

CHINQUAPIN

THE NEWSLETTER OF THE
SOUTHERN APPALACHIAN BOTANICAL SOCIETY

VOLUME 25 (2)
SUMMER 2017



Linnaean Taxonomy and a New Search for Oconee Bells

by Amy Hackney Blackwell

Linnaeus may have been the father of taxonomy, but his taxonomy is not our taxonomy. I didn't really appreciate this until the Botanica Caroliniana team (Patrick McMillan, Christopher Blackwell, and I) got into the Michaux collections at the Jardin des Plantes – and couldn't find the Oconee Bells.

This trip (summer 2014) was funded by a grant from the Andrew Mellon Foundation. The purpose of the grant was to teach historical botany as an exploration of the Liberal Arts, a union of history, botany, and computer science. Much of our funding paid for a summer undergraduate research experience focused on the botanical collections of Joseph Lord (Dorchester, SC, 1707-1710), but it also allowed us to travel to Europe for collaborative meetings. Patrick gave a talk on our Catesby work at the Natural History Museum in London, Chris gave another talk at the British Library, and we met with colleagues in the Royal Botanic Gardens at Kew and the Hamburg Botanischer Garten.

Best of all, we got to spend several days at the Jardin des Plantes in Paris, where the wonderful curator Cécile Aupic met us at a door marked “Cryptogamie” and led us to the massive André Michaux herbarium.

André Michaux (1746-1802) was born in Versailles. After studying with Bernard de Jussieu, he somehow got himself named a government botanist, tasked with traveling the world seeking valuable plants. (Where are these gigs today?) In 1785 France sent him to the brand new United States of America. The government wanted oaks, which the French navy desperately needed for its fight against the British.

Great botanist that he was, Michaux didn't just look at oak trees. He collected thousands of plant specimens and founded a botanical garden near Charleston, SC, from which he shipped numerous North American plants to France. He almost participated in the Lewis and Clark expedition, but he lost that job when Thomas Jefferson had second thoughts about putting a Frenchman in charge. Even when his salary got cut off due to a regime change (see



events of 1789, France), Michaux kept working with his plants. He returned to France in 1796; most of his dried specimens survived the inevitable shipwreck and made it to the Jardin des Plantes.

The Jardin's historic herbarium has recently been renovated. Though the exterior of the building remains unchanged (the other entrance is still marked “Phanerogamie”), the interior has been completely renovated and updated. The herbarium collections are now in climate-controlled rooms on bright yellow movable metal shelves.

The collections themselves, though, are still filed as they must have been some years ago – in paper folders with paper labels. The volumes are organized according to the classification scheme Michaux used for his *Flora Boreali Americana*. The top level of the organization is Linnaean class. Within each class are subdivisions by orders, which are marked by bits of paper



Oconee Bells continued on Page 11

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

I missed it. No, not the summer deadline for *Chinquapin*, though I missed that too. I missed the Great American Eclipse of 2017. As you might have heard, I'm spending the year on sabbatical in England. Nothing noteworthy happened in the sky here on August 21. We were on the fringe of the partial eclipse path, and it was cloudy (big surprise). Greenville, South Carolina, where I normally live and work, was right in the path of totality, had clear weather, and made a great show of it. Oh well. Having a total eclipse in my own home town is a once in a lifetime opportunity, but eclipses are not that rare. Maybe in 2024 I'll see the next one predicted to occur in the United States.

Predicted. That's an interesting word. Scientists evaluate evidence and use their findings to make explanations and predictions. I think Neil deGrasse Tyson is an excellent communicator of scientific ideas and information. Eleven days before the eclipse, he commented "Odd. No one is in denial of America's Aug 21 total solar eclipse. Like Climate Change, methods & tools of science predict it." And among the many corollaries of that prediction are rising sea levels, higher risks of coastal flooding, and more frequent, intense storms. I'm sure you can see where I'm going here.

Hurricane Harvey brought unprecedented rainfall and flooding to Texas and Louisiana. As I write this, Hurricane Irma has just been declared the most powerful Atlantic hurricane ever recorded, and massive destruction seems inevitable. And in case you've missed it among these more local events, an unprecedentedly severe monsoon season in South Asia has already killed nearly 1,300 people and affected 45 million others.

So far, I've been lucky enough to miss being a victim of these horrific tragedies. I have friends in these areas, and I am sure that there are members of SABS who have been affected, among millions of others. I hope all of us will consider offering our thoughts, prayers, and donations to help the victims. Can our society learn anything from the experience? Only time will tell.

Castanea Editorial Board

The Editor in Chief of our journal *Castanea*, Christopher P. Randle, is assisted by the following subject editors:

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Pittsburgh, PA

Shawn Krosnick (Systematics) and Robert Carter (Floristics) will step down at the end of the year. Their service to SABS is appreciated.

"We did not domesticate wheat. It domesticated us."

Sapiens: A Brief History of Humankind.
Harper, 2015.

Oconee Bells continued from Page 9

stuck in between folders. The genera are contained in individual manila folders, which can contain numerous specimens.

Of course we started by looking for the elusive Oconee Bells. Most readers probably know the story of the discovery of *Shortia galacifolia* – Michaux found the plant near the Keowee River in 1787 but didn't name it. Asa Gray later saw his specimen in Paris and named it after Kentucky botanist Charles Short based on its resemblance to galax. We needed to see this famous specimen!

But we couldn't find it. What's more, we didn't even know what it was called.

I know, this sounds stupid. But we were helpless in the face of Linnaean taxonomy. We'd have been much better off if we had prepared by reading the article by Charlie Williams and co-workers (cited below), but we started our *Shortia* quest on a whim, and we didn't have Internet.

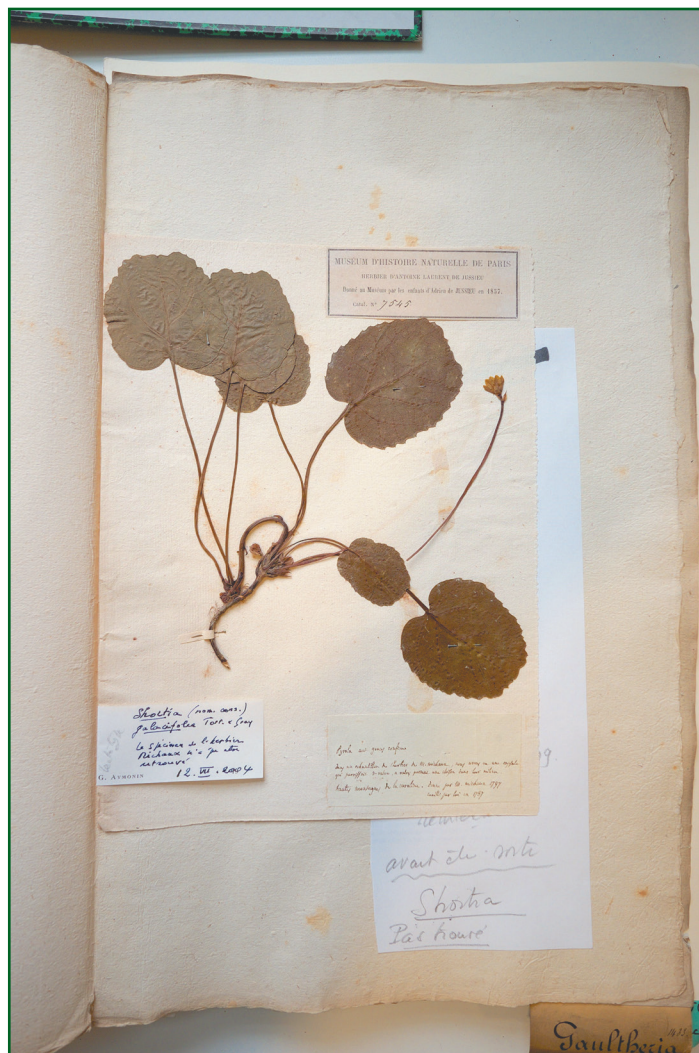
I am fairly new to the field of plant taxonomy – I started studying it at Clemson with Patrick McMillan in 2009 – and I quickly realized that I knew nothing about early taxonomic schemes. So I can share my discovery: Linnaean taxonomy is NOT AT ALL the same as currently used schema (even allowing for the fact that taxonomy is currently in flux, and people are using all kinds of systems to organize their herbaria, from Cronquist to the brand-new APG IV).

Linnaeus organized plants by numbers of sexual parts – nine male one female, five male three female. This results in some startling classifications – such as Pinaceae, Cupressaceae, and Euphorbiaceae all being grouped together as Monoecia Monadelphica. That is, gymnosperms grouped with eudicots.

In a modern herbarium, a specimen of *Shortia galacifolia* is easily located in the family Diapensiaceae. But the Linnaean genus for this plant is not *Shortia*, and no one at the herbarium knew what family it lived in.

In the end we found the thing by accident, and only because Chris and I systematically photographed every specimen in the Michaux collection. On the afternoon of our second day, we were in the midst of Volume 9, and there it was – no, no, not the specimen itself, but a photocopy of it.

Labeled “*Shortia galacifolia* Phantome,” it directed us to “Voir H6



Jussieu 7545.”

Following this handwritten clue, we located the actual specimen in the nearby Jussieu materials. Its note read: “hautes montagnes de la Caroline. Donné par M. Michaux 1797, cueilli par lui en 1787.” So there we were.

And the genus? *Pyrola*. Of course....

We spent three full days in the herbarium and photographed all the Michaux materials, nearly 2900 specimens. These photographs are online, and the rest is very much a work in progress. Patrick and I have begun the work of making modern determinations. I've created a catalog of the current organization, including transcribing the handwritten notes and type determinations and cross references to Michaux's *Flora Boreali Americana*. We'll be posting the catalog on the Botanical Carolina website.

These materials contain fodder for endless student projects, projects that are not mere exercises, but real contributions to human knowledge. There are a number

of type specimens. There are handwritten labels with comments on phenology, location, historical tidbits. (During the revolutionary period, Michaux switches from “Monsieur so-and-so” to “Citizen so-and-so” – shades of A Tale of Two Cities.) With the data organized, it's easy to see the overlap between Linnaean classifications and modern families – they're really not so far off our modern schemes. It will be fun to get this all together!

Amy Hackney Blackwell is coordinator of the South Carolina Plant Conservation Alliance (SCPCA), which is based at the South Carolina Botanical Garden.

For more information about the discovery of *Shortia galacifolia* and the mystery of its type locality, the following references are recommended:

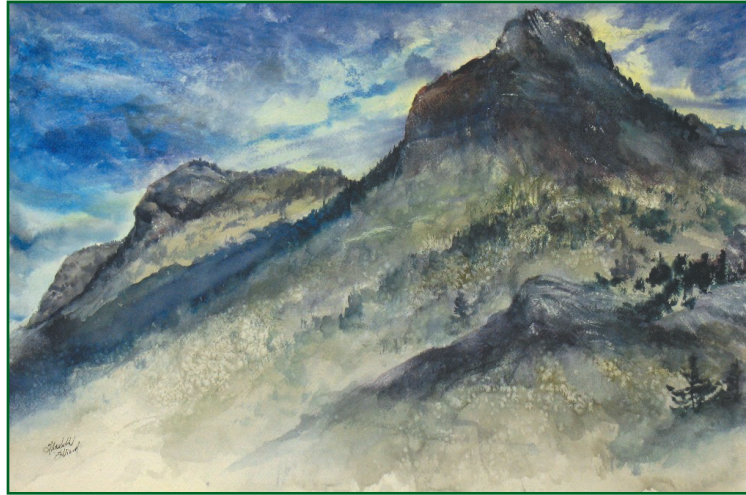
- Pfister DH. Portal Curiosities: Asa Gray and the quest for *Shortia galacifolia* – a case study for the importance of collections. <https://www.idigbio.org/content/portal-curiosities-asa-gray-and-quest-shortia-galacifolia-%E2%80%93-case-study-importance>. Online (retrieved 30 Aug 2017)
- Williams C, Norman E, Aymonin GG. The type locality of *Shortia galacifolia* T. & G. visited once again. *Castanea Occasional Papers* 2:169-173 (December 2004).

BOTANICAL EXCURSIONS

Sky Islands

By George Ellison (www.georgeellison.com)

Artwork by Elizabeth Ellison (www.elizabethellisongallery.com)

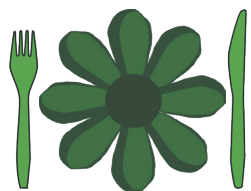


On the eighth of April the air was radiant as we ascended alongside the creek into a basin carpeted with fringed phacelia and spring beauty. But winter lingered along the high divide. Twigs and buds overarching the trail cast gray shadows on the ribbons of bark unraveling from yellow birch trees.

Below the crest we made our way south across boulderfields aggregated 18,000 years ago in the folds of north-facing slopes when violent freeze-thaw action prized huge stones from high-elevation cliff faces that descended with streams of muddy debris until they settled on alluvial terraces or behind narrow gaps. No glaciation this far south but cold enough year round to create a stunted tree-line at 5,000 feet above which hundreds of unnamed peaks carpeted with lush icy layers of alpine tundra drifted like sky islands.

The only sounds were the wind, the dry rasp of boot soles seeking purchase on stone and the insistent calls of a broad-winged hawk. Back on the divide we found the spur that led through the rhododendron tunnel to the rock bald where we stood together once again naming from east to west all of the mountains and all of the rivers.

[Editor's note: This poem was taken from an as yet unpublished collection by George Ellison, with the working title Dark Mountains & Shining Rivers.]



Edible Wild Plants: The Empress of Aquatic Plants, *Nelumbo lutea*

by Lytton John Musselman, Old Dominion University

Coming upon a population of American lotus, *Nelumbo lutea*, is always a pleasant surprise and an event too infrequent in my half century of botanical field work. Even more surprising is that this strikingly beautiful perennial of ponds, impoundments, and other slow-moving water is more closely related to sycamore (*Platanus occidentalis*) than to the water lilies in the genera *Nuphar* and *Nymphaea*. How the mighty are fallen.

American lotus cannot be confused with any other aquatic plant. The large, peltate leaves and huge yellow flowers (one of the largest in our flora) are distinctive in this perennial which produces new leaves each growing season (Fig. 1).

The flowers can be the size of a dinner plate and have a distinct gynoecium with numerous ovules embedded in a flattened spongy receptacle (Fig. 2).

These ovules develop into nuts in mid to late summer. I like the colorful and descriptive common name of alligator nipples for the fruit (Fig. 3).

A common name for the nuts is water chinquapin, after the namesake of this newsletter, chinquapin. Anyone familiar with chinquapin (*Castanea pumila*) will see the similarity in size and use.

Both true chinquapin and water chinquapin are difficult to open but worth the effort. Collecting water chinquapin nuts requires careful observation as the fruits become very hard in a short time. This appears to be an adaptation to surviving a long time in the water and mud. In fact, the nuts of the only other species in the genus, *Nelumbo nucifera* or sacred lotus, have germinated after 2,000 years! Native Americans stored the nuts of American lotus for food and also used them in necklaces.

Unlike so many wild plants, the nuts of American lotus are actually tasty. The taste reminds me of filberts (*Corylus maxima*) imported from Turkey or our native filberts (*C. cornuta*, *C. ameri-*

cana). If you are fortunate enough to find a fruiting population of *Nelumbo lutea*, harvest the nuts before they become hardened (Fig. 4).

There are rumors that the leaves of American lotus are edible, I have not tried them. They appear to me to be more suitable as plates for serving wild foods. But the narrow rhizomes are edible. The flavor? Forgettable, though the symmetrical air chambers make it an attractive accouterment to soups or mixed in rice.

The sacred lotus, *Nelumbo nucifera*, has been introduced to our region. There is a population in a ditch on the Virginia-North Carolina state line in Virginia Beach. The flowers are pink and the fruits similar to American lotus. However, this species has well-developed starchy turions (turions are frequent features in aquatic

Edible Wild Plants continued on Page 16



Figure 2. American lotus flower in Lotus Garden, Tabernacle Creek, Virginia Beach, Virginia.



Figure 1. A large population of *Nelumbo lutea* in Lake Gaston, North Carolina.

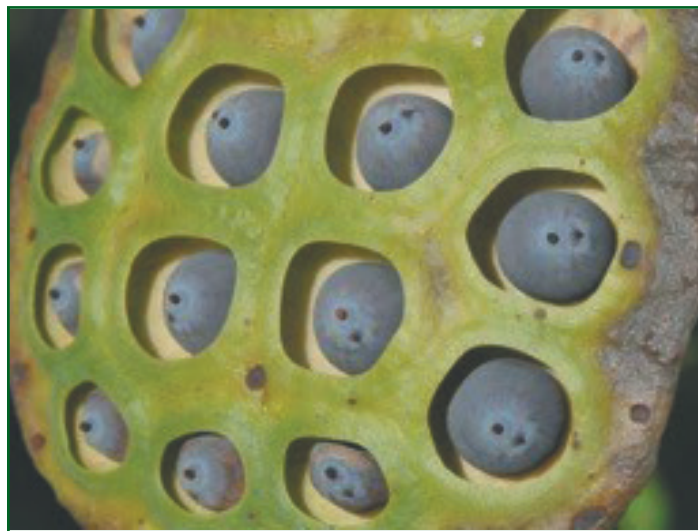


Figure 3. Mature fruits of *Nelumbo lutea* just past the stage for harvesting. Tabernacle Creek, Virginia Beach, Virginia.

Botanical Brainteasers

By Joe Pollard and Janie Marlow

Our spring Brainteasers [Chinquapin 25(1)] were (1) *Cornus florida* (flowering dogwood), (2) *Leucothoe fontanesiana* (mountain doghobble), (3) *Eupatorium capillifolium* (dog-fennel), (4) *Apocynum cannabinum* (hemp dogbane) and (5) *Typha latifolia* (cattail). The answer to the puzzle is in the common names. There were four “dogs” and one “cat”, so plant #5 was the odd cat out. It’s also the only monocot.

We said we’d start volume 25 with something fun and easy to encourage participation. Sure enough we got 12 entries, and all of them were good! Everyone saw the dogs and cats theme and got that right. Joe nitpicked about species identifications on a few of the entries (he’s just like that; ask his Field Botany students), but everybody got most of the points available. The very first entry to land in the inbox was from Eva Pratt, and she got everything perfect, so we declare Eva to be the winner. (Her husband Sam sent his message 11 minutes later and it was also correct, but we don’t think he’ll mind if Eva gets the honors this time.)

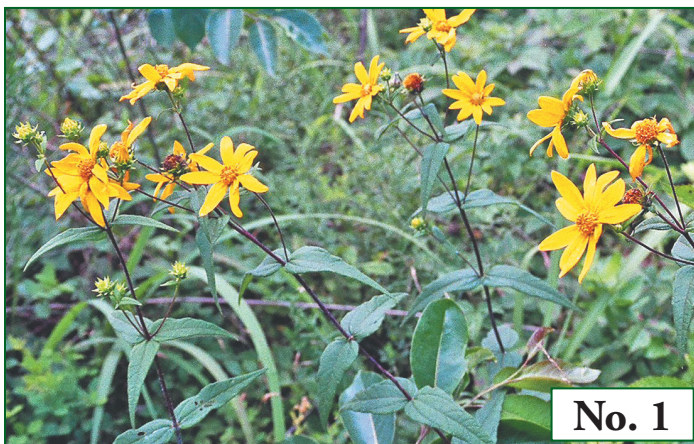
We’ll total up the score at the end of 2017 to determine who gets a prize (yet to be determined). So the key is to play often. It also helps to send your answers promptly—there’s extra credit for early responders.

The next one is again a pretty easy puzzle to figure out. As usual, you need to identify all 5 plants and then pick the odd one out. If you need a hint, look back at “From the Editor’s Desk” in this issue. The species identifications may be a little tougher on this one, but don’t be afraid to guess if necessary. There’s always partial credit available if you are close.

Please address all correspondence regarding Botanical Brainteasers to joe_pollard@att.net. (That’s an underscore character between first and last names.) Email is strongly preferred, as I’ll be out of the office a lot. Color photos will be posted online at <http://sabs.us/publications/chinquapin-issues>. Images are ©JK Marlow.



No. 3



No. 1



No. 4



No. 2



No. 5

Southern Appalachian Botanical Society

Minutes of the Breakfast Business Meeting, Montgomery, Alabama, Fri. March 31, 2017

Meeting was called to order 7:05am Central Time - Charlie Horn.

Emily Gillespie, SE Chapter of the Botanical Society of America makes brief comments.

OFFICER REPORTS AND ASSOCIATED ITEMS

RECORDING SECRETARY REPORT – Jay Bolin

Minutes from Fall 2016 SABS EC Meeting, Chattanooga TN (previously approved by the EC) distributed for informational purposes.

PRESIDENT'S REPORT – Charlie Horn

Announcement about two SABS websites currently up; imminent phase out of Appalachian State hosted site

Announcement about John Fairey Endowment (\$116,567.54).

One major task of the SABS Council will be to decide on how this endowment will be used to promote SABS and Botanical Education.

Announcement regarding historical botanist audio and video collections (currently archived in CD or DVD format). Please send to C. Horn or J. Bolin to be uploaded to YouTube and linked to the SABS Website.

TREASURER'S REPORT – Pum Grubbs

Financial Summary Statement distributed.

Total Assets Jan 1 2016: \$415,582.08.

Total Assets, End of 2016 Year: \$ 546,016.33

MEMBERSHIP SECRETARY REPORT – Mike Held

Membership summary data presented. Membership is relatively stable at approx 300 members. Goal for the year is 400 members.

Lytton Musselman: makes comment about declining membership and increasing budget.

Zack Murrel: What outlay could we spend on membership to grow student membership?

Ashley Morris: 65% of attendees at ASB are students. More travel awards are recommended.

Joey Shaw: Spend money to generate more student members/engagement.

Harvey Ballard: Regional student camping trips to engage students.

PUBLICATION REPORTS

Chinquapin – Joe Pollard: 3 issues in 2016 (no 4th issue for 2016). Next issue expected to go to layout by April 3, 2017.

Castanea – Chris Randle: Renegotiated contract with Allen Press. Two issues per year, with immediate posting online.

AWARDS [For additional detail on all awards, please see News from the Annual Meeting in Chinquapin 25(1).]

SABS STUDENT CONFERENCE SUPPORT AWARDS

(\$300)

Cameron Byrd, Nikolai Hay, Anna Nichole Long-Aragon, Adam Ramsey, Eranga Wettewa, James Wood

EARL CORE STUDENT RESEARCH AWARDS – presented by Chris Randle

Adam Ramsey (University of Memphis) - \$640.

Jennifer Hastings (Ohio University) - \$738.

RICHARD AND MINNIE WINDLER AWARDS for best papers in Castanea – presented by Chris Randle

Ecology: Varma-Rose J. Williams and Heather F. Sahli, A comparison of herbivore damage on three invasive plants and their native congeners: implications for the enemy release hypothesis. *Castanea* 81(2): 128-137.

Systematics: Jonathan P. Evans, Callie A. Oldfield, Mary P. Priestley, Yolande M. Gottfried, L. Dwayne Estes, Alfie Sidik, George S. Ramseur, The vascular flora of the University of the South, Sewanee, TN. *Castanea* 81(3): 206-236.

Each winning paper receives a check for \$500, sent to the senior author.

ELIZABETH ANN BARTHOLOMEW AWARD – presented by Tom Wentworth

Dr. Conley K. McMullen (James Madison University)

ELECTION RESULTS – announced by Charlie Horn

Member-at-large to Council: Jonathan Horton

President-elect: Brian Keener

Bylaw amendments: all approved

• Addition of student member to Council

• Addition of Vice-Treasurer to Council

• Addition of standing committees: 1) Student Presentation & 2) Communications

APPRECIATION AWARD: Past SABS Present Kathy Mathews was presented an Appreciation Award for service to the Society.

MOMENT OF SILENCE FOR DECEASED MEMBERS:

John Herr, Jr. and Homer Dupstadt

Charlie Horn thanked all SABS members for attending and adjourned the meeting at approximately 8:30 am.

Respectfully submitted by Jay Bolin, Recording Secretary

A. JOSEPH POLLARD PHD, NEWSLETTER EDITOR
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Edible Wild Plants continued from Page 13

plants. They are swollen rhizomes with a well-developed shoot). Turions are produced late in the growing season and break off and float to establish a new population. Turions of this species are sold fresh or canned for use in Chinese dishes (but not to be confused with the more commonly encountered water-chestnut, which is produced by *Eleocharis dulcis*). I have seen water gardens of *N. nucifera* in Malaysia with the turions sold in local markets packed in mud.

Read Lytton Musselman's Edible Wild Plant blog at <http://fs.wp.odu.edu/lmusselm/>



Figure 4. American lotus nuts in various stages of maturity. Those on the left (yellow in color) are slightly immature but edible; those with the chestnut brown fruit coats are ideal; those on the right have the texture of ball-bearings.

SABS Welcomes Our New Members

Dixie Damrel
Milton Diaz Toribio
David Fenner
Bruce Hoagland
Jordan Metzgar
Carolina Siniscalchi
Brian Wagner
Lauren Whitehurst