Arboretum News
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A Newsletter of the Armstrong Atlantic State University Arboretum
In the ongoing quest to introduce new and different plants on campus, I find myself selecting more types producing edible fruit. Many uncommon fruit plants also contribute as ornamentals in the landscape and are not as susceptible to disease and insect problem when compared to crops like peaches and apples. I look forward to sampling these different kinds of fruits but sometimes the plants don’t cooperate. The Japanese Raisintree, *Hovenia dulcis*, growing next to the Science Building flowered for the first time this year, but produced no raisins. The Chinese Date, *Ziziphus jujuba*, growing in front of the Recreation Building did produce a few fruit, but the birds beat me to them. The Cherry Elaeagnus, *Elaeagnus multiflora*, planted behind the Armstrong Annex II never grew big enough over the summer to flower and fruit.

One fruit I did manage to harvest was the Chinese Quince, *Pseucydonia sinensis*, described on the following page. Chinese Quince reminds me of a pear tree I would pass by walking home from high school in Athens, Georgia. Throughout the fall, my friend Chris and I would sneak a pear off hoping it would be ripe, only to be disappointed by not being able to get our teeth in the hard flesh. After a few months of this, the owner of the tree caught us and informed us that they were cooking pears and would never be soft enough to eat fresh. Chinese Quince is the same way. Although they may smell ripe, they never get soft enough to eat fresh, but undergo a remarkable transformation when baked. As seen in the pictures below, the Chinese Quince fruit looks like a pear when peeled and cored, but when baked for five hours, the flesh turns ruby-red with crimson colored juices. The tart exotic flavor pairs nicely with a scoop of vanilla ice cream.
The glossy red oblong berries of Butcher’s Broom, *Ruscus aculeatus*, brightly stand out on this low growing evergreen shrub. While the seeds were used historically as a coffee substitute, the fruit is listed as a strong laxative and should probably be best left to look at rather than eat. Native to Mediterranean Europe and Africa, the fruit ripens in the fall and persists into the following spring. Oddly, its leaves are really cladophylls, highly modified stems, which have been flattened to essentially serve the purpose of a leaf. These leaf-like structures are rigid like a credit card and terminate in a single sharp spine. Recently reclassified in the Asparagaceae family, Butcher’s Broom gets its common name because its stems supposedly were bundled together by butchers in Europe to sweep the gunk off their cutting boards. Able to grow in the dry shade of Live Oaks, examples of this plant can be found on campus on the south side of the Science Building.

Chinese Quince, *Pseudocydonia sinensis*, produces large, highly aromatic fruit in the fall. A native of eastern China, *Pseudocydonia sinensis* is the lone representative of the genus *Pseudocydonia*. Closely related to Chinese Quince is Flowering Quince of the genus *Chaenomeles* and the European Quince of the genus *Cydonia*. Chinese Quince grows into a tall columnar deciduous tree with attractive flaking bark. Armstrong’s Chinese Quince seem to fruit much better after a cold winter. A 15 year old specimen can be found near the fountain in the center of campus.

The word fruit means different things to different people. Most people think of fruit as the edible, sweet and fleshy part of a plant. Botanists define fruits as ripened ovaries along with their contents and connecting structures. A number of the vegetables, nuts, beans, grains and so-called seeds we eat fit this description, and so despite what your cookbook calls them, they’re fruits. Fruits are basically seed containers and seed disseminators and the structure of a fruit often facilitates the dispersal of its seeds. The helicopter fruit of maples and the white parachutes of dandelion puffballs are transported by the wind. Prickly fruit like sand spurs have barbs or hooks that cling to fur and clothing for a ride. Plants that bear edible fruit use their fruit to entice hungry animals to perform the task of seed dispersal. In the Arboretum, a wide variety of fruits can be found in different colors, shapes and sizes.

By Philip Schretter
The fruit of Evergreen Dogwood, *Cornus capitata*, provides the basis for one of its other common names, Himalayan Strawberry Tree. The fruit, an infructescence, is a small aggregate of several individual fruits fused into one red body. The edible fruit is said to have a bitter-sweet flavor with a taste like an over-ripe banana and is consumed raw, cooked or used in preserves. Native to the low-elevation forests of the Himalayas, China, India and bordering nations, our tree is growing with many other dogwood species in the center of campus.

Looking like a rusty cannonball, you don’t want to be standing under a *Camellia crapnelliana* when one of these falls out of it. This heavy wooden capsule forms in the winter from an equally impressive flower in October. The heavy dark seeds inside share a common characteristic with many other *Camellia* species by possessing a high oil content used for everything from cooking oil to cosmetics. This species can be found on campus in the Camellia Garden.

The fruit of Ogeechee Lime, *Nyssa ogeche*, are produced in clusters and have been used as a substitute for limes and other sour citrus. The oblong edible drupes can also be used as an ingredient in drinks, marmalades and sauces. They have the largest fruit of any *Nyssa* species. Found growing in very moist soils in the coastal plain from South Carolina to Florida, this small tree was first discovered by William Bartram along the Ogeechee River in Georgia. Ogeechee Lime provides the source of nectar for bees in the production of Tupelo honey. An example of this species is growing along Arts Drive near Abercorn Street.
Many curious admirers on campus have risked branches covered with vicious hooked green thorns for a taste of these little yellow fruits only to be left with a puckered face. Hardy Orange, *Poncirus trifoliata*, puts on a great show producing an unbelievable quantity of what is technically a modified berry, but the fruit is too sour and seedy for eating out of hand. They can be used to make marmalade or lemonade. We leave them on the thorny branches for winter color. A native of Japan, Hardy Orange is often used as a rootstock for other citrus varieties because of its cold hardiness. Several plants reside on campus including a nice specimen on the east side of the Fine Arts Building.

The fruit of *Punica granatum* ‘Purple Sunset’ doesn’t look like a pomegranate in the grocery store. The leathery, dark purple to almost black berries are produced from spring until fall. While edible, this cultivar’s fruit contains very little pulp. The pomegranate is native to the Middle East, most likely Iran, northeastern Turkey and the region of the south Caspian Sea. Thought to be one of the first cultivated fruits, pomegranate was domesticated beginning about 3500 B.C. This cultivar is growing in front of Hawes Hall and was donated to Armstrong by Mark Griffith of Griffith Propagation Nursery in Watkinsville, Georgia.

Yellow Butterfly Vine, *Mascagnia macroptera*, produces butterfly-like, papery seed pods that change from chartreuse to tan as they ripen. A heat loving vine, Yellow Butterfly Vine flowers from late spring through fall displaying clusters of showy yellow orchid-shaped flowers. This semi-evergreen vine is native to central Baja California, central Sonora and south throughout most of Mexico. We have several examples growing on campus on vertical wooden posts with horizontal copper tubing for support including a nice specimen on the southwest corner of Burnett Hall.
Pineapple Guava, *Acca sellowiana*, certainly conjures up images of tropical fruits and rightfully so. The egg-shaped berries have what has been described as a minty-pineapple flavor or tasting somewhat like a cross between a pineapple and a strawberry. The flesh and pulp can be eaten raw or cooked in puddings, pastry fillings or pies. An easy way to eat them is to cut them in half and scoop out the pulp with a spoon. This easy to grow, multi-stemmed, evergreen shrub is native to subtropical Paraguay, Uruguay, northern Argentina and southern Brazil. A long hedge of this shrub can be found on the east side of the Science Building.

When the rounded leathery husk of the Yellow Buckeye fruit splits open in the fall, the seed inside is said to resemble the eye of a deer which contributes to its common name. Native to the Ohio Valley and Appalachian Mountains, *Aesculus flava* produces large panicles of yellow flowers in the spring. Although the nut-like capsules are poisonous to humans if eaten raw, Native Americans made them edible by roasting the nuts with hot rocks, then mashing and leaching them with water for several days. The toxic properties were beneficial to bookbinders who made a paste from the nut which deterred insect damage. One example of this species can be seen on the south side of the Recreation Building.

Bitter Evergreen Chinkapin, *Castanopsis schleophylla*, produces clusters of nuts that look like acorns completely covered by their caps. *Castanopsis* represents a genus of evergreen trees native to tropical and subtropical eastern Asia. While the nuts of many *Castanopsis* species are edible, I suspect the nuts of a species with the word bitter in its common name might not taste good. Examples of this plant can be found along the Armstrong Center connector road.
The pear-shaped drupe of the Tung-oil Tree, *Vernicia fordii*, contains three to five large seeds and they are the reason this species is cultivated commercially. The oil rich kernel inside the seeds are the source of tung oil, a quick-drying oil used to manufacture lacquers, varnishes, paints, resins, greases, and polishing compounds. Tung oil was used to waterproof Chinese ships as long ago as the 14th century. During World War II, the Chinese developed a way to process tung oil to supplement gasoline for motor fuel. Native to southern China, Burma and northern Vietnam, Tung-oil Trees make attractive small trees with beautiful white flowers. All parts of the Tung-oil Tree are poisonous but the fruits are most dangerous. Eating even one seed may be fatal. A nice specimen grows on campus on the east side of the Fine Arts Building.

Looking like miniature bunches of bananas, the unique seed clusters of the Happy Tree, *Camptotheca acuminata*, dangle in great numbers from this Chinese native like ornaments on a Christmas tree. Growing up to 75 feet tall, this close relative of our native Blackgum and member of the Nyssaceae family has been long used in traditional Chinese medicine for the treatment of psoriasis, liver and stomach ailments and common colds. In the 1930s, United States Department of Agriculture scientists discovered *Camptotheca*’s anti-cancer potential. Today, *Camptotheca*-based cancer drugs collectively account for about $1 billion in sales annually and its demand by the pharmaceutical industry has decimated native tree populations in China. A nice specimen can be found growing on campus in front of Hawes Hall.
The endless task of controlling weeds in the Arboretum is one of the primary responsibilities of groundskeeper Donna Rigdon. During the 20 years she has worked on the grounds staff at Armstrong, Donna has discovered some creative ways to control difficult weeds.

Some of the most aggravating weeds to control are tree seedlings that sprout up in existing shrubs. By the time they have grown big enough to be visible, they are usually too established to be pulled up by hand. Moreover, digging them out with a shovel just makes a mess of everything. These weeds cannot be sprayed with an herbicide without damaging neighboring plants. If the tree seedlings are cut off at ground level, they just grow back. For this type of weed, Donna has improved upon traditional cut surface treatments with a technique we call stem-picks.

In traditional cut surface treatments, herbicide is applied with a brush or other applicator to coat the cut surface of a tree seedling. The effectiveness of this method is dependent upon how much herbicide is absorbed by the growing portion of the plant just below the bark. Just as it is important to quickly plunge cut flowers into a vase of water after they’re trimmed so the fluid transporting cells don’t get clogged when exposed to air, it’s also important to saturate the cut end of tree seedlings. As seen in the accompanying photos, Donna fills a small plastic vial, similar to the ones florists use for individual cut flowers, with a non-selective herbicide like Roundup. She then places the rubber cap with a small hole in it on the vial. Donna uses her hand pruners to cut the tree seedling at a point where the diameter is slightly larger than the hole in the rubber cap and quickly inverts the vial on the cut end. She doesn’t push the cut end all the way into the vial, but just inside cap so the cut end remains covered by the herbicide. Within a few weeks, the herbicide will spread down through the root system and kill the tree seedling.
Large tree seedlings might need several stem picks to be effective. After the seedling has died, she removes the vial and cuts the dead tree seedling short enough so it cannot be seen. This method is also very effective with hard-to-kill vines like catbrier (*Smilax* sp.). Catbrier’s waxy leaves prevent water soluble herbicides like Roundup from absorbing, so foliar applications usually do not give good results. Stem-picks solve this problem, too.

What if the offending weed is too big for a stem pick? Weedy tree species like Chinese Tallowtree and Sweetgum have the undesirable trait of re-sprouting from cut stumps so cutting them down at ground level only encourages them to sprout again. Following cues from the forestry industry, Donna uses herbicide to treat the cut stumps but with an added step. To ensure enough herbicide makes it into growing tissue just below the bark, she creates a shallow dam with duct tape to keep the herbicide from flowing off the stump and to ensure more herbicide will be absorbed. It only takes an eighth of an inch of herbicide for this method to be effective.

Another tough weed to control is nutsedge, especially when it becomes established in low groundcovers like English Ivy, Asiatic Jasmine or low-growing junipers. Pulling the plants out by hand is relatively ineffective because tubers deep in the ground usually break off the pulled shoots causing resprouting. Spraying nutsedge with a non-selective herbicide could damage the desirable surrounding plants. Donna’s solution to this problem is similar to traditional herbicide wick applications but with better control. She begins by wearing an absorbent cotton glove over a longer chemical resistant glove. She then saturates the fingers of the cotton glove with herbicide and swipes the weeds with her gloved hand. This places enough herbicide on the weeds to ensure killing them, but protects the groundcover surrounding them.

While the methods above have been effective for us, you should always read the pesticide label and follow its directions exactly. You may only use the pesticide on sites or crops listed on the label. Be sure to observe all special precautions that are listed on the label. Wear protective clothing or equipment as listed on the label when mixing or applying pesticides. Mix pesticides at the rate recommended for the target site as listed on the label. Never use more than the label says. Follow all label directions for safe pesticide storage and disposal. Always remember to read and heed the six most important words on the label: “KEEP OUT OF REACH OF CHILDREN.”
If you have spent any time exploring the Armstrong campus, you realized that uncommon and unusual plants are the norm. Fifteen years ago, the grounds staff planted Chinese Buttonbush, *Adina rubella*, on the north side of the Fine Arts Building. Like many of the plants we try, it was an experiment because we knew little about this species. This was long before the beds around the Fine Arts Building were irrigated and only the tough survived, growing in the shade of oaks and hickories. Chinese Buttonbush didn’t just survive, it thrived. Growing to form an upright and arching eight-foot tall shrub, Chinese Buttonbush produces attractive abelia-like foliage. Its small glossy leaves are fine-textured and medium-to-dark green in color. The flowers are the real attraction. Looking like little satellites from a 1960s science fiction movie, the slightly fragrant, one-inch flowers appear from mid-summer through fall. A native of China, *Adina rubella* is one of approximately nine species in the genus *Adina* and a member of the Rubiaceae family. Another species growing nearby is *Adina pilulifera*. Also native to China, this species produces larger leaves that appear lighter green in color and flowers that are similar in size but slightly whiter in color than *Adina rubella*. *Adina pilulifera* also seems to be more spreading in habit and not as tall, but our plants are only four or five years old so we don’t know what their ultimate size will be. Both species of *Adina* can grow in normal garden conditions in full sun or part shade. They exhibit good drought tolerance once established. A close relative of *Adina* is our native Common Buttonbush, *Cephalanthus occidentalis*, which grows in most parts of the United States as long as it is not dry. Common Buttonbush prefers wet areas, stream and pond margins and river bottoms. We have this native species in our nursery ready to be planted next to the pond on the east side of campus.

By Philip Schretter

*Adina pilulifera*
Armstrong Plant Sale

Q & A with Janice Nease

AN. How many plant sales does this make for you?
JN. We were trying to think of that a while ago, I think nine of them.

AN. What kind of response do you get from campus and from the public about the plant sale?
JN. I start getting requests for plants for the next year like a week after the sale. I’m always getting requests.

AN. When and how do you start preparing for the plant sale?
JN. As soon as the plants start growing, I start taking cuttings, probably around the end of May or the first of June and right up until a month before the sale.

AN. What else do you do besides taking cuttings?
JN. If I’m working in a flower bed and I see plants that need dividing, I’ll divide them. Divide and conquer, I call it.

AN. How do you decide what plants to offer?
JN. Anything with a bloom, that’s the eye catcher. If it’s blooming in the fall, that’s what they are heading to. They’ll go straight to it.

AN. I’ve seen that the plant sales give people the opportunity to ask you questions about plants. What are some of the common questions?
JN. How tall does it get, does this take sun or shade, what does the bloom look like, what color is the bloom? They’ll ask me, “Do you think this would look good at my house?” and I don’t even know where they live. They’ll start drawing little stick figures on a piece of paper and then they’ll draw a little house next to it and ask me “Do you think this plant would look good next to this?”

AN. I’ve had people approach me that bought plants from sales years ago and start telling me about the plant and how it’s growing. Does the same thing happen to you?
JN. Yes, whenever they find out it’s time for a plant sale they’ll start telling me about a plant they bought a couple of years ago. They’ll tell me it has grown and taken over their yard, and that it’s gotten huge and it’s beautiful. They’ll ask me “Are you going to have some more of that this year?” They kind of want to stick to the same things but I try to encourage them to get out of that little comfort zone and try something different. We always get good feedback.

AN. What do you have that’s unique this year?
JN. Hmm, I would have to say probably those peppers.

AN. What kind of pepper is that?
JN. That’s Black Pearl, it’s an ornamental pepper.

AN. Is that one you can grow from saved seeds? Does it come back true to seed?
JN. Yes it does, in fact I’ve already taken some of those peppers off and put them up to save for next year. Another unique plant we’re selling is Hamelia erecta. You don’t find that everywhere. We’ve got some interesting hibiscus, too. There are some real pretty ones like Turn of the Century and Peppermint Flair. I took a lot of cuttings of Lord Baltimore which makes a giant dinner plate that’s sort of a red color. So, they’re going to be going fast, I hope.

Editor’s note: This interview took place during last year’s plant sale on October 11, 2011. Janice propagates the plants for and directs the organization of the plant sales.
Mexican Oaks

The impressive egg-sized acorns of Quercus insignis are sure to make the squirrels on campus happy. Recently planted on the east side of the Student Union building, this native of southern Mexico produces one of the largest acorns in the world. Mexico has the greatest number and diversity of oak species of any country in the world with 160 species. Several other Mexican species are growing well in the Arboretum including Loquat Leaf Oak, Quercus rhysephylla, and Lacey Oak, Quercus glauoides. Thanks to Bob McCartney of Woodlanders Nursery in Aiken, South Carolina for donating this Quercus insignis to Armstrong.