



WILD NEWS

Prince William Wildflower Society

A Chapter of the Virginia Native Plant Society

Number 2014-06

November-December 2014

**PWWS Membership Meeting, Monday, November 17, 7:30 p.m.
Bethel Lutheran Church, Manassas**

**Nicky Staunton will present
“Life is for the Birds? Bed, Breakfast, Bathing,
Breeding, and Beyond”**

Nicky will share observations from Rocks Edge about furnishing habitat to support bird life on one's property and extended property, including

what birds need, where they fulfill their search, who and what helps or hinders their quest to live and procreate, and how native plants make life possible for birds. Nicky, a charter member and past president of PWWS and VNPS, is a noted advocate of native plants and natural areas and a well-known wildlife illustrator and photographer.



A long-time former resident of Manassas, Nicky now calls home Novum, Virginia on the Culpeper/Madison County line, where she has resided for the past eight years. She lives on ten acres of the reforested side of Parish Mountain, a foothill (elevation 851') in sight of Old Rag.

Nicky notes that having been a student of Marion Lobstein is key to her accomplishments! Nicky was board member of the original Flora of Virginia Project through publication in 2012 of the Flora, and at the request of Jim Waggener was partner with Elaine Haug in their three-year flora inventory for Occoquan Bay National Wildlife Refuge (OBNWR). Nicky is a member of the Guild of Natural Science Illustrators and the American Society of Botanical Artists. She has studied botanical watercolors with Lara Call Gastinger, has served on

boards for Trees Virginia and the Fairfax Audubon Society, and is a member of the Madison Garden Club.

Nicky has illustrated for *Wild News* and the VNPS *Bulletin* for many years, especially for “Wildflowers of the Year,” and has

published illustrations for *Finding Wildflowers in the Washington-Baltimore Area*, by Marion Lobstein, Cris Fleming, and Barbara Tufty, Johns Hopkins University Press (1995); *The Virginia Naturalist* by John Trott, VNPS and Middleburg Garden Club (2006); *In the Eye of The Hawk: Reflections Along the Potomac* (2012), and *Potomac Overlook Regional Park Nature Guide* (2003), both by Martin Ogle; and *Isabella's Peppermint Flowers*, by Susan Leopold (forthcoming late 2014).



Please join us for this special presentation by Nicky Staunton. As always, the program is free and open to the public. So, bring a friend or two! Refreshments will be served and doorprizes awarded. If you need a ride to the meeting, please contact Nancy Vehrs at nvehrs1@yahoo.com or (703) 368-2898.

President's Column, November 2014

Nicky Staunton, this month's speaker, has spent much of her adult life fighting for public recognition of the importance of native plants and their communities. When people speak of wildlife, they generally mean charismatic fauna. Nicky gave a voice to the flora, the wildflowers that had none. She has been my inspiration in assuming a leadership role in the society.

After becoming a homeowner in 1987, I attended the PWWS spring garden tour with a friend. The three gardens (which included that of Nancy Arrington) were impressive, but I didn't really think about joining PWWS at the time. Later that year, the *Journal Messenger*, our former hometown newspaper, ran a profile about PWWS president Nicky Staunton. I believe that it also noted that PWWS would be holding a meeting that very evening. With the meeting site very near my home, on a whim I decided to attend. I'm so glad I did! The group was welcoming and everyone seemed to enjoy themselves at the meeting. I had never been much of a joiner until that time, but I decided to formally join PWWS.

Nicky went on to leadership positions at the state level and served a number of terms as VNPS president. She has mentored me and encouraged my participation at all levels. I joined her and her late husband Loren on walks at Conway Robinson State Forest and participated with her and others on trips to the Harry Diamond Lab/Woodbridge Refuge before it became the Occoquan Bay National Wildlife Refuge. She invited me to help dig plants from her former Manassas garden for the annual plant sale. I still remember digging up her lyreleaf sage plants that had escaped from their flower beds and invaded the lawn areas. They thrived in that heavy red clay. She generously let me dig a dogwood volunteer, a progeny of her lovely specimen tree. My tree now brightens a

dark corner. Nicky also talked me into serving a term as VNPS corresponding secretary (before we had an office manager) and, ultimately, she and Sally Anderson convinced me to accept the nomination for president two years ago. Nicky has a gentle, yet persuasive manner, and has worked very hard to find new people to serve in board positions over the years.

Besides being a terrific field botanist, Nicky is truly an artist. Her botanical line art is first rate, and she recently has had much success with water colors. Her artist's eye is evident in her exquisite photography. I look forward to her program on November 17, and I hope that you will join me there. ~ Nancy



Plant NoVA Natives Campaign

The Plant NoVA Natives Campaign is underway! At the September meeting we distributed copies of the new *Native Plants for Northern Virginia* guide, and we will have more copies at our November meeting. This native plant marketing campaign is a partnership of many governmental and environmental organizations, including PWWS/VNPS, and is coordinated by the Northern Virginia Regional Commission (<http://www.novaregion.org/>). The campaign is part of a Virginia coastal plain initiative funded by the Virginia Coastal Zone Management Program. In

addition to some funding from PWWS and other local groups, the guides were designed and printed through grants from the U.S. Department of Commerce, NOAA, to the VCZMP at the Department of Environmental Quality.

The campaign has a website, www.plantnovanatives.org, where copies of the guide are available for viewing or downloading as a PDF. The NoVA Natives campaign has programs ready to present to garden clubs or homeowner associations. Please

contact me at nvehrs1@yahoo.com if you would like to schedule a presentation or would like more information.

~Nancy Vehrs



PWWS member Karen O'Leary

Prince William Wildflower Society
Monday, September 15, 2014 Membership
Meeting, Bethel Lutheran Church, Manassas

President Nancy Vehrs welcomed all to the PWWS annual meeting. She introduced Charles Smith, Conservation and Education Chairman, who read the positions and names on the slate of officers to be elected. Charles asked for a motion to approve the slate as proposed. Janet Wheatcraft moved to accept the slate; Suzy Stasulis seconded the motion, and it passed unanimously.

The slate of PWWS officers for November 1, 2014 until October 31, 2016 will be the following:
President, Nancy Vehrs; vice-president, Tamie Boone; treasurer, Diane Flaherty; and secretary, Karen Waltman. There was also a unanimous motion passed to accept the 2015 Proposed Budget, as presented in the August mailout that was sent to the PWWS membership. Nancy thanked outgoing vice-president Carol Thompson for her service on the board.

Announcements: Upcoming wildflower and nature walks and volunteer opportunities were announced. They are posted on the website and in the newsletter, *Wild News* also.

Program: Helen Hamilton was introduced, and her presentation was "Ornamental Native Grasses." Helen began by recommending Agnes Chase's *First Book of Grasses* as a resource with good keys for identifying grasses. Helen

reminded us that grasses have joints and stems and are round and hollow, and the leaves have overlapping sheaths. Helen showed slides of a variety of native grasses and added information on growing conditions and how they looked in different seasons. Helen is the author of *Wildflowers and Grasses of Virginia's Coastal Plain*, and she signed copies of books purchased at the conclusion of her very interesting talk.

Doorprizes: Carol Thompson, PWWS hat; Veronica Tangiri, Swamp milkweed; Dee Brown, nature journaling set; Judith McDaniel, votive candle holder, Rose Breece, *Plant Invaders of the Mid-Atlantic Area*.



PWWS member Carol Thompson

Happy Birthday to Helen Rawls: Marion Lobstein brought a birthday cake for all to share, and we helped Helen Rawls celebrate her 95th birthday. Helen is a charter member of PWWS, which was founded in 1983.

Those present: Helen Hamilton—guest speaker, Carol Thompson, Leslie Paulson, Linda Binette, Jane Wyman, Jennifer Graham, Lynn Eklund, Rose Breece, Mike and Joyce Wenger, Jack and Deanna High, Anne Louise Gockel, Harry Glasgow, Nancy Vehrs, Tamie Boone, Nell Benton, Mary Sherman, Glen Macdonald, Dee Brown, Janet Wheatcraft, Judith McDaniel, Beverly Houston, Brenda Hallam, Audrea Kinder, Janis Stove, Veronica Tangiri, Tom Attanavro, Janice Beaverson, Susan Beaverson, Charles Smith, Peggy Thiele, Helen Rawls, Helen Walter, Marion Lobstein, Jim Waggoner, Jeanne Endrikat, Karen Waltman.

~Respectively submitted, Karen Waltman, Secretary

PRINCE WILLIAM WILDFLOWER SOCIETY
P.O. Box 83, Manassas, Virginia 20108-0083
Chartered January 10, 1983
Logo: *Mertensia virginia* (Virginia Bluebells)

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WELCOME NEW PWWS MEMBERS!

Prince William Wildflower Society extends a hearty "welcome aboard" to recent new members *Janice Beaverson, Bristow; Isaac Matlock, Woodbridge; Karen O'Leary, Dumfries; and Pamela Popovich, Nokesville.*
~ ~ Janet Wheatcraft, Membership Chair

EVENTS

NOVEMBER

Saturday, November 15, 7:00 to 11:00 p.m., 2014 Leonid Meteor Shower, C.M. Crockett Park, 10066 Rogues Road, outside Nokesville. Fee: \$6 per car. Grab a warm coat and get ready to enjoy the excellent horizons from C.M. Crockett Park outside Nokesville, the perfect stage for the 2014 Leonid Meteor Shower. The Old Farmer's Almanac forecast expects 10 meteors per hour this year, and a new moon allows for the best visibility of the annual shower, which has been a true crowd-pleaser since 1833. The park is just across the Fauquier border, about 10 minutes from Nokesville. For more information, see EarthSky.org.



Monday, November 24, 6:30 p.m., Flower Arranging Class, Flower Gallery, Manassas. Sponsored by PW Master Gardeners and Virginia Cooperative Extension. Doug Burroughs of the Flower Gallery will demonstrate flower arranging. We will do a Fall arrangement. Cost of the class is \$47.50, paid to MGPW, which includes materials. Your payment secures your registration. Mail your check to VCE MGPW, 8033 Ashton Ave., Ste. 105, Manassas, VA 20109. Please include your email address and phone number.

JANUARY and BEYOND

Monday, January 19, 7:30 p.m., Bethel Lutheran Church. Prince William Wildflower Society's Annual Membership Meeting and Slideshow. Join PWWS members and friends for an informal evening celebrating the new year with photos and memories of plants, people, and places from here at home and all over. If you'd like to present, please contact Tamie Boone, PWWS Program Chair (See PWWS Board list, above). Please plan to limit your presentation to about 15 minutes total time. A projector and laptop will be provided or bring your own laptop. More details forthcoming in the next *Wild News*.
Saturdays, January 24, February 7, and February 21, 10:30 a.m. to 1:00 p.m. Chinn Library, Woodbridge, Va. Sustainable Vegetable Gardening Series 2015. These 3 classes cover the essential topics of planning the garden, using organic sustainable techniques to develop healthy productive gardens,

and growing good garden soil. These practices are on display at our Teaching Garden and showcased in our Saturday in the Garden programs. Taught by Master Gardener Paul Gibson and the Master Gardener Cook's Garden Team. There is no charge for these classes; please register by calling the Extension Horticulture Help Desk at (703) 792-7747 or email master_gardener@pwcgov.org

Saturdays, February 14, 28, March 7, 9:00 a.m. to 1:00 p.m., Old Courthouse in Manassas, 9248 Lee Avenue, Manassas. Basics of Gardening 2015, Virginia Cooperative Extension Master Gardeners. Instruction by Master Gardeners and Extension Staff. Students will learn some of the science behind gardening, plant culture, and pest and disease solutions. The series will focus on research-based knowledge of plant resistance, problem avoidance, and the most effective control strategies.

- February 14: Getting Started: The Basics Overview of soils, plant needs, and good gardening practices and techniques.
- February 28: Digging In: Lawns, Landscaping, and Native Plants. Best practices for a healthy yard, groundcovers as an alternative; basic landscape principles; using native plants.
- March 7: Dealing with Problems: Weeds, Insects, and IPM. Common weed identification and control; overview of common diseases & insects in landscapes; control options using Integrated Pest Management with pesticides as a last resort.

COST: Fee of \$45 for the series includes all materials and light refreshments. Couples may register for \$75 for one set of materials. Youth over the age of 16 may register. Questions may be addressed to the Extension Horticulture Help Desk at (703) 792-7747 or by email at master_gardener@pwcgov.org.

Sunday afternoon, February 15, 2015. HOLD THE DATE for a local presentation by Rick Darke, coauthor with Doug Tallamy of the *Living Landscape: Designing for Beauty and Biodiversity in the Home Garden*. Details to follow in the January-February issue of *Wild News*.

Images: Bluebell, Nicky Staunton at the Bruce Peninsula, Bluebird, and Sphinx "worm" on Catalpa, all courtesy of Nicky Staunton; Karen O'Leary and Carol Thompson, courtesy of Deborah Kay Campbell, PWC; Fern lifecycle, California State U. at Northridge, accessed at <http://edutech.csun.edu/eduwiki/>; *Equisetum hyemale* L., Lee Page, Ladybird Johnson Wildflower Center, NPIN image id#41758, accessed at www.wildflower.org.

Fern & Fern-Allies Checklist

By Marion Lobstein, Botany Chair, PWWS; Professor Emeritus, NOVA

In late fall and winter the weather is often still mild enough for a brisk walk through the woods. We tend to think this time of year a dreary and uncolorful season, but if you look closely in the woods, you may still see green foliage or other patterns of color. Lichens, mosses, and some fungi, such as bracket fungi, persist through the winter and are interesting to observe, especially with a little magnification.

The seed pods or berries of many flowering plants also persist through the winter and are worth the effort to try to identify. Some flowering plants retain leaves through the winter: Hepatica, Spotted wintergreen, Crane fly orchid, Rattlesnake weed, and some of the mustard family members, are only a few. Of course, Skunk cabbage hoods are up in December and bloom by January. [See the January-February 2014 issue of *Wild News* (vnps.org/princewilliamwildflowersociety/download/2014_-_wild_news_archive/Wild-News-January-February-2014.pdf) for additional information on Skunk cabbage.] Hepatica may start to bloom by late January.



Another group of evergreen winter plants too often overlooked are the Fern and Fern allies, such as

Horsetails, as well as the Lycophytes (Clubmosses, Spikemosses, and Quillworts).

Lycophytes once were considered fern allies, but now are treated as a separate taxonomic group. (This separation is discussed briefly in the taxonomic article below.) For information on the Lycophytes in our region, please refer to *Wolf's Paws*: "An

Ancient and Interesting

Group of Fern Allies" and "Taxonomy of Lycophyaceae" (vnps.org/princewilliamwildflowersociety/botanizing-with-marion/) or see the Jan-Feb 2013 issue of *Wild News* (vnps.org/princewilliamwildflowersociety/download/newsletter_2013/WILD-NEWS-January-February-2013.pdf).

Below is an updated checklist of Fern and Horsetail species documented to occur in the No. Va. region over to Shenandoah County. Species marked with an asterisk* are evergreen species or semi-evergreen and may be enjoyed during the winter months.

Aspleniaceae (Spleenwort Family)

- ___ *Asplenium bradleyi* * - Bradley's spleenwort
- ___ *Asplenium montanum* * - Mountain spleenwort
- ___ *Asplenium pinnatifidum* * - Lobed spleenwort
- ___ *Asplenium platyneuron* * - Ebony spleenwort
- ___ *Asplenium resiliens* * - Blackstem spleenwort
- ___ *Asplenium rhizophyllum* (*Camptosorus rhizophyllum*) * - Walking fern
- ___ *Asplenium ruta-muraria* * - American wall-rue
- ___ *Asplenium trichomanes* * - Maidenhair spleenwort

Blechnaceae (Chain Fern Family)

- ___ *Woodwardia areolata* (*Lorinseria areolata*) - Net-vein chain fern
- ___ *Woodwardia virginica* (*Anchistea virginica*) - Virginia chain fern

Dennstaedtiaceae (Bracken Family)

- ___ *Dennstaedtia punctilobula* - Hay-scented fern
- ___ *Pteridium aquilinum* (two ssp) - Bracken fern

Diplaziopsidaceae (Glade Fern Family)

- ___ *Homalosorus pycnocarpos* (*Athyrium pycnocarpon*) - Glade fern

Dryopteridaceae (Wood Fern Family)

- ___ *Dryopteris carthusiana* (*Dryopteris spinulosa*) * - Wood fern, spinulose
- ___ *Dryopteris celsa* * - Log fern
- ___ *Dryopteris cristata* - Crested wood fern
- ___ *Dryopteris goldiana* - Wood fern, Goldie's
- ___ *Dryopteris intermedia* * - Wood fern, intermediate
- ___ *Dryopteris marginalis* * - Wood fern, marginal
- ___ *Polystichium acrostichoides* * - Christmas fern

Equisetaceae (Horsetail Family)

- ___ *Equisteum arvense* * - Field horsetail,
- ___ *Equisteum hyemale* * - Tall scouring rush
- ___ *Equisteum sylvaticum* * - Woodland horsetail

Lydodiaceae (Climbing Fern Family)

- ___ *Lygodium palmatum* - Climbing fern

Onocleaceae (Sensitive Fern Family)

- __ *Matteuccia pensylvanica* - Ostrich fern
- __ *Onoclea sensibilis* - Sensitive fern

Ophioglossaceae (Adder's-Tongue Family)

- __ *Botrychium matricariaefolium* * - Daisyleaf grape fern or moonwort
- __ *Botrypus virginianus* (*Botrychium virginianum*) *- Rattlesnake fern
- __ *Ophioglossum pycnostichum* (*Ophioglossum vulgatum*)- Southern Adder's-tongue
- __ *Sceptridium biternatum* (*Botrychium biternatum*) *- Southern grape fern
- __ *Sceptridium dissectum* (*Botrychium dissectum*) *- Cut-leaf or dissected grape fern
- __ *Sceptridium multifidum* (*Botrychium multifidum*) *- Leathery grape fern (only at Big Meadows area in SNP)
- __ *Sceptridium oneidense* (*Botrychium oneidense*) *- Grape fern, blunt lobed

Osmundaceae (Royal Fern Family)

- __ *Osmunda claytoniana* - Interrupted fern
- __ *Osmunda regalis* - Royal fern
- __ *Osmundastrum cinnamomea* (*Osmunda cinnamomea*) - Cinnamon fern

Polypodiaceae (Polypody Family)

- __ *Pleopeltis polypodioides* (*Polypodium polypodioides*) * - Resurrection fern

- __ *Polypodium appalachianum* * (?) - Appalachian rock polypody
- __ *Polypodium virginianum* * - Common rock polypody

Pteridaceae (Maidenhair Fern Family)

- __ *Adiantum pedatum* - Maidenhair fern
- __ *Cheilanthes lanosa* * - Hairy lip fern,
- __ *Pellaea atropurpurea* * - Purple cliff-brake
- __ *Pellaea glabella* * - smooth cliff-brake

Salviniaceae (Floating Fern Family)

- __ *Azolla caroliniana*-Eastern mosquito fern, water fern

Thelypteridaceae (Marsh Fern Family)

- __ *Parathelypteris noveboracensis* (*Thelypteris noveboracensis*) - New York fern
- __ *Phegopteris hexagonoptera* - Beech fern
- __ *Thelypteris palustris* (*Thelypteris thelypteris* or *Dryopteris thelypteris*)- Marsh fern

Woodsiaceae (Lady Fern Family)

- __ *Athyrium asplenioides* - Southern lady fern,
- __ *Cystopteris bulbifera* - Bulblet fern
- __ *Cystopteris protrusa* - Lowland brittle fern
- __ *Cystopteris tenuis* (*Cystopteris fragilis*)- Fragile fern
- __ *Daria acrostichoides* (*A. thelypteroides*) - Glade fern, silvery
- __ *Gymnocarpium appalachianum* (*Gymnocarpium dryopteris*)- Appalachian oak fern
- __ *Woodsia ilvensis* - Rusty woodsia or cliff fern
- __ *Woodsia obtusa* - Blunt-lobed woodsia or cliff fern

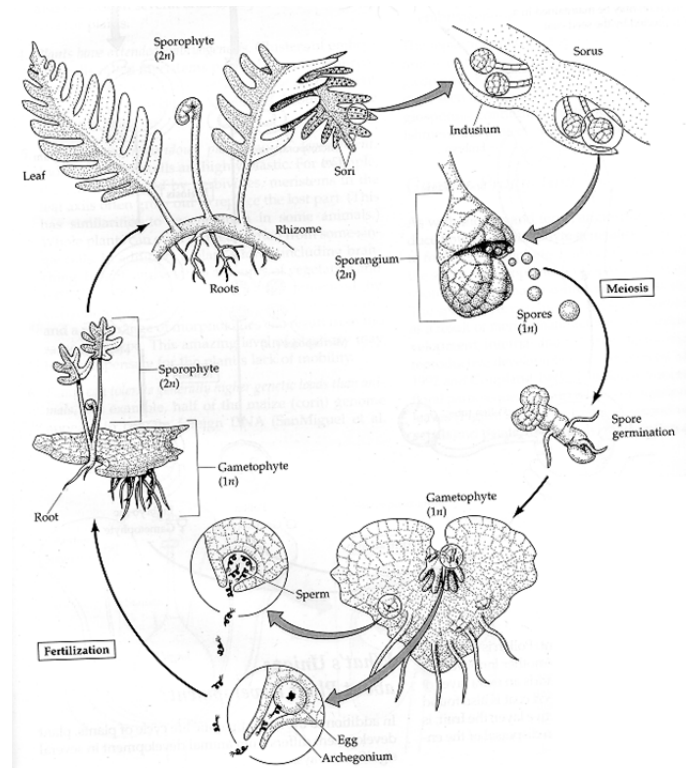
Taxonomic Changes in Pteridophytes

By Marion Lobstein, Botany Chair, PWS and Professor Emeritus, NOVA

The taxonomic treatment of Virginia's vascular plants in the *Flora of Virginia* is based on dichotomous keys and descriptions of family, genera, and species of five groups of vascular plants. (Vascular plants are characterized by specialized vascular tissues, xylem and phloem, which conduct water and sugars throughout the plant). Of the vascular plants, Lycophytes and Pteridophytes make up the seedless groups;

Angiosperms, which are further divided into dicots and monocots, and Gymnosperms form the three groups that are seed plants.

Seedless vascular plants produce three living stages. The first stage, called a gametophyte or the gamete forming stage of the plant, produces flagellated sperm and eggs. Sperm are released into a film of water to swim to structures on the gametophytes that contain eggs. The sperm fertilize the eggs to form embryos that then develop into the sporophyte stage, which produces spores. Spores in turn produce the gametophyte stage. Unlike seed plants, embryos are not encased in a seed with a food supply and (...continued on the last page after the chart)



Pteridophyte (Ferns and Fern Allies) Plant Families in <i>Flora of Virginia</i>	Authority and date family name proposed	Common Names	No. Spp.	Genera	Major Changes Compared to "Traditional" Floras
Pteridophyte Families					
Horsetails (Fern Ally):					
Equisetaceae	L.C. Richard 1805	Horsetails	4	<i>Equisetum</i>	No changes
Ferns: 15 families					
Aspleniaceae	Frank 1877	Spleenworts	8	<i>Asplenium</i>	Genus formerly included in Polypodiaceae
Blechnaceae	C. Presl 1947	Chain Ferns	2	<i>Woodwardia</i>	Genus formerly <i>Lorinseria</i> and included in <i>Polypodiaceae</i>
Dennstaedtiaceae	P. Sermolli 1970	Hay-Scented & Bracken Ferns	3	<i>Dennstaedtia</i> and <i>Pteridium</i>	Genera both formerly included in Polypodiaceae
Dryopteridaceae	Ching 1965	Wood/Shield and Christmas Ferns	9	<i>Dryopteris</i> and <i>Polystichum</i>	Genera both formerly included in Polypodiaceae
Hymenophyllaceae	Link 1833	Filmy Ferns	2	<i>Crepidomanes</i> and <i>Vandenboschia</i>	Both genera formerly in genus <i>Trichomanes</i>
Lygodiaceae	C. Presl 1845	Climbing Ferns	1	<i>Lygodium</i>	Genus formerly in Schizaeaceae
Marsileaceae	Mirbel 1802	Water-Clover Ferns	1	<i>Marsilea</i>	No change
Onocleaceae	P. Sermolli 1970	Ostrich & Sensitive Ferns	2	<i>Matteuccia</i> and <i>Onoclea</i>	Genera in this family formerly included in Polypodiaceae
Ophioglossaceae	Agardh 1822	Grape and Adder's-Tongue Ferns	14	<i>Botrychium</i> , <i>Botrypus</i> , <i>Ophioglossum</i> , and <i>Sceptridium</i>	Genus <i>Botrychium</i> formerly included genera <i>Botrypus</i> and <i>Sceptridium</i>
Osmundaceae	Berchrold & J. C. Presl 1820	Cinnamon, Royal, & Interrupted Ferns	3	<i>Osmunda</i> and <i>Osmundastrum</i>	Genus <i>Osmunda</i> formerly included genus <i>Osmundastrum</i> (Cinnamon Fern)
Polypodiaceae	Berchrold & J. C. Presl 1820	Polypody Ferns	3	<i>Pleopeltis</i> and <i>Polypodium</i>	Genus <i>Polypodium</i> formerly included genus <i>Pleopeltis</i> . Formally included genera in 7 fern families described in <i>Flora of Virginia</i> .
Pteridaceae	Reichenbach 1837	Maidenhair, Lip, Cliff-Brake, and Shoestring Ferns	9	<i>Adiantum</i> , <i>Cheilanthes</i> , <i>Pellaea</i> , and <i>Vittatia</i>	Genera <i>Adiantum</i> , <i>Cheilanthes</i> and <i>Pellaea</i> , formerly included in Polypodiaceae. <i>Vittatia</i> (only found in the gametophyte stage in VA) formerly included in Hymenophyllaceae.
Salviniaceae	Dumortier 1829	Mosquito Ferns	1	<i>Azolla</i>	Genus formerly in Azollaceae
Thelypteridaceae	P. Sermolli 1970	Bog, Beech, and Marsh Ferns	4	<i>Parathelperis</i> , <i>Phegopteris</i> , and <i>Thelipteris</i>	Genera in this family formerly included in Polypodiaceae; Genera <i>Parathelperis</i> and <i>Phegopteris</i> formerly included in genus <i>Thelipteris</i>
Woodsiaceae	Herter 1949	Lady, Bladder, Silvery Spleenwort, Oak, and Woodsia Ferns	10	<i>Athyrium</i> , <i>Cystopteris</i> , <i>Deparia</i> , <i>Gymnocarpium</i> , <i>Woodsia</i>	All genera in this family formerly included in Polypodiaceae; Genus <i>Deparia</i> formerly included in genus <i>Athyrium</i>

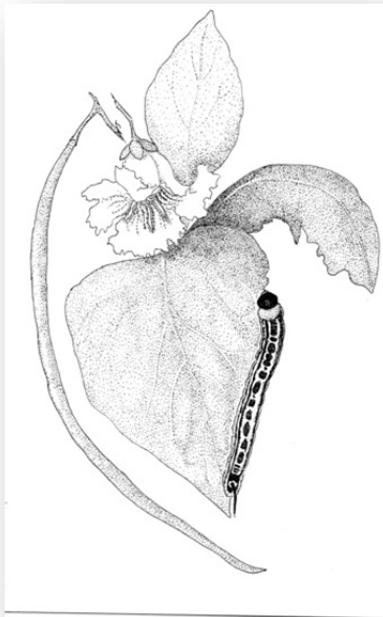
[cont. from p. 6] a protective covering, thus they are called seedless plants. Bryophytes (mosses, liverworts, and hornworts) are a major group of plants that lack true vascular tissues and thus are not covered in the *Flora of Virginia*. Seedless plants with true vascular tissue, the Lycophytes and the Pteridophytes, however, are included. The “Key to Families” on page 92 of the *Flora of Virginia* begins with the first pair of choices (a couplet) describing the gametophyte stage of a Lycophyte or Pteridophyte. Some ferns, such as species of *Vittaria* and *Crepidomones*, are found only in their gametophyte stage. Seed vascular plants—the Gymnosperms (cone-bearing plants) and Angiosperms (flowering plants)—reproduce by forming seeds that protect and nourish the embryonic plant. The gametophyte stages of these plants are formed in the reproductive organs, cones or flowers. The pollen produced by the male cones in Gymnosperms, or anthers in flowering plants, contain sperm and eggs in a female structure called an ovule, which becomes a seed after the sperm fertilizes an egg and the ovule forms the seed with the embryo.

The 1762 edition of *Flora Virginica* used class “Ficiles” to cover the horsetails and ferns known at that time in Virginia. Over twelve genera of ferns and horsetails included in the 1762 edition are still recognized in the *Flora of Virginia* published 250 years later in 2012. The clubmosses were included with the mosses in the *Flora Virginica*. But by the 1800s, Asa Gray and other botanists were separating out the Lycophytes into their own order along with spikemosses and quillworts. By the late 1800s and early 1900s the Lycophytes often were considered fern allies along with the horsetails and whiskferns. By the 1990s, plant taxonomists such as Arthur Cronquist were separating Lycophytes from Pteridophytes.

As DNA analysis of plants has become more practical and more widely used, the genetic differences between these two groups has become more obvious. Fossil evidence, as well as structural differences of the leaves and even the sperm of these groups, has supported the idea that Lycophytes evolved as one of the earliest groups of vascular plants and are as distinct from Pteridophytes as these are from the seed plants. This genetic evidence also has shown that the horsetails and whiskferns, once treated as quite distinct from ferns, actually are closely related to the ferns and should be included with fern taxonomy.

Until the 1960s, most taxonomists lumped most genera of typical ferns into Polypodiaceae. In the 2012 *Flora of Virginia*, however, many of the families of ferns, as you can see by the chart, seem “new.” But, of the fifteen families of ferns and fern allies in the *Flora of Virginia*, nine families were proposed in the 1800s.

Try to see and enjoy some of these beautiful Pteridophytes this winter—whatever name changes there may be!



PRINCE WILLIAM WILDFLOWER SOCIETY
A Chapter of the Virginia Native Plant Society
P.O. Box 83, Manassas, Virginia, 20108-0083

Next Meeting: Monday, November 17, 2014, 7:30 p.m.

“Life is for the Birds? Bed, Breakfast, Bathing, Breeding, and Beyond” with Nicky Staunton
Bethel Lutheran Church, Manassas, Virginia 20110