

CHINQUAPIN

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Japanese Dodder, *Cuscuta japonica*

By Lytton John Musselman, Old Dominion University

Readers of Chinquapin will be familiar with our most widely distributed and very conspicuous parasitic plant, field dodder, *Cuscuta campestris* (sometimes considered to be conspecific with *C. pentagona*). This species, like all our native dodders in the South is in the section *Grammica* of the genus *Cuscuta*. Species in section *Grammica* have two separate styles and capitate stigmas and produce stem tips with two types of branches—a coiling branch that will wrap around and penetrate a suitable host, and a searching branch that will continue growing and produce more searching branches. The section *Cuscuta*, which includes several introduced weedy species, have linear stigmas and often very fine stems lacking searching branches. The third section, *Monogyna*, has no native North American species, has fused styles and is characterized by especially thick stems (Figs. 1, 2). Molecular work has elucidated relationships in the genus but is not presented here; traditional sections are used for this discussion.

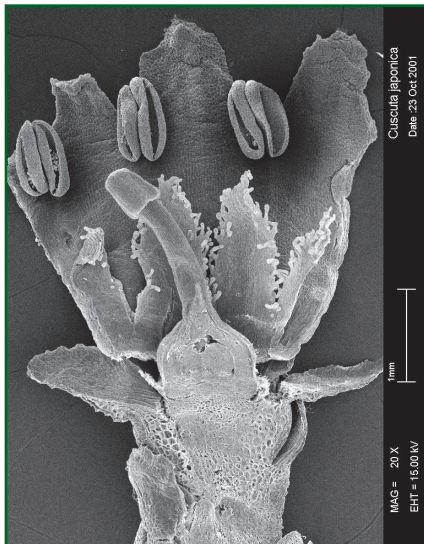


Figure 1. Section of mature flower of *C. japonica* from central Texas. The fused styles are not evident in this section. The fimbriate infrastaminal scales are prominent.

Recently, there are reports of many deliberately introduced populations in California where there is concern that it could infest citrus.

I was surprised to find previously unreported, vigorous populations of Japanese dodder in the Aransas National Wildlife Refuge in Aransas County, Texas parasitizing live oak (*Quercus virginiana*)

Only two species of the section *Monogyna* have been reported to occur in the American South. *Cuscuta cassytoides* was introduced to the Wilmington, North Carolina area but did not persist. On the other hand, Japanese dodder, *Cuscuta japonica* was found in Pickens County, South Carolina and eradicated in the 1990s as a federally listed noxious weed. Later, *C. japonica* was discovered in the Houston, Texas area in 2001, along with another population in central Texas. More

(Fig. 3). Extensive damage to the host was evident. I noticed no other hosts although, like most dodders, the host range of *C. japonica* is broad and there are reports of it causing economic loss on ornamentals and fruit trees.

The stems, like those of other species in the section,



Figure 2. The stems are reddish and chlorophyll is evident in young capsules, a feature of developing fruits in most dodder species.]

(by dodder standards) and the fruits larger than in other sections. Three or four seeds are produced per capsule. Indurate at maturity, they need scarification to germinate.

How did this parasite enter the United States? Perhaps deliberately, as the seeds are an important component of some Chinese medicines.

Within the United States, further spread could be by soil contaminated with dodder seed from nurseries.



Figure 3. Japanese dodder seriously damaging live oak in Aransas National Wildlife Refuge.

Cuscuta japonica is a federally listed noxious weed and new infestations should be reported to the Plant Protection and Quarantine (PPQ) service of the Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture. It is native to the Far East and, interestingly, apparently spread outside its range only in the United States.

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**From The Editor's Desk:****Joe Pollard, Newsletter Editor**

I'm very glad to report that in this issue, Alan Weakley resumes his "Taxonomic Advisory" series. I know that I find his reports very useful, and I hope that the rest of our membership does as well. While nomenclatural changes may at first seem to be a nuisance, they are an unavoidable consequence of the progressive search for new knowledge and understanding that we call science. But for those who are not taxonomic specialists themselves, it can be a real challenge to keep up with the latest findings. Alan does us all a big favor by pointing out some of the most important changes in the scientific names of well-known plants of the Southeast. In this issue he begins a two-part series on southeastern vines.

Also in this issue George Ellison gives us

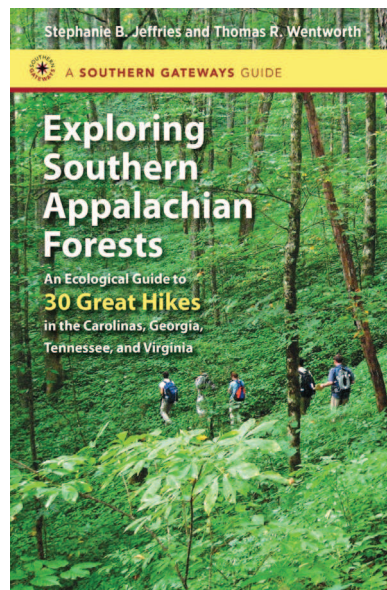
a seasonally appropriate article on Christmas Fern, and Lytton Musselman continues his series on parasitic plants with information about the potentially invasive Japanese Dodder. Longtime SABS members Steph Jeffries and Tom Wentworth have just published a fascinating book on hikes in southern Appalachian forests, and I'm pleased that we can publish an interview with them, explaining their goals in the book and some of the novel approaches that they have used.

And some really exciting news! SABS has finally joined the information revolution by offering our members the ability to pay their dues and vote for officers via the internet.

This is technically the "Winter 2014" issue of the newsletter, though I realize that you won't receive it until 2015. One of my New Year's resolutions is to avoid being late with *Chinquapin*. Honest. I'll try. I hope everyone has enjoyed the holiday season, and I wish you a happy and productive 2015.

Exploring Southern Appalachian Forests: An Interview with the Authors

Editor's Note: The interview reproduced here is a conversation with long-time SABS members Stephanie B. Jeffries and Thomas R. Wentworth, authors of the new book *Exploring Southern Appalachian Forests: An Ecological Guide to 30 Great Hikes in the Carolinas, Georgia, Tennessee, and Virginia* (University of North Carolina Press, Fall 2014). The text of this interview is available at www.ibiblio.org/uncp/media/jeffries/.



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Q: You take a holistic approach to the forest, showing readers how to look at the bigger picture of the environment rather than just the hiking path. What made you choose this approach, and why is it important?

Steph: When we teach our two-week field course in the southern Appalachians, at the Highlands Biological Station, we jump right in and during that first week, we are relentless—traveling to many stops each day and constantly asking the students what they see and what they think about what they see. Quite honestly, we nearly break them. But in the second week, a funny thing happens. The students gradually assume the lead—making observations, asking questions, probing current hypotheses, speculating. In short, they are thinking like ecologists and it is dawning on them that science is really not about what we already know, but instead about discovery. The transformation in such a short time is incredible. We think that anyone can learn to do this, to see the forest and the trees, so to speak. In doing so, your connection with nature broadens immeasurably,

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Taxonomic Advisory!

The Tangled Taxonomy of Southeastern United States Vines (part 1)

By Alan S. Weakley, Director, University of North Carolina Herbarium (NCU, North Carolina Botanical Garden, University of North Carolina at Chapel Hill)

For this edition of “Taxonomic Advisory!” I’ve chosen to concentrate on recent changes in the systematics (and resulting name changes) of a few of our native and introduced vines. However, this twining and tendrilled taxonomic task is too terrible to tie up in one take, so look for a second part in early 2015, with nickers, swallowworts, honeyvines, dogbanes, scuppernongs, and pipevines. As always, I provide here only a brief summary of reasons for the changes, and the reader who wants to understand and independently evaluate the details is encouraged to seek out the more technical publications cited.

Causonis japonica (Thunberg) Rafinesque, Bushkiller (Vitaceae)

Synonymy: = *Cayratia japonica* (Thunberg) Gagnepain – Kartesz (1999); > *Cayratia japonica* var. *japonica* – Chen, Ren, & Wen (2007).

The ominously-named “Bushkiller”, usually heretofore known as *Cayratia japonica* (Thunberg) Gagnepain, has been found as an invasive exotic in scattered locations in the southeastern United States (Kriings & Richardson 2006; Soule et al. 2008; Hansen & Goertzen 2006), but seems likely to become a more serious invasive in the future. Recent phylogenetic studies (Lu et al. 2013) show that what had traditionally been treated as *Cayratia* subg. *Discypharia* (based on morphology and biogeography) is more closely related (sister) to the genus *Tetrastigma*, and should be recognized as a separate genus, *Causonis*. The oldest available genus name is Rafinesque’s *Causonis* (1830).

Ampelopsis glandulosa (Wallroth) Momiya, Porcelain-berry (Vitaceae).

Synonymy: > *A. brevipedunculata* (Maximowicz) Trautvetter – most previous eastern North American references; < *A. heterophylla* (Thunberg) Siebold & Zuccarini – Small (1933); > *A. glandulosa* (Wallroth) Momiya var. *brevipedunculata* (Maximowicz) Momiya – Chen, Ren, & Wen (2007)

This invasive liana (native of eastern Asia) is naturalized fairly extensively in eastern North America, especially in the “BosWash” urban/suburban corridor from northern Virginia to eastern Massachusetts. Most North American references refer to it as *Ampelopsis brevipedunculata*, but the best recent evidence seems to suggest that it is at best a variety (as treated in the Flora of China) or more likely just a form of *Ampelopsis glandulosa*.

Nekemias arborea (Linnaeus) J. Wen & Boggan, Peppervine (Vitaceae).

Synonymy: = *Ampelopsis arborea* (Linnaeus) Koehne – all previous eastern North American references.

The common peppervine, a familiar liana of swamps, marshes, bottomlands, streamside thickets, and maritime thickets from southeastern Virginia, southwestern West Virginia and southern Illinois south to southern Florida, Texas, and northern Mexico differs very obviously from other members of *Ampelopsis* in the region – the native *Ampelopsis cordata* Michaux and the Asian introductions *Ampelopsis glandulosa* (see above) and *Ampelopsis aconitifolia* Bunge – in having bipinnately to tripinnately compound rather than simple and cordate (grapelike) leaves. Recent molecular analyses (Nie et al. 2012; Wen et al. 2014) show the compound-leaved *Ampelopsis* species as a separate clade from simple-leaved *Ampelopsis*, with additional morphological differences that had previously resulted in their placement as a separate section (sect. *Leeaceifoliae*) of *Ampelopsis*. Nie et al. (2012) suggest that these two clades have been separate for about 40 million years. The simple-leaved clade retains the name *Ampelopsis*; the oldest available name (1838) for the compound-leaved taxon is *Nekemias* Rafinesque. Rafinesque certainly had a talent for coming up with unusual-sounding genus names based on nonstandard Latin, and *Nekemias* has that Rafinesquian “je ne sais quoi”... or perhaps suggests an Old Testament figure: “and in the third month, Nekemias, the king of Bashan who dwelt at Edrei, came out of the city to confront the army...”

Lackeya multiflora (Torrey & A. Gray) Fortunato, L.P. Queiroz, & G.P. Lewis, Cluster-pea (Fabaceae).

Synonymy: = *Dioclea multiflora* (Torrey & A. Gray) C. Mohr – most eastern North American references; = *Galactia mohlenbrockii* R.H. Maxwell – Maxwell (1979)

Lackeya multiflora grows in swamps, bottomlands, and old fields in the southeastern United States, especially the lower Mississippi River embayment (“the Delta”) from southern Illinois and western Kentucky south through eastern Arkansas and western Tennessee to Mississippi, Louisiana, with more scattered occurrences in the East Gulf Coastal Plain (east to Georgia) and the West Gulf Coastal Plain (west to eastern Texas). Originally named in the genus *Dolichos*, it has since been transferred to *Dioclea* by Charles Mohr in 1901, to *Galactia* (Maxwell 1979), and finally to *Lackeya* (Fortunato et al. 1996). When a plant starts acquiring “genus frequent flyer miles”, it’s often a sign that it’s being forced to fit into genera in which it does not belong, and that seems to be the case here; *Lackeya* is a monotype (a genus with only a single species), recognizing that although it is related to *Dioclea* and *Galactia* (in the same subtribe), its distinctive morphological features and biogeography warrant independent generic recognition.

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BOTANICAL EXCURSIONS

Polystichum acrostichoides: Circular Bouquets and Variant Forms

By George Ellison; artwork by Elizabeth Ellison

One of my favorite times to observe ferns is in winter when their green hues enliven the winter landscape. Of the 70 or so species collected in the Southern Blue Ridge Province, perhaps a fourth are evergreen. These include walking fern, rockcap fern, resurrection fern, intermediate wood fern, several of the so-called “grape fern” species, and others.

The evergreen fern I can always count on is Christmas fern (*Polystichum acrostichoides*), which occurs primarily in rocky woodlands east of the Mississippi. It is surely the most common evergreen fern in the Southern Appalachians.

Christmas fern arises from a scaly rhizome. The fiddleheads (croziers) that appear in spring are covered with silvery scales. Mature fronds are sometimes more than 30-inches in length.

The species is dimorphic. Spore-producing fronds are more narrow overall, especially at their tips. Look on the underside of a fertile tip and you’ll see the cases (sporangia) in which the dust-like spores develop. They are almost always taller than the vegetative fronds, with wider spacing between the pinnae that facilitates wind dispersal of the spores.

Home gardeners should be aware that once the spores are shed, the fertile tips turn brown, curl and wither. This is part of the plant’s natural life cycle, not an indication that your Christmas ferns are diseased or dying.

The patterns in which spore cases are shaped and arranged are often the essential item used to differentiate various otherwise similar fern species. But identifying Christmas fern doesn’t require that sort of scrutiny. It is readily identified by the distinctive shape of the leaflets (pinnae) that make up the leafy portion (blade) of the frond above its stalk (stipe).

Because of its upper auricle (thumb-like protrusion) each pinna reputedly resembles Santa’s sleigh when viewed on a horizontal plane, or a Christmas stocking when held vertically. This holiday motif is sounded again in the common name, which arose because the species was used by the earliest New England settlers for seasonal decorations. They are still frequently cut for decorative purposes or used as potted plants for seasonal arrangements.

Christmas fern is so common we tend to overlook the handsome bouquet-like circular designs mature clumps of fronds emerging from the same rootstock often display. These are especially attractive when overarching “sprays” of



fertile fronds emerge from a supportive bed of vegetative fronds. And they also create graceful cascades of fronds where rootstock has taken hold along the brow of a cliff or other rock formation.

When examining Christmas fern in the wild, keep in mind that pinna and blade shapes often vary from plant to plant. They differ especially in regard to the amount of serration along the pinna edges. I have underlined the language employed in various sources to describe and (more often than not) dismiss attempts to secure taxonomic recognition for variant forms of this species.

In the *Manual of the Vascular Flora of the Carolinas* (Chapel Hill NC: UNC Press, 1968), A.E. Radford, H.E. Ahles, and C.R. Bell noted that: “Bristle-tipped, curled, incised, frilled, twice-pinnate and other forms have been described as sporadic curiosities.”

In the Centennial Edition of *Gray’s Manual of Botany* (New York: American Book Company, 1950), Merritt Lyndon Fernald categorized them as an “endless” array of “teratological and taxonomically unimportant forms.” (I had to look teratological up. It means “abnormal.”)

In his *Field Manual of the Ferns and Fern-Allies of the United States and Canada* (Washington DC: Smithsonian Institution Press, 1985), David B. Lellinger noted that, “Several forms and varieties of this species have been described that appear to be based on developmental abnormalities ... For instance, it has been shown that *P. acrostichoides* f. *incisum* is not genetically fixed, for fronds of this ‘form’ appear sporadically on normal plants of *P. acrostichoides*.”

In his *Ferns of the Smokies* (Gatlinburg TN: Great Smoky Mountains Association, 2005) Murray Evans, retired plant taxonomist and fern authority at the University of Tennessee, noted that, “There are many named varieties and forms for this species based on peculiar and conspicuous leaf variations, but none are considered important taxonomically.”

Nevertheless, I have always maintained an interest in the variant forms of plants and animals that recur with regularity in the wild. I am of the opinion that being aware of and on the lookout for such variants helps one pay closer attention to the natural world.

For instance, when *Sibley’s Guide to Birds* (New York: Alfred A. Knopf, 2000) came out, it was the first field guide to describe significant variant forms the average birder might anticipate encountering. Until I saw them in *Sibley’s*, I had no idea there was an orange variant of the scarlet tanager or that about one in every 200 slate-colored juncos will display white wing bars. Within a few days of reading about them, I had spotted both forms in the wild.

Jesse M. Shaver’s *Ferns of the Eastern Central States with Special Reference to Tennessee* (New York: Dover Publications, 1970; originally published in 1954 by Peabody College as *Ferns of Tennessee*) is a manual I use a lot because it’s one of the few guides that depicts the variant forms for numerous fern species. Shaver’s descriptions and illustrations for Christmas fern take up 13 pages, describing six “distinctive” forms.

In his *Ferns for American Gardens* (Portland OR: Timber Press,

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because you have a holistic understanding of why the forest you're standing in looks the way it does. So many connections are formed that you'll never look at a forest in the same way, ever again.

Q: What makes your "ecological guide" different from other hiking books?

Tom: Many other hiking books are focused on the details of a trail as a way to get from point A to point B. This is not a bad thing—we all need to know trail conditions, elevation gain and loss, points of interest, directions that keep us on track (and not lost), and so forth. Indeed, we love and use such trail guides ourselves. However, we offer our readers something entirely different. While some guides will comment briefly on historical events, forest types, or points of particular interest, none offer the ecological view that we provide. We teach hikers how to read the landscape and to appreciate the ecological components and processes that makes these forests what they are today. We feel that this is a unique contribution to the hiking literature.

Q: How did you manage to narrow down the many possible hikes to just the 30 trails included in your guide?

Steph: Goodness me, I am still discovering new trails that would have been perfect for the book. It wasn't easy. On one summer day, I hiked nearly every trail on the western rim of Linville Gorge—including Linville Falls, Pine Gap, Babel Tower, and Wiseman's View—to choose the best one for the book (I ate the biggest slice of pie in western North Carolina that night, while icing my knees). We wanted to represent a broad cross-section of the region and natural communities, of course, as well as varied distance options. Accessibility was also important to us—we wanted to reach the broadest possible audience. There are five trails that are at least partially accessible to those with physical disabilities. Most importantly, each trail we chose has a great story—some are historical, some are mysteries or dramas, and a few even have surprise endings.

Tom: I'll add that many, many people offered suggestions of hikes they thought should be included in this book. Certain

hikes were mentioned so often that there was never any question that we would include them. In other cases, little-known gems suggested by just one or two friends and colleagues proved to be ideal. As Steph says, in the end we had to make some hard choices among many great candidates.

Q: Because trails and forests are susceptible to natural events, like fires or tornados, what provisions did you take while writing in case of any sudden major changes to the included hikes?

Steph: [Laughs] The full manuscript went to the Press on November 8th, 2013. On November 12th, I sent Tom an email. "Hike 22 is on fire!" Linville Gorge was burning, from an unattended campfire in the Table Rock Picnic area, and eventually spread to about 2000 acres. Fortunately, we had covered the possibility of a fire in this area when writing the hike's narrative. Indeed, fire is the major theme of Hike 22, with a sidebar featuring two fire-adapted pines. So this hike is still up-to-date in a very real sense. Throughout the book, we emphasize the idea that change is the only constant, and we teach readers to piece together the story for themselves. On a more practical level, we try to avoid pointing out specific features like large, old trees, because we know they may not be there or be visible forever. Each hike is a snapshot in time, but we teach readers how to look for clues that will help them interpret the inevitable changes that will occur after our book is published. If we have done our job well, we have taught readers to read and interpret the landscape for themselves—not only for these thirty hikes, but all over the southern Appalachians.

Q: You say "the present can only be fully appreciated in the context of the past." How so?

Tom: Most of the natural communities we see reflect events in the past. Nature has no recipe that dictates exactly what will be found at each place. Instead, environmental conditions provide broad guidelines, which are then influenced by time and space. For example, we note the absence of red spruce and Fraser fir on some summits that should support them, given their elevation and other environmental attributes. As we discuss, understanding such absences requires that we consider climatic fluctuations in the

past that may have driven spruce and fir off the summits, as well as processes that may have prevented their return.

In the more distant past, evolutionary processes, climate disruptions, and major geologic changes (such as continental drift and the formation and breakage of land bridges) have also shaped the natural communities we see today. Without the historical perspective, we are severely handicapped in our ability to understand the present.

Steph: Right! Each place you visit, whether you realize it or not, reflects past events, with forces that made the natural community you see there today unique. I'll add that you have to consider recent history as well—human history and natural disturbances such as fire, fire suppression, storms, and logging—to truly understand the story of the place.

I'm also a trail runner. Something I love about trail running is the amount of ground I can cover in a beautiful place on my own two feet. I'm not especially fast, and I often take my camera. Also, I find that the singular focus required to stay upright wholly occupies the distracted part of my mind, leaving the rest of my brain free to wander. Like most people whose lives exist in multiple dimensions (for me, that includes mom, professor, runner, business owner, and writer), my life can be pretty noisy. Running trails through the forest is my favorite way to quiet my mind, and, as a result, do my best thinking.

Q: After reading *Exploring Southern Appalachian Forests*, how might I see my favorite hike in a different way?

Tom: You've said this is your favorite hike, so there are things about it that you already love. Perhaps this hike is a favorite because it offers the calming influence of nature, "far from the madding crowd." It may offer particular aesthetic charms, or perhaps a chance for birding, botanizing, berry picking, healthy exercise, or a spectacular view of waterfall or landscape. After reading *Exploring Southern Appalachian Forests*, we hope that you will have added to these individual elements a broader appreciation of the hike's natural setting. You will "see the forest" in addition to the many other things that drew you to this hike in the first place. As you take subsequent hikes, you'll

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Botanical Brainteasers

By Joe Pollard and Janie Marlow

The fall Brainteasers [Chinquapin 22(3)] were (1) *Juniperus virginiana*, (2) *Tsuga caroliniana*, (3) *Vernonia noveboracensis*, (4) *Cornus florida* and (5) *Acer pensylvanicum*. (The *Vernonia* was easier to identify in color; remember that color images are posted at <http://sabs.appstate.edu/chinquapin-issues>.)

So which was the odd one out? Many people noted that all seem to be named after U.S. states (*noveboracensis* is a Latinized reference to New York). But wait - is that right? Like most species in this list, *Cornus florida* was named by Linnaeus in *Species Plantarum*, published in 1753. Linnaeus gave the habitat as "in Virginia", so it's unlikely he would name it after a Spanish colony hundreds of miles to the south, and if so the correct Latin would be *floridana* or *floridensis*. Almost certainly he used florida as a Latin adjective meaning "flowery". Ponce de Leon called our southeastern peninsula La Florida because of its abundant flowers, the word "florida" being identical in Latin and Spanish. All the other Brainteasers commemorate a colony or state, but the Flowering Dogwood and our 27th state got their names independently from the same root word; one was not named for the other.

Many readers came close, and some had other interesting ideas. Two people got all the species right and guessed exactly what we had in mind for the puzzle: Milo Pyne and Jean Everett. Milo got his answer in a bit sooner so he's the winner for this issue, but Jean has sent answers for all three Brainteasers this year, so she's a strong contender for the year's prize of a copy of *Woody Plants of Kentucky and Tennessee*, to the person with the best record across all of Volume 22. But we have one more competition to go!

Shown here are five plants that at first glance seem very different from each other. See if you can identify all five, figure out what feature four of them share, and why one of them really doesn't belong.

Please address all correspondence regarding Botanical Brainteasers to joe_pollard@att.net. (That's an underscore character between first and last names.) If you prefer, send snail-mail to Joe Pollard, Biology Department, Furman University, 3300 Poinsett Highway, Greenville, SC 29605. Images are ©JK Marlow.



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2005), John T. Mickel cites four variant forms differentiated by blade and pinnae morphology: (1) *P.a.* var. *crispum* (pinna edges ruffled); (2) *P.a.* var. *cristatum* (tip of blade crested); (3) *P.a.* var. *incisum* (pinnae deeply and coarsely toothed with all of the pinnae fertile rather than just the terminal third of the blade); and (4) *P.a.* var. *multifidum* (blades almost pinnate-pinnatifid).

In his (New York: Hawthorne Books, 1964), F. Gordon Foster provides line drawings of five

variants based on their edges, degree of tapering and twisting, and presence or absence of bristle tips.

Categorizing them as “peculiar” or “sporadic” and even “teratological” most taxonomists would probably just as soon they went away. But there they are ... popping up here and there with great regularity ... almost impossible to ignore.

George and Elizabeth Ellison are based in Bryson City, NC. www.georgeellison.com ; www.elizabethellisonwatercolors.com

Interview continued from Page 29

appreciate the diversity of species that occur along your favorite trail, and why they've formed the particular natural community you see. You'll understand how both recent and deep histories have much to teach us about why your hike's natural community is the way that it is. We also think you'll be more attuned to the threats to the well-being of your favorite hike, so that you'll be more inclined (and better prepared) to help protect its future integrity.

Q: One final question. Why did you decide to write this book? What do you hope to accomplish?

Steph: Fundamentally, *Exploring Southern Appalachian Forests* teaches readers how to think like ecologists, and more broadly, scientists. We guide them by asking them to engage with their surroundings—to make

a leaf collection, to look for seedlings on the forest floor, to see how far they have to dig to hit mineral soil or bedrock. We ask questions: What does it mean when a northern hardwood forest becomes 80% red oak as you hike further up the trail? Why can't you find pine seedlings under the shelter of their parents? Which tree is going to fill the gap left by that giant hemlock tree? Why aren't there trees on this grassy bald? We tell stories, sharing with our readers what we already know, what we think we know, and what we still don't know.

In a broader sense, we hope to create more ecologically literate citizens. In my opinion, scientists don't place enough value on this goal. Too often, we preach to the choir, publishing research in journals only read by a small subset of our colleagues. Professionally,

we are valued by the number of articles we publish and by the amount of grant money we can garner, not by the number of people we reach. Along the way, we've forgotten how to connect to a broader, public audience. We've become myopic. Then, we're surprised and disconcerted when climate change and evolution are successfully (in the political realm) attacked by politicians.

In the end, Tom and I wanted to become good storytellers—to help people see and understand what science is and how it works. This is what we hope to accomplish with our readers—to develop their capacity to observe, ask questions, and seek answers. If we are successful, this book could well be our most important contribution to our field.

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Annual Meeting Coming Soon

The annual meeting of the Southern Appalachian Botanical Society will, as usual, be held in conjunction with the meetings of the Association of Southeastern Biologists. The 2015 ASB meeting is scheduled for April 1-4 in Chattanooga, Tennessee. For more information, abstract submission instructions, and registration, please go to the ASB website, www.sebiologists.org.

The deadline to submit an abstract for the meeting is January 25. Students who are SABS members should consider applying for the SABS awards for oral and poster presentations, as described in the online abstract submission documents. Registration for meeting activities will begin soon.

SABS Elections – Vote on Paper or Online

If you've gotten over the shock of online dues payment, guess what? The elections of SABS officers have also moved online. You should have received a paper ballot through the regular mail, and if you prefer to cast your vote by snail-mail, you can still do so. But you should have also received an email from President Cathy Mathews with a link to a confidential Qualtrics website where you can cast your votes online.

There are many important elections this year. There are two candidates for president-elect, Mac Alford and Charles Horn. There are also two candidates for Membership Secretary, Michael Held and Brian Keener. And finally, there are two candidates for Member-at-Large to Council, Jennifer Boyd and Steph Jeffries. Biographical sketches are online at <http://sabs.appstate.edu/membership/sabs-ballot>. Votes are due by March 25, and the outcome will be announced at the SABS Business Meeting at ASB-Chattanooga.

