
WILDFLOWERS

The Bulletin of the Botanical Society of Western Pennsylvania • February 1999

Next Meeting is February 8

The next meeting will be Monday, February 8, at 8:00 p.m., at the Kresge Theater at Carlow College, 3333 Fifth Avenue, Pittsburgh, PA (Oakland).

Member Donna Vogler will present "Plant Mating Systems: If you can't be with the one you love, love the one you're with." Dr. Vogler is a post doctoral researcher at the University of Pittsburgh. She will discuss mechanisms that plants use to regulate self pollination and how individual plants may "choose" self pollen or outcross pollen depending on ecological circumstances. She will talk about her dissertation research on self-incompatibility in the common bellflower, as well as her project with Dr. Susan Kalisz involving delayed selfing in the Blue-Eyed Mary.

The January meeting was cancelled due to an untimely snow storm. Chuck Tague has been rescheduled for March 8.

Remit Your 1999 Membership Dues

Annual dues for the Botanical Society are **\$10.00** for an individual, and **\$15.00** for a family. Students can join at half-rate. Mail your name, address, phone number (optional) and a check payable to "Botanical Society of W PA" to our Treasurer:

Walter Gardill
PO Box 226, Grosick Rd
Ingomar, PA 15127

Boyce Park adds a Greenhouse

The Boyce Park Nature Center in Plum Boro, Allegheny County, offers complete environmental education and activities. The addition of a greenhouse provides the opportunity for horticulture projects and programs. School, scout, clubs, special groups, as well as individual activities can be scheduled.

Field, meadow and forest habitats are available for nature research and sensory awareness. Planted demo sites include herb and butterfly gardens, native plantings, perennial, wildflower and cultivated gardens, a kidney-shaped medicinal/Native American garden and two heart-shaped tree gardens.

For information and scheduling, call horticulturist and naturalist Tammy Watychowicz at (724) 733-4618, or (724) 327-0338.

Gardening and Landscape Symposium

On Saturday, February 20, 1999, the Pittsburgh Civic Garden Center will host a symposium devoted to exploring regional gardening and landscape design issues. Keynote speakers will address "Natives for the Herbaceous Border" and the "Sculpture of Gardens". Six concurrent sessions are offered.

For information, contact Marjorie Radebaugh at (412) 441-4442 or Michael Masiuk at (412) 473-2540. The Pittsburgh Civic Garden Center, Horticultural Society of Western PA, and Penn State Cooperative Extension are joint sponsors.

Thank You, Field Trip Leaders

The Botanical Society gathered for twenty-six field trips in 1998. Members enjoyed the area's plant life in the fresh green of spring and in the slanted light of winter.

We could not have enjoyed the flowers, the trees, the ferns, galls and lichens without these leaders!

- Esther Allen** – Moraine State Park (2/14/98)
Frankfort Springs (4/11/98)
Bavington SGL 432 (4/25/98)
Glacier Ridge Trail (6/20/98)
Jennings Prairie (7/25/98)
Independence Marsh (8/15/98)
Moraine State Park (10/24/98)
McConnell's Mills St. Park (11/14/98)
- George Bercik** – Upper St. Clair/Mayview (4/18/98)
Chalk Hill Bog (6/13/98)
Ander's Run Naturai Area (7/11/98)
- Luc Berger** – Wexford SGL 203 (5/9/98)
Butler Freeport Trail (8/29/98)
- Mark Bowers** – Cedar Creek County Park (4/4/98)
Quebec Run Wild Area (8/22/98)
- Dorothy Fornof** – Blue Run Trail (5/30/98)
- Walt Gardill** – Walt's Garden (7/12/98)
- Howard McIlvried** – Fringed Gentian Fen (9/26/98)
- Carl Patsche** – Frankfort Springs (4/11/98)
- Jeanne Poremski** – Plaingrove Bog (5/2/98)
McConnell's Mill St. Park (5/16/98)
Titus Bog (7/18/98)
- Loree Speedy** – Wildflower Res. at Raccoon (10/24/98)
- Lee Tosh** – Stony Creek Lake (5/23/98)
Allegheny Front/Dunnings Crk (9/12/98)

In his book "The Practice of the Wild", poet Gary Snyder says "Bioregional awareness teaches us in specific ways. It is not enough just to *love nature* or to want to *be in harmony with Gaia*. Our relation to the natural world takes place in a place, and it must be grounded in information and experience."

The Asteraceae

When evaluating the inflorescence of this family and the flowers making it up, we can see the advanced characteristics of the Asteraceae. Obviously reduction can be seen in the inflorescence, where many small flowers make up a head instead of many large showy single flowers distributed along a stem. This arrangement of many small flowers in one area insures pollination of many flowers from just a brief visit by one pollinator.

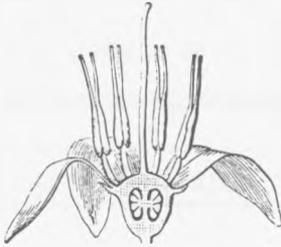
Individual florets show both reduction and fusion of floral parts. First, flowers of the Asteraceae all have a modified calyx called a pappus or none at all (reduction). The pappus can be made up of bristles, hairs, awns or a crown of scales. A very well known pappus is the "parachute" of dandelion fruits aiding in the dispersal of seeds.



Pappus of the Dandelion

The flowers of the Asteraceae have an inferior ovary, which is also an advanced trait. When we take a look at the fossil history of plants many botanists feel that the first flowers had superior ovaries and, as evolution continued, fusion of the sepals, petals and stamens also occurred. This fusion of perianth parts was so great that eventually they started to develop

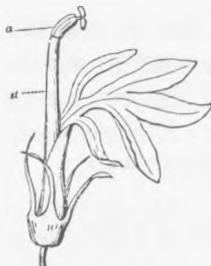
from positions above the base of the ovary. This fusion continued until the perianth occurred at the top of the pistil giving an inferior ovary.



Inferior ovary

The pistil is made up of a two-carpellate ovary containing a single basal ovule (seed) within one locule. The mature ovary or fruit type of this family is basically called an achene, a dry indehiscent fruit containing a single seed.

The stamens are fused (adnate) to the inside of the corolla tube alternating with the lobes. This condition in which the stamens are adnate to the corolla tube is called "epipetalous". The anthers of the stamens are part of the second unique family characteristic with its "pollen presentation method". The anthers are fused forming a tube above the style. This is a condition called "syngenesious". The anthers dehisce on the inside of this tube and fill the space with pollen while the style grows through the tube exuding the pollen out. Nature makes sure that the stigmatic surface of the stigma does not become receptive to pollen until after the style does its job of pushing pollen. This insures that self-fertilization does not occur and genetic variability is preserved by receiving pollen from another plant.



Syngenesious – fused anthers form a tube above the style

In conclusion one can see that the Asteraceae is not a difficult plant family to recognize, yet knowing characteristics of this family helps one compare and contrast it to others. The two main characters of this family for review are the "head or capitulum" (see January Wildflowers) and "pollen presentation mechanism". So when these two plant characteristics (and maybe the presence of a pappus) occur on an unknown plant you are trying to identify, chances are it belongs to the family Asteraceae.

Knowing descriptions of the more familiar plant families here in western Pennsylvania can give one an edge when faced with an unknown in the field. I leave you with a question one might ask when identifying a plant "does the teasel belong to the Asteraceae and why or why not"?

Jeff Polonoli

Field Trip Schedule

Saturday

February 13, 1999- Moraine State Park,
Butler County
Leader: Esther Allen
Time: 1:00 p.m.

Directions: Take I-79 North to Exit 28 (PA 488, Portersville). Turn left at end of ramp and travel 0.6 miles to US19. Turn right on US19, go 0.5 mile, then turn right on West Park Road (SR4007). Follow signs for "North Shore Moraine State Park". Go 2.8 miles on West Park Road, crossing I79, US422, and Muddy Creek. Just after crossing Muddy Creek, turn right onto North Shore Drive.

Follow North Shore Drive, passing Watts Bay Marina, all the way to the end of the road near Davis Hollow Marina. We will meet here.

This trip may could be cancelled, but only due to extreme weather conditions. If the afternoon weather is expected to be icy, snowy, rain or temperatures below 25°, call (412) 521-9425 the morning of the field trip. The message machine will let you know if the trip has been cancelled.

Botanical Society of Western Pennsylvania – Feb 99
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Pittsburgh, PA 15217

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WILDFLOWERS - Bulletin of the Botanical Society of Western Pennsylvania

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WILDFLOWERS is published monthly by the Botanical Society of Western Pennsylvania. We welcome short articles of botanical interest, drawings, letters to the editor, and notices of botanical events and group activities. Articles, notices, drawings, etc. should be sent to the editor at the above address. Deadline for submissions is the 17th of the previous month.

The Botanical Society of Western Pennsylvania - Membership Information

The object of the Society shall be to bring together those who are interested in Botany and to encourage the study of this science and a knowledge of plants. Our members include both amateurs and professionals. Annual dues are \$10.00 for individual and \$15.00 for family. Students can join at half-rate. To join, mail your name, your address, and check payable to "Botanical Soc. of W PA" to Loree Speedy, 5837 Nicholson Street, Pittsburgh, PA 15217. Your membership includes a subscription to the monthly bulletin WILDFLOWERS.

The Society meets the second Monday of each month, September through June, at 8 PM sharp, at Trinity Hall or Kresge Theater, Carlow College, 3333 Fifth Avenue, Oakland. All are welcome. An informative program follows the business meeting. Visit the Botanical Society Homepage at <http://home.kiski.net/~speedy/b1.html>.