
WILDFLOWERS

The Bulletin of the Botanical Society of Western Pennsylvania • February 2001

The Next Meeting is February 12th

The next meeting will be Monday, February 12, 8:00 p.m., at Kresge Theater, Carlow College, 3333 Fifth Avenue, Pittsburgh, PA (Oakland). Kresge Theater is on the top floor of the Grace Library and is accessed from the upper campus.

Members **Paulette and John Zabkar** will present the "Flora of Mount Rainier." Mount Rainier is the largest in a chain of volcanoes that extends through the Pacific Coast states. Its volcanic origin, the extensive influence of glaciation, and its great height above the surrounding terrain give it a unique flora.

Paulette and John are also members of the North American Rock Garden Society, which is holding its Annual Meeting in Pittsburgh, Pennsylvania in April 2001. (See insert)

If it appears that there will be hazardous driving conditions the night of the meeting, please call telephone number (412) 521-9425 after 5 p.m. for a recorded message indicating whether the meeting will be cancelled.

A Fern Find in Pennsylvania

"It can't be Male Fern," I said with disbelief. "It doesn't grow here." Indeed, *Dryopteris filix-mas* has not been recorded previously in Pennsylvania. In eastern North America it is a rare fern of calcareous woods around the Great Lakes, British Columbia, Nova Scotia and Newfoundland. I have seen it growing out of deep crevices in thick limestone beds on the

Bruce Peninsula of Ontario, which juts into Lake Huron. But, even the closest of these places is over 200 miles northwest of the site near Pittsburgh where, on November 12, 2000, I was unexpectedly face to frond with 19 mature, fertile plants!

This newly found, disjunct population is in a preserve called Dead Man's Hollow. The 400 acres here were acquired in several pieces starting in 1996 by the Allegheny Land Trust, using state, county and private funds. It lies about 12 miles southeast of downtown Pittsburgh near the city of McKeesport. Dead Man's Hollow is a pleasant, quiet spot, largely untouched for the past 50 years. Prior to that it was quarried, logged, farmed, and for the first half of the 20th century it housed a clay sewer pipe factory. However, no roads or utility lines ever penetrated the Hollow, so one sees only verdant bottom land, laced with small streams and surrounded by steep slopes. The secondary forest now maturing has mixed eastern deciduous trees, young, introduced white pine and hemlock, and a somewhat weedy undergrowth of native and exotic species. The preserve is bordered by residential neighborhoods and an abandoned rail line that is being converted to a biking and hiking trail along the Youghiogeny River.

The area where the Male Fern grows is in the hilly northeast section of the preserve on a 125' span of 15' high limestone talus. It lies well above the earlier disturbed lowland and is accessible by a narrow foot trail.

Most of the plants are fully mature with fronds measuring an average of 26". I have grown *D. filix-mas* from young sporelings in my garden

and estimate the biggest plants in the Hollow population to be at least 15-20 years old. Nearly all have abundant sori. Some of the specimens have large, double crowns and are obviously thriving at this unexpected site.

The rest of the fern flora in the preserve is unremarkable, consisting of common western Pennsylvania species like *Dryopteris intermedia* and *D. carthusiana* in abundance, along with occasional plants of *D. marginalis* and *Polystichum acrostichoides*.

A bit unusual is a large population of Ebony Spleenwort (*Asplenium platyneuron*). Some plants grow on the crumbling walls of the old pipe factory and on the limestone and shale cliffs leading to the preserve. But, in the area where the *D. filix-mas* is found, the spleenworts are particularly numerous and robust, with thick clusters of erect, fertile fronds over 12" tall. They look like spleenworts on steroids!

Male Fern is easily recognizable by its long, slender, stiffly-upright, persistent fronds with short stipes cloaked in light brown scales, blunt-tipped pinnules, and double rows of sori close to the midveins and mostly on the distal (tip) half of fertile fronds. The populations of Male Fern found in neutral to alkaline (limestone) sites in northeast and northwest North America are tetraploids of unclear origin. They appear to be different morphologically and ecologically from those growing on acidic granite and igneous rock in the southwest Rocky Mountains. In Volume 2 of the Flora of North America, it is noted that the southern Rocky Mountain taxon may be related to (or the same as) the apogamous triploid *D. pseudofilix-mas* from Mexico. *D. filix-mas* is common in a wide variety of habitats in Europe and parts of Asia, and most Male Fern available through nurseries in the United States is from European sources.

Returning to my original amazement at seeing *D. filix-mas* in western Pennsylvania, a logical question is, "How did it get here?" Disjunct populations of many ferns are known. The Forked Spleenwort (*Asplenium septentrionale*)

is primarily a western species in North America. However, isolated populations are documented more than half a continent away in two West Virginia counties. American Hart's-tongue Fern (*Asplenium [Plyllitis] scolopendrium*), a calciphile of the Niagara escarpment in New York, Michigan, and Ontario, has distant outposts in Alabama and Tennessee.

Since both these ferns, as well as American Male Fern, are related to forms found in Europe and Asia, it seems possible that they once had a more widespread, even circumglobal distribution. For many taxa, continental movements, climate, habitat alteration and destruction, and other factors have resulted in periods of isolation long enough for the evolution of divergent genomes, morphologies, and adaptation to new habitats.

The Male Fern in Dead Man's Hollow may be a relict population surviving in the microclimate of the Hollow (where the Canadian hemlock planted here is also thriving, although it occurs naturally this far south only in isolated, cool ravines).

On the other hand, dust-sized fern spores can, and do, travel on prevailing winds. Occasionally they may produce gametophytes and eventually sporophytes in favorable, distant sites creating disjunct populations. Who knows what spores come down to Pennsylvania on those "lake-effect" storms that frequently dominate our weather system? Or, the ferns in Dead Man's Hollow may have started from spores more locally produced on cultivated specimens in the surrounding area. From their presence on limestone talus and their strong resemblance to American Male Fern I tend to exclude a garden origin. As was mentioned earlier, most nursery material is European in origin and possibly of different lineage. I have recognizably distinct American Male Fern (from Ontario spores) and British Male Fern (purchased plants) in my garden.

However they got there, the male ferns at Dead Man's Hollow were a joy to find. So, put aside your preconceived notions of what should and

should not grow in a given place. When out hiking, keep an open mind and a sharp eye on those rock outcrops.

Joan Eiger Gottlieb



Scanned frond tip of Male Fern (*Dryopteris filix-mas*), showing double rows of sori along pinnule veins

Courses, Forums, Training and Happy Birthdays

- Happy Birthday to member **Erma Morcom Stull** of Leechburg, PA. Erma no longer needs to say "I'm nearly 90"; she becomes a nonagenarian on January 31, 2001. Erma has been a member since May 1969!
- Member **Clifton Magill** will teach a photography course in the use of the camera as a tool of art and as a means of scientific documentation. This class meets Saturday mornings from February 3 through May 12, 2001. For information, call Chatham College Continuing Education, at (412) 356-1857.
- The **2001 Rare Plant Forum** will meet at 10 a.m. on Saturday, February 10 at Olewine Nature Center in Harrisburg, PA. All people interested in the distribution and abundance of plant species in Pennsylvania are

encouraged to attend. E-mail, call or write Steve Grund for information. Western Pennsylvania Conservancy, 209 Fourth Ave., Pittsburgh, PA 15222. (412) 288-5401. E-mail: sgrund@paconserve.org

- Become a **volunteer naturalist** at Beechwood Farms Nature Reserve. "Pittsburgh Outdoors Classroom" needs people who enjoy the outdoors to share that enjoyment with children. Volunteer naturalists lead small groups of school students through Beechwood's trails. You will receive training in natural history and trailside educational activities. You commit to lead several weekday hikes a month during spring and fall. For information, call Scott Detwiler at (412) 963-6100.

Field Trip Schedule

Registration is not required. Everyone is welcome, including non-members. For questions, call the trip leader or Loree at (412) 521-9425.

Saturday, February 17, 2001
Butler-Freeport Trail, Butler County
Time: 1:00 p.m.
Leader: Esther Allen (412) 366-0786

Directions: From Pittsburgh, take Rte. 8 North, then take Rte. 228 east. Turn left onto Rte. 356. Or, from Rte. 28 north, take Rte 356 west. After roughly 3 miles, you meet Rte. 228 on the left.

Where Rte. 228 and Rte. 356 meet, travel a short distance and turn right on Sarver Road (SR2018). Go down the hill and along the creek for 0.8 mile. Just after crossing the creek and passing a volunteer fire department, turn left into a parking area, where we will meet.

This trip could be cancelled due to bad driving conditions or unpleasant walking conditions. Call (412) 521-9425 the morning of the hike for a cancellation message.

Botanical Society of Western Pennsylvania – February 2001

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WILDFLOWERS - Bulletin of the Botanical Society of Western Pennsylvania

Editor: Loree Speedy, 5837 Nicholson Street, Pittsburgh, PA 15217 Telephone: (412) 521-9425;
E-mail: <yoree@sgi.net>.

President: Dr. Mary Joy Haywood (412) 578-6175; Vice-President: Phyllis Monk (412) 831-2724; Treasurer:
Walt Gardill (412) 364-5308

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. Send to the editor at the above address. Deadline for submissions is the 20th 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 p.m. 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>.