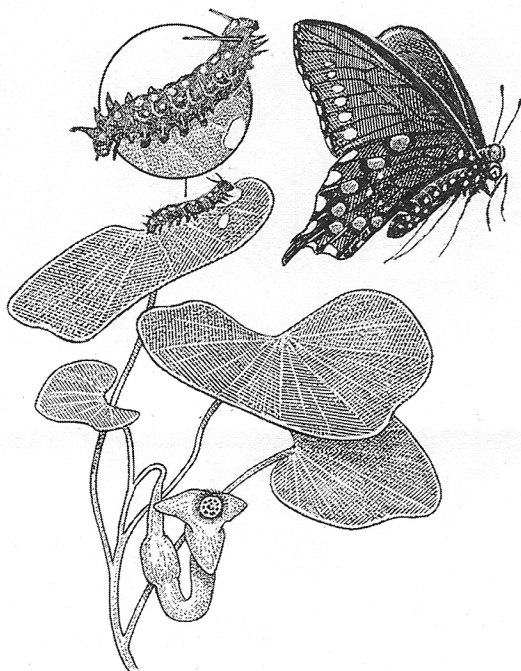


## The Mimics Among Us

If ever a flower design seemed the work of witchcraft rather than evolution, it would be Dutchman's pipe. The two-inch flowers are an unappealing shade of yellow-green whose garishness is accentuated by three brownish-purple lobes. Taken together, the shape is like no other in nature, resembling a Dutchman's smoking pipe, hence the name. When the flowers open in late spring or early summer, insects buzz about,



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*Pipe Vine Swallowtail butterfly and caterpillar on a Dutchman's Pipe vine and flower.*

attracted to the scent. Once the insect enters the flower it becomes trapped in the corolla tube and can only escape after becoming dusted with pollen. Detention of its pollinator is only the start of the evolutionary trickery associated with this climbing vine, which is rare in our region but commonly found along Skyline Drive and in the Blue Ridge mountains.

All species in the pipevine family (*Aristolochiaceae*) contain a compound called aristolochic acid, a powerful chemical known to cause urological cancer and kidney failure. So toxic to humans, but not at all to hungry caterpillars of the Pipevine Swallowtail, a relative of the beautiful black and yellow Tiger Swallowtail Butterfly. Female Pipevine Swallowtails lay their eggs on

pipevine and what hatches out—more sorcery—is a forbidding red-and-black caterpillar festooned with spiky projections.


The larvae go to work and start devouring leaf after leaf. Imagine how dreadful our lives would be if from infancy through adolescence we had to eat the same dish—morning, noon, and night—until we turned into adults. Welcome to the world of butterflies and moths, though they don't seem to mind the menu. After metamorphosis and escape from the pupal sac, the adult does enjoy an expanded tasting menu of nectar from swamp milkweed, honeysuckle, butterfly bush, and lilac blossoms. But the adult Pipevine Swallowtail retains its unpleasant flavor as a result of the distasteful host plants ingested by the caterpillars.

In fact, Pipevine Swallowtail adults are so unpalatable that birds avoid them. And so begins an even more complex example of nature's trickery. Over time, several butterfly species—especially the females of the Eastern Black Swallowtail, Tiger Swallowtail, Spicebush Swallowtail, Diana Fritillary, and both male and female Red Spotted Purple—have evolved to resemble the Pipevine Swallowtail with a rather dull, bluish black from a bird's eye view, and rows of bright orange spots on the bottom. These mimics—in a sense, imposters—are edible to birds but, by closely resembling the Pipevine Swallowtail, they escape being eaten. There is a name for all this type of evolved imitation—Batesian mimicry, named after Henry Walter Bates, an early 19th century explorer-naturalist of the Amazon. Organisms disguising themselves to look like others or sound like others are all examples of Batesian mimicry.

Pipevine Swallowtails are typically rather scarce in our area because their native host plants are only common in the mountains. Local planting in gardens of pipevine have attracted a few individuals of this butterfly species into the lowlands, however.

To my great delight, several years ago I found seven caterpillars of Pipevine Swallowtail happily chewing away on two species of pipevine I had planted on a trellis. I checked them everyday, until one morning I found them sucked dry, attacked most likely by a parasitic wasp.

Last year, I found two more caterpillars and considered putting a fine mesh net around them to keep away their predators. Good thing I didn't. One of them inched its way twenty-five feet from the plant to form its chrysalis on the screen of the living room window. I missed its emergence, though: when I returned from work one day only an empty husk remained.

The real mystery to me in this story is how in the world the adult female Pipevine Swallowtail found my tiny patch of Dutchman's pipe flying over lower Montgomery County. I have roamed up and down the Potomac in search of these host plants but have never found a single specimen. There are some planted in the botanic garden near the Smithsonian castle, and a patch at the National Arboretum, and another near Gaithersburg, but no other plantings in Cabin John, as far as I know. Perhaps pipevine scent became volatile and wafted up from my garden. An attentive female flying up the Potomac detects the few parts per billion of volatile aristolochic acid molecules in the atmosphere and takes a right off MacArthur Boulevard to find the manna growing on my trellis. To most observers, it would be just another butterfly fluttering through a backyard. To me, it was a miracle of detection. —


## Butterflies Have Many Friends at Clara Barton School

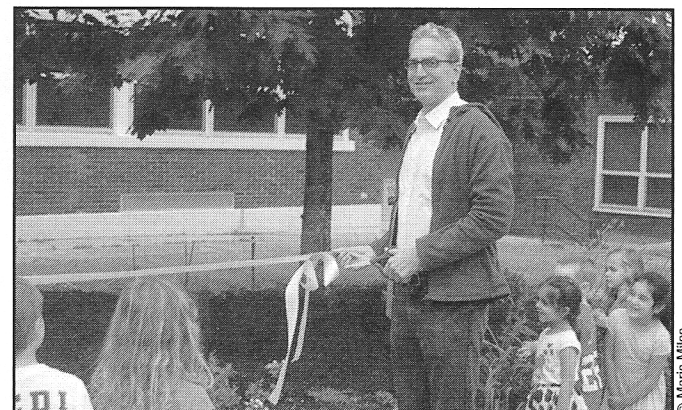
by Maris Miles

It takes a village...to grow a garden! Namely, the new butterfly garden located in front of the Clara Barton Center for Children. A favorite song of the children begins with the words; "Clara Barton has many friends. There are many friends at Clara Barton..." which is an appropriate sentiment considering how many people came together to help during the recent project to open the Monarch Butterfly Way Station.

Our army of volunteers consisted of teachers; (April Cappeluti, Deb Duffy, Maris Miles, Ester Bonilla, Morena Carballo, Cathy Morton, Cecila Flores and Liz Clark) who were joined by spouses, (Colin C. and Glenn M.) parents (Breit Nelson, Marget Maurer, Neil Shaut, Ray Briscoe, Holly Atallah and Patricia Guroff) along with a youth volunteer group headed by Kayleigh Page. This group arrived to break ground on the garden and prepare the site for its new inhabitants. Removing sod, trimming bushes, weeding and lifting various plants for relocation, as well as laying over 12 cubic yards of top soil and 10 cubic yards of mulch all required true grit and determination, especially as the sun swept around to bake down on everyone. Parents Anna Medina and Todd Klessman donated a variety of nectar plants for the garden. Through a grant from Monarch Watch, we obtained milkweed feeder plants, the only plants that Monarch caterpillars will feed upon. Clara Barton Director Linda Owen and her daughter Elizabeth undertook a special project to recut and design a pathway where rainwater had been collecting. Their abilities at civil engineering have now been thoroughly tested and the results are awesome! (We're not sure if they are accepting new contracts!)

Local business, Tri-Stone State on Seven Locks Road, supported the project with prompt deliveries of mulch and topsoil, and Glen Echo Hardware supplied assorted garden supplies.

CBCC was fortunate to have local naturalist Dr. Eric Dinerstein join Clara Barton children and teachers to officially open the garden in June. He then took time to answer a few of the children's questions and they also enjoyed having an opportunity to share the knowledge which they had been accumulating about bugs in general and Monarch Butterflies, in particular. The "icing on the cake" for our locally supported venture came this summer with the surprise arrival of a beautiful bench donated by parents, and Cabin John residents, Colleen and Neil Shaut. As always, I feel aware of what a grand place Cabin John is in which to live! —



*Eric Dinerstein and young friends at the ribbon cutting ceremony for the Monarch Butterfly Way Station on June 5.*

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