

May-apples usher spring

By Susan Yost

One of my favorite pastimes is a walk in the woods, and spring-time is a good time to look for the distinctive umbrella-like leaves of may-apple (*Podophyllum peltatum*), a member of the barberry family (*Berberidaceae*). This herbaceous perennial is 1 to 1½ feet tall, grows from rhizomes, and usually forms colonies.

May-apple has two growth forms. Some may-apple leaves arise

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singly from the ground and do not bear flowers. Flowers form when there are two leaves on an above-ground stem, with the flower in the fork between the leaves. The flower has six to nine white petals, and is 1 to 2 inches wide. This year, May-apple was in full bloom at the end of April, in central Delaware.

May-apple is aptly named for its fruit, which looks like a small green apple in May, and then turns yellowish and is about 2 inches long as it ripens later on in the summer. The pulp of the ripe fruit is edible, either raw, or cooked and made into jelly. However, be aware that the unripe fruit, leaves, roots and probably the seeds, are poisonous.

Another common name for may-apple is mandrake, which is also applied to another, unrelated, poisonous plant (*Mandragora*, in the nightshade family *Solanaceae*, which is said to scream when uprooted, was recently popularized in "Harry Potter"). Animals such as box turtles and rodents often beat humans to may-apple fruit as soon as it ripens. The seeds have been reported to be dispersed mainly by eastern box turtles, and passage through a box turtle's digestive system has been shown to improve seed germination rate.

The scientific name for may-apple is also descriptive: *Podophyllum* means "foot leaf" (apparently referring to a duck's foot). *Peltatum* means "shield-like" and refers to the umbrella-like leaves, in which the leaf



Delaware State University/Susan Yost
May-apple (*Podophyllum peltatum*) is a woodland wildflower native to Delaware.

stem (petiole) attaches to the underside, rather than to the edge, of the leaf. The leaves also start out looking like furled umbrellas that then open up.

May-apple has medicinal value, with two semi-synthetic podophyllotoxin derivatives, etoposide and teniposide, used in chemotherapy for lung and testicular cancer, and childhood leukemia, respectively. Sales of these two compounds exceeded \$200 million annually, according to a 2000 publication. It has also been used to treat venereal warts. However, these chemicals are so extremely poisonous that they must be used only under a physician's care.

Gardeners can grow may-apple by division of the rhizomes or from seeds, in moist humus-rich soil, in partial shade. Good sources of native plants are the annual plant sales of the Delaware Nature Society ([delaware-](http://delaware-naturesociety.org)

[naturesociety.org](http://delaware-naturesociety.org)) which took place in early May this year, and the Delaware Native Plant Society (delawarenativeplants.org) which takes place on the first Saturday of November.

May-apple is a "spring ephemeral" that thrives on the sunlight that comes down to the forest floor in the early spring, before the trees above it leaf out. Later on, in the summer, the forest is far shadier and the leaves fade away, but they'll be back next spring.

Editor's note: On the campus of Delaware State University, the Claude E. Phillips Herbarium is Delaware's center for research, education, and outreach about plant identifications, locations, and uses. Call 857-6452 (Dr. Susan Yost, Herbarium Educator) to arrange a tour of the herbarium, or for more information about this article.

