems; equally delicate flowers of green and white perch in small clusters along the upper nodes. It is rare in New England but more common in dry prairies and outcrops in the South and Midwest. The same can be said of the most brightly colored New England milkweed, *Asclepias tuberosa* (butterfly weed). A common roadside plant in the drier parts of the US, it is restricted here to the sandy soils of pine barrens and dunes. With orange, yellow, or red flowers as bright as a 1970's shag carpet, this small plant makes a big impression and is easy to grow if you can provide well-drained soil and full sun.

Finally, we have the aptly named green comet milkweed (*Asclepias viridiflora*) unlike the others, the flowers of the green comet lack hoods, so the swept back petals have more visual effect. Again more common in the prairies, this unusual milkweed is known from only one location in Connecticut as far as New England goes.

