

# CHINQUAPIN

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## Eastern Mistletoe

Mistletoes are parasitic shrubs that grow on trees. There are several families of mistletoes; they reach their greatest diversity in the tropics where most have large, showy bird-pollinated flowers. In the Eastern United States we have only two species with drab minute flowers. Dwarf Mistletoe, *Arceuthobium pusillum*, is northern and occurs on black spruce (*Picea mariana*). Mature plants are only a few mm tall. The other is the very widespread, well-known Eastern Mistletoe, *Phoradendron leucarpum*, a much larger species growing on a wide array of host trees—I have even seen it parasitizing Poison Ivy!

The scientific name of Eastern Mistletoe means “growing on a tree and having white fruits”, an apt description though it has also been known as *Phoradendron serotinum* and *P. flavescens*. This mistletoe is an obligate parasite because it must have a host to survive yet it produces most of its own food through photosynthesis, depending on its host for materials carried in the water stream.

Unlike any other parasitic plant, mistletoes have a long tradition of use at the winter equinox, a custom Europeans brought with them from northern Europe where the European Mistletoe, *Viscum album*, was venerated by the Druids because it is green and vibrant in the dead of winter at a time its deciduous tree hosts have lost their leaves. The stark branches of the oaks and apples and other hosts look dark and lifeless yet in the upper boughs are the heavenward verdant mistletoes. How this imagery plays into the custom of kissing under

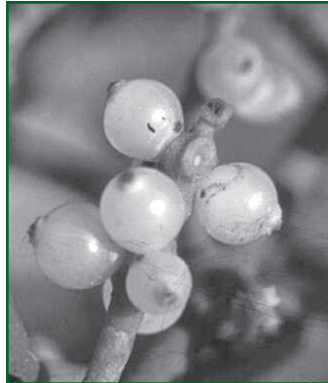
the mistletoe is not clear and is not necessary to justify hanging the twigs with their white fruits over doorways.

This species is dioecious, that is, has unisexual plants so about half of the mistletoes lack fruits. What is not generally known is that the fruiting plants are also in full flower. It takes one year for the fruits to develop. These are below the flowering branch. But you will have to look carefully to see them because they are among the smallest flowers of any of our native plants. They are yellowish-green and only a few mm in size.

Unlike its purported role in bringing humans together, we know very little about what brings mistletoes together. They do not have the structure of wind-pollinated flowers as might be predicted of plants growing in trees. Rather, I think insects play a role in pollination as there are tiny nectary-like structures in the flowers. And analysis of honey from the American South revealed mistletoe pollen in the honey indicating bees visit the flowers. Few other nectar sources would be available to bees in the dead of winter.

Like its tropical relatives, Eastern Mistletoe depends on birds for the dispersal of its fruit. This undoubtedly explains why there are often dozens of mistletoe plants in the crown of a tree. Like pollination, we know little about the role of birds in the movement of fruits. Two scenarios have been suggested. The first is that the

**Mistletoe continued to Page 32**



*Eastern Mistletoe fruits in the winter with white, translucent berry-like fruits.*



*Mature fruits of Eastern Mistletoe.*



*A heavily infested Silver Maple*

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## From The Editor's Desk:

**J. Dan Pittillo, Newsletter Interim Editor**

We all know the climate is changing, whether brought on by the rapid release of fossil fuels or a process that simply continues the cycles of climate change. There are already signs that our Appalachian Mountain vegetation will be changing for centuries to come, just as it has done in centuries past. Hazel and Paul Delcourt have spent their professional lives reconstructing how these changes have taken in the past 50,000 years. Hazel notes we should not think that we should attempt to reconstruct those PreColumbian forests first entered by the Europeans as they will continue to change in response to the climate changes now taking place. If on the otherhand you would like to see what those PreColumbian folks were like, George Ellison introduces us to the best history we have of the Cherokee plant lore with his article on James Mooney. How the Cherokee viewed plants is quite different from how we do nowadays.

Perhaps no better vision of the relationships of interactive plants is that exemplified in Lytton Musselman articles. He has made parasitic plants central to his professional life as many readers know. He continues here with the familiar mistletoes, a plant everyone knows about in this upcoming season. How we carried the kissing mythology forward from our European cultures is still a mystery but one not likely to disappear soon.

Linda Chafin continues to report on the plants that all field botanists delight in discovering: rare species. Most of these are plants living beyond our Appalachian forests but may have been part of our flora in some by-gone day. Maybe you will be lucky enough to discover some of her described plants in your field excursions in the Southeast.

Alan Weakley is back with us to present more changes in taxonomy that is certainly difficult for us to keep up to date (just look at the reference list he gives!). But the service his efforts provides for us is a chance to begin learning how the science is moving the understanding of our plant relationships that we have not had before. So, hold on to these articles and maybe note them in your copies of your manuals. When Alan finally gets his publication in print, maybe it won't be such a shock to our minds!

## Big Changes for *Castanea*

Our venerable journal, *Castanea*, has just celebrated its 75<sup>th</sup> year of publication—a memorable event in the life of the journal and the society. Concurrent with this is a complete change in the way *Castanea* will be edited and produced.

One of the charges I accepted when becoming President of the Southern Appalachian Botanical Society was how to ensure that *Castanea* remains the choice for publishing of papers dealing with the botany of the Eastern United States. While other, competing, journals were rapidly moving to online publication we had little to offer. To address these concerns, I asked Bob Peet (of UNC-Chapel Hill) to chair a committee to look into ways to ensure the viability and vitality of *Castanea*.

After much work, considerable research, and a meeting with our publisher a report was prepared for presentation to the SABS Council at our April meeting which was unanimously approved. The report was then presented at our business meeting of the SABS membership where it again received unanimous approval. The entire report has been posted on our website at <http://www.sabs.appstate.edu/>. Perusal of this document will clearly indicate how much effort Bob put into this.

This report is a comprehensive review of SABS' functions especially relating to *Castanea*. In short, SABS will enter a cooperative publishing agreement with Allen Press, our current printers. Articles will be reviewed in a much more expeditious manner, be posted on the Web as soon as possible, allow for virtually unlimited supplemental material (data sets, images, videos), and much more. A dues increase of a modest \$10 was also approved at the business meeting. After our agreement is formalized more information will be available. This was not a decision that came easily but only after many months of discussions and consultations. Editing once handled by our Managing Editor, Audrey Mellichamp, will now be handled through Allen Press. One of the reasons *Castanea* is in a condition to make this radical and much needed change is because of the quality of editing by Audrey. Her careful attention to all the minutiae of manuscripts is a matter of record which will live on in the trove of papers now available to the scientific public. The SABS Council and general membership have all expressed their appreciation for her work and for her devotion to our society.—Lytton Musselman



## New Castanea Website to Launch January 3, 2012

We are pleased to announce that *Castanea* will have a dedicated online journal web site hosted on the Allen Press Pinnacle platform: [www.castaneajournal.org](http://www.castaneajournal.org).

You will have new search options, be able to create a customized personal reader profile and receive e-mail alerts when a new issue is published.

### New Search Options

- Advanced search
- Related content search
- Create a Personal Profile
- Saved searches
- Manage favorite titles and articles
- Change password
- Manage citation downloads with a citation manager
- Receive E-mail alerts
- eTOC
- RSS

### How to Access *Castanea* Online

When you visit the site for the first time, you will need to register as a new user.

When the site launches, you will receive an auto-generated email with information about registering on the site. The email will contain a hot link you will need to verify your email address and register on the site.

When you click the link, you will be taken to a registration page.

Next, you'll register using your e-mail address your log-in.

Then, you'll choose a password. Passwords must be at least 6 alphanumeric characters in length and are case-sensitive.

Please note that in order to access all the content and to use all the advanced features, including e-mail alerts and the personal profile functions, you must be a registered user and logged into the journal site with your individual email address and password.

The Southern Appalachian Botanical Society site has not changed. We will post a link from the SABS site to the *Castanea* site so that you can access the journal content from <http://www.sabs.appstate.edu>.

We want your introduction to the journal site to be as smooth and seamless as possible. Please let us know if you have any difficulties while navigating the journal website by contacting [onlinepublishing@allenpress.com](mailto:onlinepublishing@allenpress.com)

We look forward to introducing you to the new journal site in January.--Karen Ridgway, Publisher

## Taxonomic Advisory!:

### *Cartrema*, *Muscadinia*, *Coleataenia*, *Asemeia*, *Polygaloides*, *Didymoglossum*, *Vandenboschia*, *Crepidomanes*?

By Alan Weakley

This column will highlight changes at the generic level, and notably generic splits that affect the eastern North American flora. Results of molecular and molecular/morphological systematic studies often corroborate our current understanding of the taxonomy of a group, and our opinions about the appropriate taxonomic rank of the units in the group. When the results don't support the status quo, there are (broadly speaking) two possible solutions that can lead to monophyletic classification units: more lumping or more splitting. A previous column in *Chinquapin* 16(2) (2008) "Taxonomic advisory!: Red-headed stepchildren – part of the family or not?" highlighted some high-profile lumpings of genera, including *Cimicifuga* into *Actaea*, *Hepatica* into *Anemone*, *Amphianthus* into *Gratiola*, *Duchesnea* into *Potentilla*, *Belamcanda* into *Iris*, *Dodecatheon* into *Primula*, and *Leiophyllum* and *Loiseleuria* into *Kalmia*. But here are some where going the other direction seems to be warranted.

#### *Cartrema* and *Osmanthus* (OLEACEAE)

Our North American *Osmanthus* (*O. americanus* and *O. megacarpus*) have long been recognized as being allied to some Asian species, as section *Leiolea* (Green 1958), but not to other Asian species, including the type species of the genus *Osmanthus*, *O. fragrans*. *O. fragrans* and *O. heterophyllum* are familiar in the south as common landscaping plants with evergreen, opposite, spiny-margined leaves, and axillary clusters of very fragrant white flowers borne in the autumn.

A number of recent studies (morphological, anatomical, and molecular) have suggested that *Osmanthus*, as generally and recently circumscribed is paraphyletic (summarized in Guo et al. 2011). J.K. Small (1933) recognized the distinctiveness of section *Leiolea* and created the genus *Amarolea* Small to accommodate the two entities in the southeastern United States, but Rafinesque had presaged this by nearly a century, establishing the genus *Cartrema* Rafinesque in 1838. While the molecular phylogenetic study of Guo et al. (2011) does not resolve all the issues with generic circumscription in subtribe *Oleinae*, it does clearly establish that section *Leiolea* is monophyletic, and falls in a larger clade with *Olea* and *Linosyris*, not *Osmanthus* sensu stricto. *Cartrema* Raf. therefore appears to be the appropriate generic placement for the group of taxa for-

merly treated in *Osmanthus* section *Leiolea* – see Weakley et al. (2011) for additional discussion.

#### *Muscadinia* and *Vitis* (VITACEAE)

The many morphological distinctions between and different chromosome number of the muscadines and the rest of *Vitis* have suggested that it is at least a "strong subgenus," as subgenus *Muscadinia*. Recent molecular studies are equivocal as to whether it is more closely related to *Vitis* subgenus *Vitis* than to other genera in the Vitaceae. The more conservative approach would be to recognize it at generic level as *Muscadinia* Small (as done previously by J.K. Small, and frequently followed by viticulturists). Overall, and even if *Muscadinia* is basal to but forms a monophyletic clade with *Vitis sensu stricto*, recognition of *Muscadinia* at generic rank is warranted, based on the long-recognized morphological distinctiveness of *Muscadinia* vs. *Vitis sensu stricto* (tendrils simple vs. bifid or trifid; bark adherent and with prominent lenticels vs. bark shredding and with inconspicuous lenticels; pith continuous through nodes vs. pith interrupted by nodal diaphragms; leaves small, coarsely dentate, and never deeply lobed vs. leaves large, finely serrate, and usually deeply lobed), the genetic distance of it from *Vitis sensu stricto*, the close relationships of taxa within *Vitis sensu stricto* and their rampant interfertility, the different chromosome numbers (40 in *Muscadinia*, 38 in *Vitis sensu stricto*), the frequent past and current recognition of *Muscadinia*, and the standards of morphological distinctiveness of genera in the Vitaceae (Brizicky 1965; Ren et al. 2011; Péros et al 2011; Tröndle et al. 2010; Rossetto et al. 2002; Soejima & Wen 2006).

#### *Coleataenia* and *Panicum* (POACEAE)

The dismemberment of *Panicum* continues. The alternative would be *Panicum* swallowing up nearly all of its tribe, including *Paspalum*, and what good would that do anyone? The group of *Panicum* species usually treated as section *Agrostoides*, has been removed to its own genus, initially *Sorengia*, but this needed replacement for nomenclatural reasons. See names below.

#### *Asemeia*, *Polygaloides*, and *Polygala* (POLYGALACEAE)

Abbott (2011) corroborated what others had long suggested – that *Polygala* was a "trashcan genus" consisting of elements of Polygalaceae that were left over after other

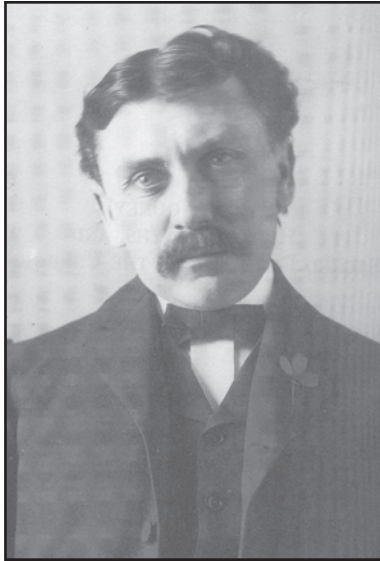
Weakley continued on Page 30

# BOTANICAL EXCURSIONS

## James Mooney & Cherokee Plant Lore

By George Ellison

Anthropologist James Mooney (1861-1921) was born in Richmond, Indiana, a village situated on a tributary of the Ohio. From the time he launched his career with the Bureau of American Ethnology in 1885 until his death, Mooney devoted his life to detailing various aspects of the history, material culture, oral tradition, language, arts and religion of the Cherokee, Cheyenne, Sioux, Kiowa and other tribes, adding a new dimension to the writing of Indian history by combining various methods of research and incorporating sources from the Indians themselves.



He is most widely remembered for his research and writing on the Ghost Dance movement. But some of his most inspired work took place in the mountains of Western North Carolina, where he lived among the remnant Eastern Band of Cherokees [now officially designated as the Eastern Band of Cherokee Indians] for parts of four years from 1887 through 1890 and for interim periods thereafter through 1916. He was the first serious student of that then neglected tribe and probably the most influential. University of Georgia anthropologist Charles Hudson, a leading authority on the Indian tribes of the southeastern United States, concluded that without Mooney we “would know next to nothing about the world view of the southeastern Indians.”

Mooney's major works on the Eastern Band were *Sacred Formulas of the Cherokees* (1891) and *Myths of the Cherokee* (1900). Both appeared as Bureau of American Ethnology publications.

After graduating from high school, Mooney took a job with a newspaper in his hometown, but his free time was given over to reading about Indian cultures and studying the publications of early American anthropologists and explorers such as John Wesley Powell. In 1882, he wrote Powell—then director of the Bureau of American Ethnology at the Smithsonian Institution in Washington, D.C.—asking for employment. The bureau ethnologist Powell referred the letter to was not impressed and responded negatively to repeated requests. Not deterred, Mooney journeyed to the nation's capitol in 1885 and presented himself to Powell, who was “much impressed” and gave him a position.

That summer Mooney met Nimrod Jarrett Smith, principal chief of the Eastern Band, who was often in Washington lobbying for official recognition of the tribe as a legal entity. Smith warmed to Mooney and invited him to visit Cherokee. Shortly after his arrival,

he was able to observe what turned out to be the last Green Corn Ceremony—with attendant individual and tribal cleansing rituals, involving conjuring, singing and prayer that lasted all day and into the night—fully enacted by the Eastern Band for over a century. That summer Mooney started learning the Cherokee language, collected native medicinal plants, blowguns, fish spears and other objects, becoming acquainted in the process with individual tribal members and their mountainous homeland.

Mooney found that old Cherokee traditions were dying out in the face of an onslaught by white Christianity, culture, and material goods. He directed his energies toward helping to preserve Cherokee history, lore and rituals before they faded from tribal consciousness. In retrospect, we can appreciate the fact that he arrived in the nick of time, since most of the Cherokee traditionalists then able to provide him with essential information and insights passed away by the turn of the century.

The great medicine man Swimmer and other members of the Eastern Band concluded that the courteous white man who came to visit and talk with them each year was *u:da:nu:ti*; that is he was “a man of soul”—he possessed the correct “emotional attitude.” Swimmer lived in the isolated and traditional Big Cove community that remains a bastion of Cherokee traditionalism to this day. He was Mooney's most valuable informant by far. The anthropologist credited “nearly three-fourths” of the stories related in *Myths of the Cherokee* to him. Shortly after Swimmer's death, Mooney penned an elegiac tribute to his friend: “He died in March, 1899, aged about sixty-five, and was buried like a true Cherokee on the slope of a forest-clad mountain. Peace be to his ashes and sorrow for his going, for with him go about half the traditions of his people.”

The 576-page *Myths of the Cherokee* consists of eight parts: “Introduction”; “Historical Sketch of the Cherokee”; “Notes to the Historical Sketch”; “Stories and Storytellers”; “The Myths”; “Plant Lore”; “Notes and Parallels”; and “Glossary.” The Cherokees were exceptional observers of the natural world in all its aspects long before the first Europeans arrived and began the systematic survey of the plants and animals found in North America. Here are several excerpts from Mooney's account of Cherokee plant lore.



*Partridge moccasin* (*Cypripedium acaule* with the *Bombus* bee pollinator)





Deereye (*Rudbeckia hirta* or *serotina*)

\*\*\*

The Cherokee have always been an agricultural people, and their old country is a region of luxuriant flora, with tall trees and tangled undergrowth on the slopes and ridges, and myriad bright-tinted blossoms and sweet wild fruits along the running streams. The vegetable kingdom consequently holds a far more important place in the mythology and ceremonial of the tribe than it does among the Indians of the treeless plains and arid sage deserts of the West, most of the beliefs and customs in this connection centering around the practice of medicine, as expounded by the priests and doctors in every settlement. In general it is held that the plant world is friendly to the human species, and constantly at the willing service of the doctors to counteract the jealous hostility of the animals. The sacred formulas contain many curious instructions for the gathering and preparation of the medicinal roots and barks, which are selected chiefly in accordance with the theory of correspondences.

Some of their plant names are peculiarly apt. Thus the mistletoe, which never grows alone, but is found always with its roots fixed in the bark of some supporting tree or shrub from which it draws its sustenance, is called by a name which signifies "4 it is married" ... The bear-grass with its long, slender leaves like diminutive blades of corn, is called "greensnake," and the larger grass known as Job's tears, on account of its glossy, rounded grains, which the Indian children use for necklaces, is called "the mother of corn." The black-eyed Susan of our children is the "deer-eye" of the Cherokee, and our lady-slipper is their "partridge moccasin". The May-apple, with its umbrella-shaped top, is called "it wears a hat," while the white puff ball fungus is "the little star," and the common rock lichen bears the musical, if rather unpoetic, name of utsäl'eta, "pot scrapings."



Greensnake (*Xerophyllum asphodeloides*)

Ginseng, or "sang," as it is more often called by the white mountaineers, is known to the laity as "the mountain climber," but is addressed in the formulas as "Little Man," while selu (corn) is invoked under the name of "The Old Woman" ... The beliefs and ceremonies in connection with the gathering and preparation [of ginseng] are very numerous. Ginseng, which is sold in large quantities to the local traders, as well as used in the native



It wears a hat (*Podophyllum peltatum*)

medical practice, is ... addressed by the priests as "Little Man, Most Powerful Magician," the Cherokee sacred term, like the Chinese name, having its origin from the frequent resemblance of the root in shape to the body of a man. The doctor speaks constantly of it as of a sentient being, and it is believed to be able to make itself invisible to those unworthy to gather it. In hunting it, the first three plants found are passed by. The fourth is taken, after a preliminary prayer, in which the doctor addresses it as the "Great Ada'weh'i," and humbly asks permission to take a small piece of its flesh. On digging it from the ground, he drops into the hole a bead and covers it over, leaving it there, by way of payment to the plant spirit.

Mysterious properties attach to the wood of a tree which has been struck by lightning, especially when the tree itself still lives, and such wood enters largely into the secret compounds of the conjurers. An ordinary person of the laity will not touch it, for fear of having cracks come upon his hands and feet, nor is it burned for fuel, for fear that lye made from the ashes will cause consumption. In preparing ballplayers, for the contest, the medicine-man sometimes burns splinters of it to coal, which he gives to the players to paint themselves with in order that they may be able to strike their opponents with all the force of a thunderbolt. Bark or wood from a tree struck by lightning, but still green, is beaten up and put into the water in which seeds are soaked before planting, to insure a good crop, but, on the other hand, any lightning-struck wood thrown into the field will cause the crop to wither, and it is believed to have a bad effect even to go into the field immediately after having been near such a tree.

[In the "Notes and Parallels" section, Mooney, ever diligent, appended the observation: "The ancient Tuscarora believed that no tree but black gum was immune from lightning, which they declared, would run round a tree a good manytimes seeking in vain to effect an entrance."] [John] Lawson, who records the belief [in *A New Voyage to Carolina*, 1709], adds: 'Now, you must understand that sort of gum will not split or rive; therefore, I suppose the story might arise from thence.'

**Note:** George Ellison wrote the biographical introduction for the reissue, in one volume, of *Myths of the Cherokee and The Sacred Formulas of the Cherokees* as James Mooney's *History, Myths, and Sacred Formulas of the Cherokees* (Asheville NC: Historical Images, 1992).



**Weakley continued from Page 27**

morphologically more distinctive entities had been removed. This seems to be a basic issue in taxonomic practice – we excise the recognizable lobes as separate entities, leaving what seems to be an intractable core. Molecular phylogenetic analyses give us an additional tool to understand the relationships of entities in complex groups like the Polygalaceae, and Abbott (2011) found that two eastern North American elements needed to be excluded from *Polygala*: the Coastal Plain *Polygala grandiflora* (previously already placed in *Asemeia* by J.K. Small, and the more montane “gay-wings”, *Polygala paucifolia*, previously excluded from *Polygala* by J.K. Small in the genus *Triclisperma*, but taxonomically and nomenclaturally better placed in *Polygaloides*.

***Homalosorus* and *Diplazium* (DIPLAZIOPSIDACEAE)**

The wonderful glade fern must surely now be awarded “taxonomic frequent flier miles.” I learned it as *Athyrium pycnocarpon* (from Radford, Ahles, & Bell 1968), though if I were older I probably would have first known it as *Homalosorus pycnocarpos* from Small (1933). More recently, it has been more usually treated as *Diplazium pycnocarpon*. Its family placement has also been uncertain, affiliated with (at least) Polypodiaceae, Aspleniaceae, Athyriaceae, and Dryopteridaceae. Most recently several researchers separate it not only from *Athyrium* and *Diplazium*, but also place it the family Diplaziopsidaceae (summarized in Christenhusz, Zhang, & Schneider 2011). So, we appear to be back to *Homalosorus*!

***Didymoglossum*, *Vandenboschia*, *Crepidomanes*, and *Trichomanes* (HYMENOPHYLLACEAE)**

Recent phylogenetic and other studies of the Hymenophyllaceae have emphasized the diversity of evolutionary groups, especially in what has often been treated as a broadly defined *Trichomanes* L. Specifically, the recognition of smaller, morphologically more homogeneous clades within *Trichomanes* s.l. has been recently promoted by Ebihara et al. (2006, 2007). Three strikingly different species of *Trichomanes sensu lato* are distributed in temperate eastern North America: *T. boschianum* Sturm, *T. petersii* A. Gray, and *T. intricatum* Farrar. They fall into three different clades within *Trichomanes* s.l., and correspondingly within three separate segregate genera, as recognized by Ebihara et al. (2006, 2007). The three temperate eastern North American species are best known as *Vandenboschia boschiana*, *Didymoglossum petersii*, and *Crepidomanes intricatum* (Ebihara

et al. 2007; Ebihara et al. 2008; Ebihara, Farrar, & Ito 2008, Weakley et al. 2011).

***Nabalus* and *Prenanthes* (ASTERACEAE)**

There now appears to be a general consensus to recognize *Nabalus* Cassini (1825) as a separate genus of North America and east Asia, as indicated by its recent acceptance in major worldwide synopses of the Asteraceae and indications based on molecular phylogenies that it is not even closely related to *Prenanthes* s.s. (Lack in Kadereit & Jeffrey 2007; Kilian, Gemeinholzer & Lack in Funk et al. 2009; Schilling & Floden, unpublished data); morphological studies also support the separation of the two genera (Shih 1987).

**OUTCOMES: (Name changed » for)**

*Asemeia grandiflora* (Walter) Small » *Polygala grandiflora* Walter  
*Cartrema americana* (L.) Raf. » *Osmanthus americanus* (L.) Benth and Hooker f.  
*Cartrema megacarpa* (Small) Weakley » *Osmanthus megacarpus* Small  
*Crepidomanes intricatum* (Farrar) Ebihara & Weakley » *Trichomanes intricatum* Farrar  
*Coleataenia abscissa* (Swallen) LeBlond » *Panicum abscissum* Swallen  
*Coleataenia anceps* (Michaux) Soreng ssp. *anceps* » *Panicum anceps* Michx. ssp. *anceps*  
*Coleataenia anceps* (Michaux) Soreng ssp. *rhizomata* (Hitchcock & Chase) Soreng » *Panicum anceps* Michx. ssp. *rhizomatium* Hitchcock & Chase  
*Coleataenia longifolia* (Torrey) Soreng ssp. *combsii* (Scribner & C.R. Ball) Soreng » *Panicum longifolium* Torrey var. *combsii* (Scribner & C.R. Ball) Fernald  
*Coleataenia longifolia* (Torrey) Soreng ssp. *longifolia* » *Panicum longifolium* Torrey var. *longifolium*  
*Coleataenia rigidula* (Bosc ex Nees) LeBlond ssp. *condensa* (Nash) LeBlond » *Panicum rigidulum* var. *condensum* (Nash) Mohlenbrock  
*Coleataenia rigidula* (Bosc ex Nees) LeBlond ssp. *rigidula* » *Panicum rigidulum* Bosc ex Nees var. *rigidulum*  
*Coleataenia tenera* (Beyrich ex Trinius) Soreng » *Panicum tenerum* Beyrich ex Trinius  
*Coleataenia stipitata* (Nash) LeBlond » *Panicum stipitatum* Nash  
*Didymoglossum petersii* (A. Gray) Copeland » *Trichomanes petersii* A. Gray  
*Homalosorus pycnocarpos* (Sprengel) Pichi-Sermolli » *Diplazium pycnocarpon* (Sprengel) M. Broun  
*Diplaziopsis pycnocarpa* (Sprengel) M.G. Price » *Athyrium pycnocarpon* Sprengel  
*Muscadinia rotundifolia* (Michx.) Small var. *munsoniana* (J.H. Simpson ex Planchon)

Weakley & Gandhi » *Vitis rotundifolia* Michx. var. *munsoniana* J.H. Simpson ex Planchon

*Muscadinia rotundifolia* (Michx.) Small var. *pygmaea* (McFarlin ex D.B. Ward) Weakley & Gandhi » *Vitis rotundifolia* Michx. var. *pygmaea* McFarlin ex D.B. Ward  
*Muscadinia rotundifolia* (Michx.) Small var. *rotundifolia* » *Vitis rotundifolia* Michx. var. *rotundifolia*  
*Vandenboschia boschiana* (Sturm) Ebihara & K. Iwatsuki » *Trichomanes boschianum* Sturm  
*Nabalus albus* (L.) Hooker » *Prenanthes alba* L.  
*Nabalus altissimus* (L.) Hooker » *Prenanthes altissima* L.  
*Nabalus autumnalis* (Walter) Weakley » *Prenanthes autumnalis* Walter  
*Nabalus asper* (Michx.) Torrey & A. Gray » *Prenanthes aspera* Michx.)  
*Nabalus barbatus* (Torrey & A. Gray) A. Heller » *Prenanthes barbata* (Torrey & A. Gray) Milstead  
*Nabalus bootii* DC. » *Prenanthes bootii* (DC.) D. Dietr.  
*Nabalus carrii* (Singhurst, O’Kennon & W.C. Holmes) Weakley » *Prenanthes carrii* Singhurst, O’Kennon & W.C. Holmes  
*Nabalus crepidineus* (Michaux) A. P. de Candolle » *Prenanthes crepidinea* Michx.  
*Nabalus racemosus* (Michx.) DC. » *Prenanthes racemosa* Michx.  
*Nabalus roanensis* Chickering » *Prenanthes roanensis* (Pickering) Pickering  
*Nabalus serpentarius* (Pursh) Hooker » *Prenanthes serpentaria* Pursh  
*Nabalus trifoliolatus* Cass. var. *nanus* (Bigelow) Weakley » *Prenanthes trifoliolata* (Cassini) Fernald var. *nana* (Bigelow) Fernald  
*Nabalus trifoliolatus* Cassini var. *trifoliatus* » *Prenanthes trifoliolata* (Cassini) Fernald var. *trifoliolata*

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 —, K. Iwatsuki, M. Ito, S. Hennequin, and

**Weakley continued on Page 31**

# Mystery Plants

By Dan Pittillo

For the next series of plant identifications, let's continue the little virtual project for an actual site. Suppose, you are asked to do an identification of virtual images for a client that wants to see what might be the future dominant species of an area after a storm. Many of our members are qualified to do this, even from distant locations, as has been demonstrated by many that have been able to identify rather cryptic photos in these pages over the years. But to make this little project easier for some others that have not tried to do this, let's see what you can do with this effort over the next few issues. I would like to award the best virtual identifier with the Mystery Plant Award (I'll tell you later what this will be, but for now let's see what you can do with this little project.)

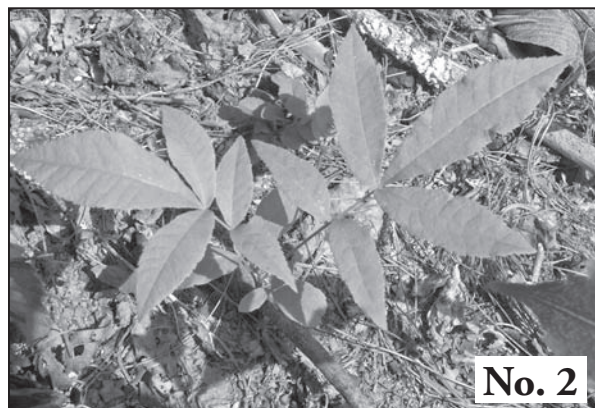
I actually had a large forked, white pine broken down in two storms. I planted this pine in an old pasture ridge about 20 feet above our creek when I first moved to Cane Creek valley in the early 1970's. This summer I had the final standing log cut and removed along with the second branch of that I'm sawing up for fire wood (actually I'm mixing it with hardwood for better burning

in our stove). I live in an area of rich cove hardwoods so this will be the primary seed source for this site. To help you out, here are the species I have living nearby: Canopy trees include *Acer rubrum*, *Aesculus flava*, *Betula lenta*, *Carya alba*, *Fagus grandifolia*, *Fraxinus americana*, *Liriodendron tulipifera*, *Prunus serotina*, *Quercus alba*, *Q. falcata*, *Tilia americana* var. *heterophylla*. Understory trees include *Carpinus caroliniana*, *Cornus alternifolia*, *C. florida*. Shrubs and vines include *Calycanthus floridus*, *Celastrus orbiculatus* (invasive), *Corylus cornuta*, *Parthenocissus quinquefolia*, *Toxicodendron radicans*, *Vitis aestivalis*.

Both these seedlings were found growing in the site. See if you can identify No. 1 and No. 2.

There was a hold-up at the print office and mailing of Chinquapin 19(3) and there has not been enough time for most readers to respond to the question of identity. For this reason, we'll wait until the first issue of volume 20 to send the results. So, if you didn't get a chance to send those

identifications, send them in before the second issue is out in spring and I'll put you in the challenge for the Mystery Plant Award later in the year 2012.



## Weakley continued from Page 30

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## Student Awards Reminder

The Southern Appalachian Botanical Society is pleased to announce two awards for students: the SABS Outstanding Student Poster Award and the SABS Outstanding Student Contributed Paper Award. These will be presented at the Association of South-eastern Biologists annual meeting in Athens GA, in April 2012. SABS convenes as one of the affiliate organizations at this meeting. The posters and talks will be assessed by anonymous judges. Each award includes an honorarium of \$150.00, and the winners will be announced at the ASB banquet.

Questions may be directed to Dr. Ed Lickey at [elickey@bridge-water.edu](mailto:elickey@bridge-water.edu).

### Mistletoe continued from Page 25

birds try to eat the fruits but with their abundant glue-like material appropriately called viscin, fruits stick to the beak of the bird. Frustrated, the bird wipes its beak on a small twig and the fruit with its seed sticks. The other theory is that the birds eat the fruits which then rapidly pass through their system and are deposited on a different branch.

Whatever the details of the intimate life of mistletoes, they are very successful and have become common in urban areas on both native and introduced trees. For example, in the Tidewater Virginia area silver maple, *Acer saccharinum*, is commonly planted and this tree is a favored host. In my observations a mature Silver Maple can be destroyed by mistletoe in about 15 years. Red Maple, *Acer rubrum*, is also heavily infested but in my neighborhood alone oaks,

birches, elms, and Black Gum (*Nyssa sylvatica*) are attacked.

Some trees, such as Hackberry (*Celtis* spp.) and Black Locust (*Robinia pseudoacacia*), are initially parasitized but the mistletoe dies after a few years. My guess is that Eastern Mistletoe can start on almost any hardwood (I have never seen our species on pines) but that the character of the host bark determines the fate of the introduction.

When the fruit is positioned on the tree, the seedling penetrates and links up with the xylem. In this way it can spread systemically through its host. A large parasite load can lead to water stress for the host at times of drought and also provide pathways for the invasion of pathogens. The only control measure is to cut the mistletoe.

The seeds are easy to germinate and make an interesting student project. Just collect the fruits, crush them to remove the seeds. It is impossible to remove all the viscin from the seeds (and from your hands!). Put them on a paper towel moistened with 2% hydrogen peroxide, keep the paper towel moist using only this solution or fungi will rapidly overtake the fruits. Try attaching the germinated seeds to hosts—I have done this with limited success.

If you cut mistletoe for use at Christmas be certain to keep the plants from children and pets. Eastern Mistletoe has been documented as a poison. This common plant is the only parasite with a traditional role. But we know more about how it affects our biology than we do about it. That's why it deserves more study.

At Old Dominion University we say that our noted basketball players get athletes' foot and the botanists get mistletoe.

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