



# WILD NEWS

## Prince William Wildflower Society

A Chapter of the Virginia Native Plant Society

Number 2015-06

November-December 2015

### **PWWS Membership Meeting**

**Monday, November 16, 2015, 7:30 p.m.**

**Bethel Lutheran Church, Manassas, Va.**

**"Native Bees: Natural History  
and Current Research"**

**Dr. T'ai Roulston, curator, State Arboretum  
of Virginia at Blandy Farm**

With over 20,000 species worldwide and over 300 species in Virginia, bees are a very diverse and important group of pollinators. Using photographs, video clips and pinned specimens, Dr. Roulston will describe their natural history, associations with host plants, and conservation status, as well as ways to encourage and observe them through the construction of artificial cavities ('bee hotels'). In addition, he will describe some local research efforts to map out their distribution and study potential factors influencing their populations. T'ai Roulston is curator of the State Arboretum of Virginia and research associate professor, department of environmental sciences, University of



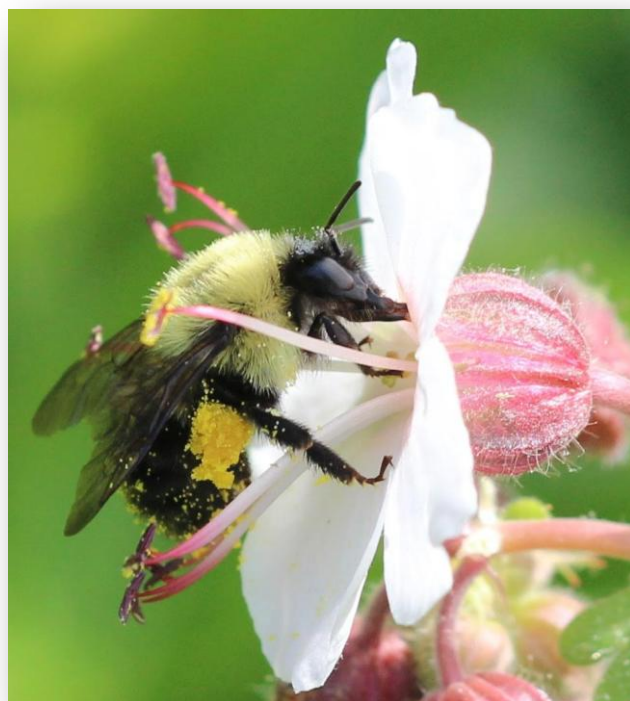
Virginia. He holds a PhD in Entomology from Auburn University, an M.S. in Botany from the University of Tennessee, and a B.S. in Biology from Humboldt State University.

You won't want to miss this fascinating presentation;

bring a friend or two. PWWS programs are free and open to the public. Refreshments will be served and doorprizes awarded!

### **President's Corner**

Winter is coming! It seems hard to believe—as we are experiencing some very warm autumn days as I write. Think about overwintering insects as you clean up your garden this fall. A little untidiness goes a long way toward providing important natural habitat. We'll learn



more about native insects, particularly bees, in this month's program presented by Dr. T'ai Roulston, the curator of the State Arboretum of Virginia located at Blandy Experimental Farm in Boyce. Harry received a sneak preview of T'ai's program when he attended a workshop on pollinators last month at the Smithsonian Conservation Biology Institute in Front Royal. He returned with high praise of the workshop and presenter. Honeybees may be experiencing more than their fair share of attention because our own native bees are in decline and worthy of special consideration.

Even though the end of the growing season is upon us, we look ahead to the PWWS 2016 spring garden tour and native plant sale. We're always seeking native plant gardens to showcase on a public tour. We're not native plant purists, but we do want to show how lovely native plants can be in a garden setting. If you would like to volunteer your garden for this late April event, please contact me at [nvehrs1@yahoo.com](mailto:nvehrs1@yahoo.com). And if you would like to try your hand at propagating native plants for our

annual sale in May, now is an excellent time to collect seeds.

Upcoming events include our annual member slide show on January 18, where I plan to share photos from Cullowhee native plant conference field trips along the Blue Ridge Parkway in North Carolina and from the VNPS field trip to natural areas around Mountain Lake Biological Center near Blacksburg. Do you have some photos to share? Contact Tamie Boone if you do so she can coordinate the program.

For the fourth consecutive year, we have a joint program scheduled for a Sunday afternoon: February 21, 2016. Author and landscape architect **Thomas Rainer** will present on a new book he co-authored with horticulturalist **Claudia West**: *Planting in a Post-Wild World: Designing Plant Communities for Resilient Landscapes*. We are fortunate to have the Master Gardeners of Prince William and the Prince William Conservation Alliance as co-sponsors and the roomy Manassas Park Community Center as the venue.

~ Nancy

**Prince William Wildflower Society  
Annual Membership Meeting  
Monday, September 21, 2015, Bethel Lutheran Church,  
Manassas, Virginia**

President Nancy Vehrs welcomed new member Michelle Borzillo.

**Program: Potomac Environmental Research and Education Center (PEREC)**

Nancy introduced the guest speakers, Dr. Chris Jones and Dr. Cindy Smith. Dr. Jones is the director of PEREC at George Mason University in Fairfax. He and Dr. Smith discussed and showed pictures of the new home being built for the PEREC at Belmont Bay, near the mouth of the Occoquan River. Research there focuses on restoration of the Chesapeake Bay, and eight professors will have their own office and research lab.

Environmental education will continue with school groups and college classes.

PWWS member Nicky Staunton was recognized as painting a mural in Belmont Bay Elementary School, located in the Occoquan Bay area. The mural depicts the rich Chesapeake Bay wildlife.

Dr. Jones also asked PWWS to provide feedback on native plantings that will be installed in a Living Wall,

along a rock border of the building. It was a very interesting look at the new facility that will serve research and education in the environmental sciences.

**Election of the Nominating Committee, to serve a 2-year term:**

The nominees were introduced-Brian McDougal, Veronica Tangiri, and Judith McDaniel.

Harry Glasgow moved, Suzy Stasulis seconded, and the motion passed to accept the slate of nominees.

**Adoption of 2016 Proposed Budget:**

John Pauswinski moved, Suzy Stasulis seconded, and the motion passed to adopt the proposed 2016 budget.

**Announcements:**

Volunteers are needed at the following events; a sign-up sheet is available.

Tuesday, September 29, at the Hwy 95 North and Dale City Rest Area, to help plant natives. Sponsored by Virginia Department of Transportation and the Loudoun Wildlife Conservancy, with assistance from Dominion Power, Plant NoVA Natives, PWWS/VNPS, and Prince William Master Gardeners

October 10, Keep Prince William Beautiful, planting event.

October 17, Recycle Day at the Prince William County Landfill. PWWS will have a booth.

November 16 will be the next PWWS meeting. The speaker will be T'ai Roulston from the State Arboretum of Virginia at Blandly.

Brenda Hallam and Dee Brown were thanked for the refreshments. Dee Brown was not in attendance, but husband Glen McDonald brought Dee's baked goods.

**Doorprizes:** Marion Lobstein, Joyce Andrew's painting of a trillium; Tamie Boone, note cards; Nancy Arrington, *How Plants Work*; Libby Pemberton, *Wildflowers of the Potomac Appalachians*; Brenda Hallam, *A Sand County Almanac*, by Aldo Leopold; Joyce Andrew, *Common Native Shrubs and Woody Vines*.

**In attendance:** Speakers Chris Jones and Cindy Smith, Brenda Hallam, Charles Smith, Libby Pemberton, Janet Wheatcraft, Joyce Andrew, Tom Andrew, Brian McDougal, Nancy Vehrs, Harry Glasgow, Helen Rawls, Marion Lobstein, Elaine Haug, Tamie Boone, Michelle Borzillo, Suzy Stasulis, Nancy Arrington, Rose Breece, Cindy Smith, Karen Waltman, Helen Walter, Tom Attanaro, John Pauswinski, Cathy Clifford, Glen Macdonald. ~~~Karen Waltman, Secretary

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

President: Nancy Vehrs, [nvehrs1@yahoo.net](mailto:nvehrs1@yahoo.net) (Tel: 703-368-2898)  
Vice-President/Programs: Tamie Boone, [tamie.boone@verizon.net](mailto:tamie.boone@verizon.net) (Tel: 703-583-1187)  
Secretary: Karen Waltman, [geraldwaltman@hotmail.com](mailto:geraldwaltman@hotmail.com) (Tel: 703-830-5710)  
Treasurer: Diane Flaherty, [talltrees@verizon.net](mailto:talltrees@verizon.net) or [dflaherty@tnc.org](mailto:dflaherty@tnc.org) (Tel: 703-330-9862)  
Botany: Marion Lobstein, [mblobstein@earthlink.net](mailto:mblobstein@earthlink.net) (Tel: 703-622-0676)  
Conservation & Education and Registry: Charles Smith, [chrlssmith@msn.com](mailto:chrlssmith@msn.com) (Tel: 703-361-5125 or 703-581-8727)  
Membership: Janet Wheatcraft [jwheatcraft@verizon.net](mailto:jwheatcraft@verizon.net) (Tel: 703-369-2499)  
Editor, *Wild News*: Deanna High, [deannahigh@gmail.com](mailto:deannahigh@gmail.com) (Tel: 703-392-3505 or 703-606-9988)  
Plant Sale: Nancy Arrington, [narrington1@verizon.net](mailto:narrington1@verizon.net) (Tel: 703-368-8431 or 703-368-9711 or 703-408-7446)  
Publicity: Vacant  
Refreshments: Brenda Hallam, [billbrendahallam@gmail.com](mailto:billbrendahallam@gmail.com) and Beverly Houston, [bhouston40@yahoo.com](mailto:bhouston40@yahoo.com)  
Advisor: Nicky Staunton, [nstaunton@earthlink.net](mailto:nstaunton@earthlink.net) (Tel: 540-547-2813)  
Webmaster/At Large: Suzy Stasulis [sestasulis@gmail.com](mailto:sestasulis@gmail.com) (Tel: 757-630-4246)  
***Wild News* is published bimonthly; please submit materials for the January-February 2016 issue by January 1, 2016 to Deanna High, editor, [deannahigh@gmail.com](mailto:deannahigh@gmail.com)**

## EVENTS November



**Monday, November 16, 7:30 p.m., "Native Bees: Natural History and Current Research,"** with T'ai Roulston, curator, Virginia Arboretum at Blandy Farm. PWWS Membership meeting. Free and open to the public. See above for more information or contact PWWS VP and Program Chair Tamie Boone at [tamie.boone@verizon.net](mailto:tamie.boone@verizon.net) or (703) 583-1187.

**Thursday, November 19, 7:00 p.m., "A Scenic Byway for Prince William County?"** Gravely Elementary School located at 4670 Waverly Farm Drive, Haymarket. Supervisor Pete Candland is hosting a meeting to discuss the potential for designating Antioch Road as a Virginia Byway. Scenic Byways are characterized as having historic or scenic properties, and Virginia currently has nearly 3,000 miles of designated Byways. A Virginia Scenic Byway designation gives localities the opportunity to participate in the National Scenic Byway Program. **If designated, Antioch Road would be the first Virginia Byway in Prince William County.** Protecting our scenic byways is an inexpensive and forward-looking way to highlight Prince William's unique assets, promote tourism, protect open space, and build a bright future for County residents. Attend this meeting to learn more and share your views. Sponsored by the Prince William Conservation Alliance.

**Thursday, November 19, 6:00 to 9:00 p.m., "Ladies Night Out," at Merrifield Garden Center.**

Get in the spirit of the holiday season with Merrifield Garden Center's sixth-annual Ladies Night Out! Christmas Shops, appetizers, wine tasting, and holiday music. Gainesville and other store locations.

**Sunday November 29, 8:00 a.m., "Bird Walk at Merrimac Farm."** Merrimac Farm Stone House, 15020 Deepwood Lane, Nokesville, Va. We'll look for birds as we travel through the uplands to the edge of the floodplain, covering a variety of habitats, including open fields and woodland edges. Everyone is welcome. View the bird list for Merrimac Farm at [www.pwconserve.org/wildlife/birds/lists/merrimacfarm.htm](http://www.pwconserve.org/wildlife/birds/lists/merrimacfarm.htm). Dress for the weather, bring binoculars and cameras. More info and RSVP (appreciated) to PWCA, (703) 499-4954 or [alliance@pwconserve.org](mailto:alliance@pwconserve.org).



## December

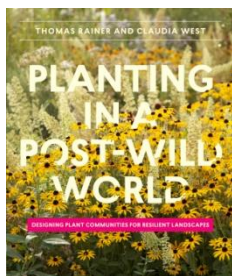
**Sunday, December 27, 7:00 a.m. to 5:30 p.m., "Christmas Bird Count at Nokesville."** Nokesville vicinity, please register to join a team and receive specific location. There are three ways to help with the Christmas bird count: (1) Identify and count birds in the field, beginning birders welcome; (2) Identify and count birds in your backyard, if you live in the circle boundaries; or (3) Prepare and/or serve food to cold, hungry birders at the Merrimac Stone House beginning at 11:00 am. Birders (including beginners) join a team that covers a defined portion of the total count area. We meet midday and at dusk at Merrimac Farm to record the results. RSVP required. To join a team, contact Prince William Conservation Alliance at (703) 499-4954 or [alliance@pwconserve.org](mailto:alliance@pwconserve.org). More information is online at <http://www.pwconserve.org/wildlife/christmasbirdcount/>



## January & Beyond

**Monday, January 18, 2016, 7:30 p.m., PWWS Annual Winter Slide Show.** Join PWWS members and friends for this casual gathering to view photos from all over and to enjoy refreshments and doorprizes. If you would like to share your photos, please contact VP and Program Chair Tamie Boone at [tamie.boone@verizon.net](mailto:tamie.boone@verizon.net) or (703) 583-1187.





**Sunday afternoon, February 16, 2016. HOLD THE DATE for a local presentation by Thomas Rainer and Claudia West, authors of *Planting in a Post-Wild World* (Timber Press 2015). Details to follow in the January-February 2016 issue of *Wild News*.**

## A PARASITIC LIFESTYLE: BEECHDROPS AND RELATIVES

By **Marion Lobstein**, Botany Chair, Prince William Wildflower Society and Professor Emeritus, North Virginia Community College

Two primary characteristics of plants are the light-capturing pigment, chlorophyll, which gives most plants a green color, and the use of this pigment to capture light energy to carry out photosynthesis to produce energy-rich food from carbon dioxide and water. This kind of plant life style is known as **autotrophic** or self-nourishing. Indian Pipe (*Monotropa uniflora*), a species of flowering plants that lack chlorophyll is one you may have noticed growing in rich summer woodlands. It is a member of the Ericaceae (Heath family). This ghostly white species is **saprophytic**, which means it forms a symbiotic relationship with fungi to extract nutrients from dead plant material in the leaf litter or soil.

Another way for flowering plant species to obtain nutrients is to "steal" from a living host. This life style, called **parasitic**, can be either **holoparasitic**, where species lack chlorophyll to carry out photosynthesis and depend totally on the host plant; or **hemiparasitic**, where a species has chlorophyll and is partially photosynthetic but still parasitizes a host plant for part of its nutrients. Three species of holoparasitic plants, members of the Orobanchaceae (Broomrape family), are under discussion here: Beechdrops (*Epifagus virginiana*), Squawroot or Bearcorn (*Conopholis americana*), and One-flowered cancerroot (*Orobanche uniflora*). In *Flora of Virginia* and other modern treatments of Orobanchaceae a significant number of hemiparasite genera, formerly in the Scrophulariaceae (figwort family), are now included

in the Orobanchaceae as well. They are listed in the accompanying taxonomy article, below.

In the autumn, while walking in Beech woods, you may have observed Beechdrops (*Epifagus virginiana*), a parasite on Beech (*Fagus grandiflora*) tree roots, that blooms from September to October. *Epifagus* means "upon beech," derived from "epi," upon, and "fagus," the genus of beech; *virginiana* refers to "Virginia." Beechdrops ranges from New Brunswick west to Ontario and Missouri and south to the Gulf of Mexico. Beechdrops is an **annual** that forms thin, often purple-tinged, yellow-brown 12-inch or taller stems with scattered scales (reduced leaves). The upper flowers are so-called **chasmogamous**, or showy flowers, and are one-inch long and often sterile. The calyx of these flowers is four to five toothed, the white and purple corolla is bell-shaped and bilaterally symmetrical, with two lips on top and three on the bottom, the stamens are four in number, and the ovary is superior. The lower,

smaller flowers do not open. They are self-fertile and are called secret or **cleistogamous** flowers. Research points to possibly bumblebees or ants as pollinators of the chasmogamous flowers. These flowers may even develop underground. The fruits that form are capsules containing many small seeds. The young seedlings begin to grow into the tissue of the host roots. Special short roots called **grappers**



form, and structures called **haustoria** develop from the roots. The haustoria "suck" nutrients from the roots of the host plant.

Squawroot or Bearcorn, also known as Cancerroot (*Conopholis americana*), a better known member of the Broomrape family, is a **perennial** that blooms from May into June. *Conopholis* means "cone-scale," derived from Greek for "conos," for cone, and "pholos," meaning scale; *americana* translates as "America." Squawroot's

habitat is rich woodlands, ranging from Maine to Michigan and south to Tennessee and Florida. It forms a four- to six-inch tall brown, thick stem covered with brown scales that actually are reduced leaves. This cone-shaped structure arises from a thick underground tubercle. The tubercle also forms short roots with haustoria that invade host tissue. The roots of oak species are thought to be the most common host of Squawroot. The less than one-half inch long flowers located on the thick stem are pale yellow, with a toothed calyx, a corolla with two lips on top and three lips on the lower surface, four stamens, and a pistil with a superior ovary. Bee and fly species are possible insect pollinators, but the flowers may be self-pollinated (**autogamy**). The fruit is a capsule with many small seeds maturing while the capsule is still sticky, attracting animals to disperse the fruit and seeds. When the plant is in fruit, it resembles an ear of corn and is eaten by black bears and white-tailed deer.

A third member of this family that may be seen in our area is One-flowered cancerroot (*Orobanche uniflora*), an annual that blooms from April into June. *Orobanche* derives from the Greek “orobos” for vetch, and “ankhō” to strangle; *uniflora* means “one-flowered.” European species of this genus often parasitize vetches or other members of the pea family. The habitat of *O. uniflora* is rich woodlands; it is found in all of the continental states of the U.S. and in most Canadian provinces. One-flowered cancerroot forms an underground ten- to twelve-inch long stem that gives rise to several flower stalks—each with a single flower. Reduced roots originate from the underground stem and form short haustoria called “wart” haustoria. Root systems of various woodland plants are parasitized by this species. In our area, I have often seen it on *Eurybia divaricatus* (formerly *Aster divaricatus*), the White wood aster. The one-inch long, bell-shaped flower has a toothed calyx, a white and violet corolla with two upper lips and three lower, four stamens, and a superior ovary. Even though this species’ flowers have nectar lines that would indicate insect pollination, the flowers may also be autogamous. The fruit of this species, like its cousin Squawroot, is also a capsule containing numerous small seeds.



Few edible or medicinal uses of these species currently are used. All three species may be eaten as “survival”

food, but are not sought out by wild foods enthusiasts. Traditional medicinal use of Beechdrops has included treating stomach problems, such as diarrhea and dysentery, as well as mouth and cold sores. Squawroot once was used by women to ease menstrual or afterbirth pain and as a uterine stimulant to induce miscarriage.

Squawroot also was thought to have sedative and laxative properties and to make poultices for wounds. One-flowered cancerroot is purported also to have laxative and sedative properties.

Members of this strange family are indeed unusual flowering plants. The stems and leaves lack chlorophyll, the leaves are usually reduced to scales, and the root system is much reduced with haustoria formed to invade host tissue. These species are dependent on invading the host plant for all nutrients and water. Even their seeds cannot germinate without the stimulation of fungal species associated with the root systems of the host plants. Although these species have little use to humans as food or medicine, they are worth finding to enjoy their eerie beauty and to contemplate their parasitic lifestyle.

[Photos: Swamp Lousewort (*Pedicularis lanceolata* Michx.), courtesy of Arthur Haines, New England Wildflower Society, accessed at <https://gobotany.newenglandwild.org/>; Squawroot (*Conopholis americana*), Alan Cressler, Native Plant Information Network, NPIN Image id 45815, [www.wildflower.org](http://www.wildflower.org); Beechdrops (*Epifagus virginica*), Alan Cressler, Native Plant Information Network, NPIN Image id 45815, [www.wildflower.org](http://www.wildflower.org). Images: *Orobanche virginiana*. Barton, William P. C. (William Paul Crillon) (1786-1856) (Artist) *Vegetable materia medica of the United States*; or, *Medical botany: containing a botanical, general, and medical history of medicinal plants indigenous to the United States* (1818—1825). New York Public Library Digital Collections, accessed November 7, 2015.]



# BROOMRAPE (Orobanchaceae), FORMER TRIBE OF HOLOPARASITES, WELCOME HEMIPARASITE FIGWORT REFUGEES

By **Marion Lobstein**, Botany Chair, Prince William  
Wildflower Society and Professor Emeritus, North Virginia  
Community College

In the July-August 2012 edition of *Wild News*, PWWS Botany Chair Marion Lobstein wrote about the breakup of the Figwort family, Scrophulariaceae—some months before the December 2012 release of the *Flora of Virginia*. The following is an update on the fate of the traditional Scrophulariaceae, with expanded information on the Broomrape family, Orobanchaceae. The focus is on taxonomic changes of three holoparasites (flowering plants lacking chlorophyll and totally reliant on their host plants for nutrients) common to our area: Beechdrops (*Epifagus virginica*), Squawroot (*Conopholis americana*), and One-flowered cancerroot (*Orobanche uniflora*).

As late as the 1990s, most taxonomists placed roughly 275 genera and 5,000 species worldwide in the Scrophulariaceae. Based on DNA research and other factors, such as lifestyles and morphology of former species of this family, this number has now shrunk to 52 genera and 1,680 species. A chart is included at the end of this article that summarizes changes in the breakup of the Scrophulariaceae specific to the species in the *Flora of Virginia*.

The Orobanchaceae, on the other hand, swelled from 15 genera and 210 species to 65 genera and 1,540 species worldwide. All members of this family are either holoparasites (totally reliant on host plants for nutrients) or hemiparasites (containing chlorophyll and partially relying on host plants for nutrients). Roughly one-half of all parasitic flowering plants are in this family. The Broomrape family, Orobanchaceae, was named by French botanist Etienne Pierre Ventenat in 1799, based on the genus *Orobanche* designated by Linnaeus in 1753. *Orobanche* is derived from ancient Greek, “orobos,” for vetch, and “ankhō,” to strangle. This name originally

was proposed by Dioscorides, the Greek physician of the first century A.D. In his *De Materia Medica*, Dioscorides included uses of broomrape as a potherb.

Species of European broomrape have been a problem in parasitizing crops such as vetch and other members of the legume family (Fabaceae) since Greek and Roman times. The ancient Greek philosopher Theophrastus, considered the “father of botany,” mentioned in his writings Broomrape as a weed. Pliny the Elder, a Roman writer and naturalist of the first century A.D., was the first to recognize parasitic plants when he wrote about European mistletoe (in the Sandalwood family Santalaceae). Nicholas Culpeper in his *Complete Herbal* (1653) described medicinal uses of Broomrape for

urinary tract problems, treating wounds, and other maladies.

In 1753, Linnaeus assigned the name of *Orobanche virginiana* to Beechdrops and *O. uniflora* to One-flowered cancerroot. He used specimens from John Clayton as type specimens to



name both of these species. John Clayton in turn included both of these species in the 1762 edition of the *Flora Virginica*. In 1767, Linnaeus named Squawroot (*O. americana*) and may have used a specimen from South Carolina. In 1818, Thomas Nuttall recognized the difference between the now genus *Epifagus* (also spelled *Epiphagus*) and *Orobanche* and renamed beechdrops *Epifagus virginiana*, which forms the only species of this Genus. In the same year, William Barton published the binomial but gave Nuttall credit for its name. In the 2012 *Flora of Virginia*, Nuttall is listed as the authority, but in other floras or sources credit is given to Barton. Constantine Rafinesque later in 1818 proposed the genus *Leptamium*, but the legitimate name is still *E. virginiana*. One-flowered cancerroot today is placed in the genus *Orobanche*, but has over time also been placed in other genera: *Aphyllon*, proposed by Asa Gray in 1848 and *Thalesia*, by Nathaniel Britton, in 1894. In 1825, German botanist Karl Wallroth proposed the genus *Conopholis*

and Squawroot was included in this genus as *C. americana*. *Conopholis* is a small genus of less than a handful of recognized species.

Since the early 1990s, continuing DNA research on members of the Scrophulariaceae has resulted in this family being disintegrated into a minimum of five families for genera occurring in Virginia. The listing below shows these families and genera as assigned:

Families and Authorities and dates named	Common Name of Families	Number of species in <i>Flora of Virginia</i>	Notes on Changes
Scrophulariaceae  A.L. de Jussieu 1789	Figwort/Snapdragon	7	<b>Genera remaining in Scrophulariaceae:</b> <i>Scrophularia</i> (Figworts) and <i>Verbascum</i> (Mulleins)  Buddleja (butterfly bushes)(formerly in Loganiaceae or in a family of its own, the Buddlejaceae) in now placed in this family
Orobanchaceae  Ventenat 1799	Broomrape	28	Holoparasites traditionally in Orobanchaceae: <i>Conopholis</i> (Squawroot), <i>Epifagus</i> (Beechdrops), <i>Orobanche</i> (One-flowered cancerroot and 3 other rare species of broomrapes not found in our area)  Hemiparasitic genera from Scrophulariaceae: <i>Agalinis</i> (False Foxgloves), <i>Aureolaria</i> (Yellow False Foxglove), <i>Buchnera</i> (Bluehearts), <i>Castilleja</i> (Indian Paintbrushes), <i>Melampyrum</i> (Cow Wheats), <i>Pedicularis</i> (Louseworts), and 3 other hemiparasitic genera ( <i>Dasistoma</i> , <i>Schwalgea</i> , and <i>Seymeria</i> ) rare in Virginia and not found in our area
Phrymaceae  Schauer 1847	Lopseed	5	<i>Phryma</i> (Lopseed) Genera formerly in Scrophulariaceae: <i>Mazus</i> (Mazus), <i>Mimulus</i> (Monkeyflowers)
Paulowniaceae  Nalai-1949	Princess Tree	1	Genus formerly in Scrophulariaceae; <i>Paulownia</i> (Princess Trees)
Linderniaceae  Borch, Muller, and Fischer 2005	False Pimpernel	4	Genera from Scrophulariaceae: <i>Lindernia</i> (False Pimpernels), <i>Micranthemum</i> (Mudflowers)

N.B. The dismantling of the Scrophulariaceae is a very complicated situation; if you would like to check out some online references for more detail on this disintegration of this family, here are some you may want to explore:

"Disintegration of the Scrophulariaceae"  
<http://www.amjbot.org/content/88/2/348.full>.  
 "Review of the systematics of Scrophulariaceae and their current disposition,"  
[http://phylodiversity.net/dtank/Tank\\_Lab/Publications\\_files/Aust.%20Syst.%20Bot.%202006%20Tank.pdf](http://phylodiversity.net/dtank/Tank_Lab/Publications_files/Aust.%20Syst.%20Bot.%202006%20Tank.pdf)  
 "Piecing together the "new" Plantaginaceae,"  
<http://www.amjbot.org/content/92/2/297.full>

"Parasitic Plants: Molecular Phylogenetics of Scrophulariaceae/Orobanchaceae,"  
<http://cwo.huck.psu.edu/parastcplnts.html>  
 "Molecular systematics of the parasitic genus *Conopholis* (Orobanchaceae) inferred from plastid and nuclear sequences,"  
<http://www.amjbot.org/content/98/5/896.full>  
 "Phylogeny of the parasitic plant family Orobanchaceae inferred from phytochrome A,"  
<http://www.amjbot.org/content/93/7/1039.full>  
 "Phylogenetic relationships of North American Antirrhinum (Veronicaceae),"  
<http://www.amjbot.org/content/91/6/918.full>  
 "Redefining Phrymaceae: the placement of *Mimulus*, tribe Mimuleae, and *Phryma*1,"  
<http://www.amjbot.org/content/89/7/1093.full>

## THE SHINING SEASON: NATIVE TREES and SHRUBS BEAUTIFUL in FALL

Just a few of my favorites—What are yours?

**Dogwood (*Cornus florida*).** Variable, but always beautiful, dogwoods account for much of the vivid fall color here, although not nearly as much as they used to! Dogwood is host plant for Spring/Summer Azure butterflies, and a variety of dogwoods create a veritable “kitchen” for birds and other wildlife.

**Hickories (*Carya spp.*)** Pignut hickory and Mockernut hickory both have beautiful habits and tobacco-golden leaves which light up the woods. Grown with native hollies (*Ilex opaca*) as a backdrop, they are unparalleled in autumn beauty. Nuts are eaten by birds and mammals; host for Banded Hairstreak et al.

**American Beech (*Fagus grandiflora*)** Even smaller trees have a full head of tawny leaves swirling down from the crown. The color starts as a pale gold-brown and deepens with the season. Yes, you need a large space for American beech, but it’s worth making room for it. Some beeches hang on to their leaves, which flutter light brown through the winter woods. American beech is an important mast species for small birds and animals as well as deer, turkey, and grouse. Several butterfly larvae are known to feed on the leaves. (Cullina)

**Sourwood (*Oxydendrum arboreum*)** native a bit south and west of us, one still can’t go wrong with this tree that is beautiful at all times of year, but especially in fall, when it turns a brilliant red. Its pendent habit, vibrant leaves, and white racemes combine spectacularly in the fall—a traffic stopper. A source of nectar for bees, wasps, beetles, and flies. Easy to propagate from seed.



**Sweet Gum (*Liquidambar styraciflua*)** My climbing tree as a kid growing up in the deep south. I dearly love it, although some people do not like the gumballs. (They are fun for kids, however, plus the leaf stems are tasty to suck on.) Sweet gum’s starry

leaves and lovely habit make the gumballs worth suffering. Fall color is often spectacular, with green-gold, gold, red, and orange variations. There is no more beautiful leaf on the ground or fluttering in the air in the Fall.

**Sweetspire (*Itea virginica*)** Great at any time of year, but in the fall, its leaves reliably turn deep red and green and droop gracefully over a path. Good in groups and very easy to grow either in deep or partial shade. It is “esteemed as a nectar plant for butterflies and other insects” (Cullina).

**Sweetshrub (*Calycanthus floridus*)** Only rarely occurring in Virginia, the Digital Atlas of Virginia says that the “two vars. of *Calycanthus floridus* ... may have been more geographically and morphologically distinct prior to centuries of cultivation and cross-breeding.” Many cultivars are available for this large shrub. Even the species has in the Fall lemony gold leaves, highlighted by cinnamon-dark bark, a loose, floppy habit, and dark seed pods that hang on through the winter. Plus all parts of *Calycanthus* are fragrant. Crushing a leaf or stem under the nose can provide a quick fall/winter pick-me-up.

~~ Deanna LaValle High

[Sources: Native Trees, Shrubs, & Vines, William Cullina, New England Wild Flower Society (2002); Field Guide to the Butterflies of Loudoun County, Nichole Hamilton, Loudoun Wildlife Conservancy (2012); Virginia Digital Atlas of the Virginia Flora, accessed at <http://vaplantatlas.org/>]



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

*Next Meeting:* Monday, November 16, 2015, 7:30 p.m.

“Native Bees: Natural History and Current Research,” with T’ái Roulston  
Bethel Evangelical Lutheran Church, 8712 Plantation Lane, Manassas, Virginia 20110