

Fern in Focus

in Celebration of the Year of the Fern

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Royal Fern

Osmunda regalis L. var. *spectabilis* (Willd) A. Gray
Royal Fern Family (*Osmundaceae*)



When I call to mind the royal fern, I picture a rustic road bordered on one side by a racing woodland creek and on the other by a lush seepage swamp. In the swamp, cinnamon ferns lift their gracefully curved fronds toward the fragrant overhanging boughs of fringe-tree and the wild azalea known as pinxter flower. In their midst are slender, late-blooming Jack-in-the-pulpits. Along the dirt road, at the edge of the cinnamon ferns, small white Canada Mayflowers—also called wild lily-of-the-valley—carpet the ground beneath branchlets of arrowwood *Viburnum*. In the center of it all, as if holding court, are the tall and spreading royal ferns.

Although Tina Thieme Brown and I call this ethereal landscape the “fairy land,” it is a very real place on the lower western slopes of Sugarloaf Mountain along the pristine creek called Bear Branch. One of the many things we plant people seem to have in common is the indelible memory we carry of the first place where we have seen and identified a beloved plant. This is my royal fern place.

Thoreau described ferns as “tender and delicate, but perfect in all their details, far more than any lace work—the most elaborate leaf we have.” With feathered fronds of tender green and spores as light as fairy dust, ferns have inspired mystics, romantics and poets throughout time, in the Old World and the New. Their ancient lineage seems to add to their mythic appeal. According to a University of Massachusetts biology website: “The royal fern is one of the most widespread of all living species and is found on every continent except Australia [and Antarctica]. *Osmundas* have witnessed the rise of the reptiles, the flourishing and eventual extinction of the dinosaurs, the origin and adaptive radiation of the mammals, and the rise to dominance of an obscure genus of hominids named *Homo*.”

Yet when aesthetic appreciation turns to ID attempt, romance can quickly fade, with serious fern frustration setting in. That is why we, as a native plant society, are vowing to learn more about the native ferns of Maryland during 2011 as a collective project, with some of the botanists among us who really know the ferns sharing their expertise during MNPS monthly meetings and field trips. It is also why Tina and I have chosen a species that is among the more easily identifiable for “fern in focus,” a feature usually devoted to wildflowers.

To begin with, the royal fern doesn’t look like a typical fern. In the words of naturalist Dwight Johnson, who will address our April monthly meeting and lead a Gunpowder Falls field trip in June: “Royal fern is an interesting plant because, especially when it grows in clusters, it doesn’t look fern-like when you glance at it. It looks more shrub-like.” MNPS board member, teacher and author Cris Fleming, who will lead us on a fern

walk at Snyders Landing in May, says: “It is easy to identify for those of us who know it is a fern, but I have had people on walks, who, seeing it without the fertile frond, think it is some kind of shrub. The 2005 Peterson Ferns Guide says it resembles a locust and indeed it does!” When the fertile frond is present, it’s easy to understand a more obscure common name for this fern: flowering fern. Tina’s art depicts the floral appearance of the royal fern’s fertile pinnae.

FronDs: Royal fern fronds may be three feet or more in length and during the growing season they are a fresh pale green, looking like black locust leaves. Fronds are bipinnately divided with suboppositely arranged, widely spaced and ascending **pinnae**, and alternate, nearly entire or just barely toothed **pinnules**. The pinnules are oblong (like black locust leaflets) with blunt apices and rounded or slightly oblique bases. They are very short-stalked, almost sessile. The fertile (sporangia-bearing) pinnae grow from the tops of some of the fronds. They are green at first, turning brown, and they appear tightly clustered and panicle-like. Spores are produced in spring and early summer. The Peterson Field Guides’ Ferns notes: “‘Royal Fern’ easily remembered by ‘crown’ of fertile pinnae at top of fertile fronds.” Resorting to a contemporary image, the Peterson authors write of the *Osmunda* genus: “The sporangium opens through a long slit on the top, looking like Pac-Man on the attack.” (Special thanks to Cris Fleming for bringing the Peterson descriptions to my attention!) **Rachis** is slender and round; pinkish, golden or green.

Stipe: Smooth and 8-24 inches long; pinkish, reddened at the base and slightly winged.

Rhizome: Massive, somewhat erect and partially above ground; old stipe bases woven together.

Height and Growth Habit: Approximately 3-6 feet. Grows in clusters.

Habitat and Range: Swamps, bogs, stream sides and other moist, often acidic soils; eastern U.S. and Canada, and on every continent but Australia and Antarctica.

Locations in Maryland: According to Brown and Brown’s Herbaceous Plants of Maryland, royal fern is found throughout the state. Kirsten and Dwight Johnson see royal fern along the Gunpowder River and at North Point Park in Baltimore County, at Pocomoke River State Park in Worcester County, and in Bear Branch Bog in Prince Georges County. Dwight says: “In Maryland, I see royal fern more in the coastal plain, obviously hand in hand with cinnamon fern.” Wesley M. Knapp, Eastern Region Heritage Ecologist and Botanist with Maryland DNR’s Wildlife and Heritage Service also notes: “[Royal fern] is very common in coastal areas of the state” and MNPS board member Karyn Molines—who will lead us on a Jug Bay fern walk in the fall—says: “it is easily found at the southern end of the marsh boardwalk at Jug Bay Wetlands Sanctuary.” MNPS board member Carole Bergmann—who will lead a fern walk at the Magruder Branch Stream Valley Park in August—observes: “I would say that in Montgomery County, royal fern is never found except in shaded to partially shaded, very moist—actually wet—conditions. It is always fun to find in Montgomery County as it is not that common. I have seen it in several nice colonies in our Upper Paint Branch Stream Valley Park, in North Branch of Rock Creek Stream Valley Park, and in McKnew Park.” According to MNPS board member Rod Simmons, “Royal fern is also a nearly constant component of the globally-rare Fall Line Magnolia Bog community: *Nyssa sylvatica* - *Magnolia virginiana* - (*Pinus rigida*) / *Rhododendron viscosum* - *Toxicodendron vernix* / *Smilax pseudochina* Woodland (USNVC C EGL006219) – though to a much lesser extent than cinnamon fern (*Osmundastrum cinnamomeum*) and usually in muckier, more heavily-saturated areas rich in organic material.”

Similar Species and an Exciting MNPS

Discovery: The royal fern is not apt to be confused with other fern species but it often grows in concert with cinnamon fern. According to Wes Knapp: “*Osmunda regalis* (royal fern) and *O. claytoniana* (interrupted fern) are the only two remaining *Osmunda* species in our area. Recent work shows that the cinnamon fern is in a different and monotypic genus, *Osmundastrum*, and its preferred name is now *Osmundastrum cinnamomeum*. This isn’t a new name but a very

old one that is being revived.” The cinnamon fern remains in the family *Osmundaceae* with the royal and interrupted ferns.

Some team work on the part of the Maryland Native Plant Society resulted in an exciting discovery two years ago. MNPS president Kirsten Johnson tells the story: “In the spring of 2009, the Baltimore Chapter's Bill Morgante organized a trip to a magnolia bog in the Laurel area. Leader Rod Simmons spotted an unusual looking fern next to a stream. Ginny Yacovissi suggested it might be *Osmunda x ruggii*, a rare hybrid of Interrupted and Royal ferns. The next day, my husband Dwight Johnson and I returned to the area and carefully collected a frond, which we preserved and presented to the Smithsonian herbarium on behalf of MNPS. Fern experts at the National Science Foundation and the Smithsonian have confirmed that this is indeed *Osmunda x ruggii* R. Tryon (*O. claytoniana* x *O. regalis*.)” This is quite a frond in the cap for the Maryland Native Plant Society!