Chinquapin

The Newsletter of the Southern Appalachian Botanical Society

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Spring 1997

From The Editor's Desk.....

In the last issue we featured one of Dick Smith's rather useful columns for many of us on our namesake, the American chestnut and chinquapin, and for a second time we overlooked the byline (please pardon our oversight, Dick). In this issue we continue with another report on chestnuts from a man who had not only a respectable appreciation for the split rail fence in the landscape, but experienced them differently than most of us could. Bill Hooper was one of those to whom we owe much for his insight to provide not only a long-lasting landscape feature that we enjoy along the Blue Ridge Parkway, split rail fences, but also good farming practice for public observation. His story is told by another known for his contributions to the Parkway, naturalist Bill Lord.

Often editors have a certain amount of begging to fill the usual quotas of newsletters. With this issue, we have more than enough, so I bow out to the contributors. My only additional comment is that if you find something that strikes a cord in your experience, share those thoughts as a letter, or, better yet, as a contrasting article. And don't forget, we will be holding our annual meeting with the Association of Southeastern Biologists in Greenville, SC, at Furman University in April. The meeting promises to be one of our best yet.

ENDOWMENT CHALLENGE

At the end of the 1996 Endowment Campaign, only 18 of the requested 25 new donors came forward to help the Society meet the John E. Fairey, III Challenge. However, since more than 30 members contributed $100 or more, Dr. Fairey honored his pledge and gave the promised $1000 anyway. This moves John to the Platinum ($2,000) contribution level. Although we are disappointed that more of the nearly 600 members who have not contributed $100 or more failed to step forward, we are pleased that the endowment drive continues to move upward.

Plans are underway for 1997 and 1998 Endowment fund raising. Ideas that have surfaced include these: (1) a phonathon to contact those members who have not yet contributed $100 or more and (2) a new joint challenge by two members to encourage past contributors to add to their contributions and new donors to give for the first time. If you have never contributed, make 1997 your year to do so. Please help your Society move toward its $200,000 goal.—The Endowment Committee

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Shirts, Mugs and Totes

To order T-shirts, mugs and tote bags, please contact The Complete Naturalist, 2 Biltmore Plaza, Asheville, NC 28803, phone (704) 274-5430, FAX (704) 274-5408. The owners of this store, Laura and Hal Mahan, have agreed to receive orders and money, ship the shirts at cost and give SABS 100% of the receipts as a service to the Society. We are very pleased to accept their offer, as it will make shipping easer (they do it every day). Both Laura and Hal are active in teaching natural history and conservation. Be sure to note T-shirt size (M, L, XL) and whether you want it in white or natural (beige). T-shirts are $10 each; totes are $8 and mugs are $5. Please include $3 for first item and $1 for each additional item for shipping.

Castanea Back Issues

The special issues of the Barrens (1994) and Invasive Plants (1996) symposia are available for $10.00 each and regular back issues are $6.00, starting with 1995. This price reflects the current production, handling and shipping costs. For the years 1990-1994 they are $2 per issue and $6 per volume ($12 for symposium year of 1994). Members can still get back issues before 1990 for a bargain $1 per volume plus shipping and handling. This bargain price applies to availability (there are some missing numbers in many volumes). Contact Secretary-Treasurer Charlie Horn whose address is listed on the front.

Welcome To Our New Members:

Welcome aboard the fastest growing regional organization in botany!
John R. Boetsch, Hendersonville, NC; Richard Busing, Corvallis, OR; Geoff Call, Antioch, TN; John Dodge, Annandale, VA; Jean Fike, Duncannon, PA; Tim Draude, Lancaster, PA; Mark Gallyoun, Chapel Hill, NC; Steve Grund, Etna, PA; David M. Hix, Columbus, OH; Terry Holdsclaw, Terrell, NC; Maureen Kellogg, Oakton, VA; Laura Luecking, Mascoutah, IL; Q. Victor Ma, Knoxville, TN; Jordan R. Mayor, Fairfax, VA; William H. Moorhead, III, Richmond, VA; Mary Priestley, Sewanee, TN; Jody & Beth Shimp, Harrisburg, IL; Roderick Simmons, Falls Church, VA; Randall Small, Ames, IA; Spring Island Trust, Spring Island, SC; Harry Jan Swartz, College Park, MD; Stephen Turner, Rosedale, IN; Schuyler L. Vinzant, Alexandria, VA; Jerome V. Ward, Auburn, AL; Elizabeth Fortson Wells, Washington, DC; Mark Widrlechner, Ames, IA; A. Christina Williams, Athens, OH; Tad Zebryk, River Ridge, LA.

Botanical Organization Spotlight

Editor's Note: In the upcoming issues we hope to feature various botanical groups within the region. Please send a summary of your organization to the editor for publication.

North Carolina Natural Heritage Program
(Summarized from TNC North Carolina Chapter "Update" by Linda Pearsall, Head, NC NHP)

One of the first Eastern state programs to be initiated by The Nature Conservancy (TNC) was the North Carolina Natural Heritage Program (NHP). On April 1, 1976, the NC Division of Parks and Recreation announced the creation of a partnership between the State and TNC that was called the North Carolina NHP. In the 20 years of its existence, this program has been one of the most significant conservation efforts since establishment of the National Park Service.

The NHP is a State data gathering and disseminating program. Its goal is to locate, survey, gather data and join in partnership with landowners in the protection of the State's significant natural areas. By 1995, 1,595 areas were listed as having national, state, or regional significance. The office maintains 15,804 records and has about 400 areas formally listed with landowner partnerships. The office disseminates over 600 copies of its publications to various users, answering over 1000 letters each year. To date half the counties of the state have completed county-wide inventories. Combined with the effort of the NC Chapter of TNC, the state NHP has proven to be an important conservation tool for North Carolina.

Exotic Pests Conference

Exotic Pests of the Eastern Forest Conference is scheduled for April 8-10, 1997, to be held in the Club House Inn in Nashville, TN. Afternoon field trips are included with the conference. For registration information, contact Lee Patrick (615)352-6299 or Rick Ledbetter (404)347-7193 or write TN-EPPC c/o Friends of Warner Parks, 50 Vaughn Road, Nashville, TN 37221.

Mafic and Ultramafic Survey in Georgia

The Georgia Botanical Society is taking on a project to survey the flora of several of Georgia's mafic and ultramafic plant communities this year. These are sites with ferromagnesium rocks which have a low quart, feldspar and feldspathoids and yield nearly neutral soils. Scott Ranger is seeking publications and information on such sites and would like to have your suggestions or perhaps you can join them March 1, 15; May 31; June 21 or September 13 for trips in Georgia. Contact him at 770-429-1836, fax 770-590-1108 or by e-mail (ranger@america.net).

Letters To The Editor..

Bob Gunn writes:

Your "'Mountain' Mints?" article [Chinquapin 4(4):26, 1996] reminded me of my favorite, Snow-on-the-mountain, *Euphorbia emarginata*. The plant is hairy, but I thought its common name was derived from the white margins on the upper bracteal leaves.

I enjoyed George Ellison's Sweetshrub article. I have one shrub that set an achenepot in 1995. I planted the ãcheneś, and now have 10 or so 6 to 8-inch seedlings. I assumed the role of a white-footed mouse. The only person I told this story to was Elton Hansens, who promptly pulled two achenepots out his pocket with about 15 mature achenes. Elton and I were enjoying a cookie or three at the Western Carolina Botanical Club Christmas Cookie Fest. At least I know who to talk to! The achenepot of the sweetshrub has been labeled a pseudocarp in Ellison, hypanthium in Cronquist, or pometum in Spjut. Spjut defines a pometum as "a multiple fruit or carpels embedded in a hypanthium or receptacle that is not divided into more than one cavity. Typical -*Rosa canina L.*"

Wild Ideas

Ideas are born in inquisitive minds. Perhaps some of us have had some speculative thoughts that have turned out to be basically correct when the facts were properly evaluated. Researchers often are driven by hunches and, due to discipline, must work for years to come to publishable conclusions. Many of us do not feel that these wild ideas should be left unexplored but will not have an opportunity to probe them further. This is the basis of this column. The wild idea needs to have some factual basis, though it does not necessarily need to be fully supported, as in a reviewed publication.

Dispersal of Quillwort Megaspores After Fertilization

By Arthur V. Gilman

The heterosporous *Isoetes* include several remarkably disjunct species, perhaps the most striking of which is I. hawaiiensis from Maui (Taylor et al. 1993). In this respect, distribution patterns are similar to those of homosporous ferns with wide disjunctions, e. g. *Asplenium septentrionale, Polystichum scopulinum,* etc. But it is contrary to common sense to believe that the dispersal unit of Isoetes is the unfertilized spore. Unlike ferns, which can generate new populations from a single spore, *Isoetes* require both megaspore (female) and microspore (male). It is therefore sensible to postulate that long-distance dispersal of *Isoetes* is accomplished by already-fertilized megagametophytes. In *Isoetes*, the megaspore splits along the commissures to receive the flagellate sperm produced by the microgametophyte and the megagametophyte develops within the otherwise intact megaspore case. The spore case is a structurally strong and protective structure which may also prevent water loss from the developing megagametophyte. Thus, a fertilized megaspore would be an ideal unit for dispersal by waterfowl, as well as for the dispersal by flowing water in riverine systems.

Literature cited: Taylor, W.C., W.H. Wagner, Jr., R.W. Hodby and F.R. Warshauer. 1993. *Isoetes hawaiiensis*: a previously undescribed quillwort from Hawaii. Am. Fern J. 83: 67.

BOTANICAL EXCURSIONS

MUSINGS ON AVIAN SEED DISTRIBUTION

By George Ellison

Mauritius is a pear-shaped island in the Indian Ocean about 500 miles east of Madagascar. It is famous in ornithological circles for having been home to the now-extinct dodo bird, a large flightless critter that was so hapless its very name now bears that connotation, among others. But the dodo still speaks to us from time to time about things, especially of the seminal relationship between plants and birds.

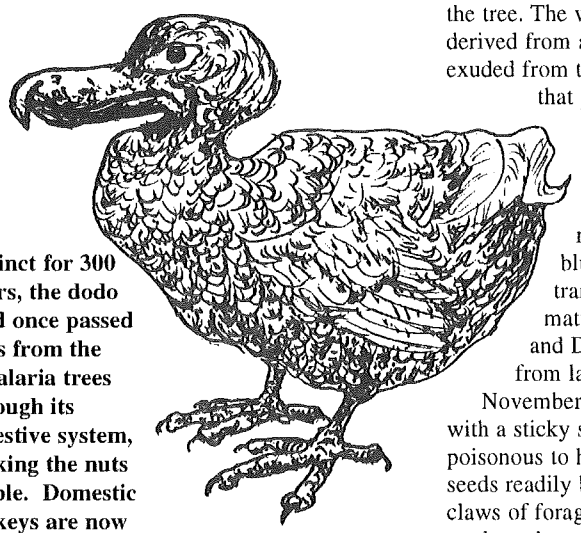
By the 16th century Mauritius had become a convenient stopping place for seafaring spice traders. The docile dodos, which were slightly larger than a turkey, were slaughtered by the thousands for food. Those that persevered had their eggs eaten by the wild pigs and dogs that had been introduced. By 1681 Mauritius was dodoless.

Three hundred years later, researchers noted that a plant species on the island — the calvaria tree — was represented by only 13 individuals, each more than 300 years old. As the average life span of the tree is about 300 years, the species was about to go the way of the dodo. Noting that no calvaria had taken root since the demise of the last dodo and that remains of the tree's nuts have been found with numerous dodo skeletons in the Mauritius swamplands, the researchers put two and two together, concluding that passage through the digestive system of the dodo was necessary before calvaria nuts could become active and germinate.

No dodos, no new calvaria trees? Not necessarily. It has recently been determined that domestic turkey gullets mimic the action of the dodo's digestive system. A new generation of calvaria seedlings has been propagated. If these survive to produce nuts, "the dodo tree" — as some, alas, have labeled it — will have been literally snatched from the gaping maw of extinction ("The Dodo Bird" 1996).

I don't know of any plant-bird relationship in our part of the world that rivals the dodo-calvaria story as such an extreme example of obligatory mutualism. But we do have numerous instances of plant species that rely on birds for seed dispersal. We rightly think of insects and the wind when we ponder the pollination tactics of plants. (The notable exception, of course, being the ruby-throated hummingbird, which has specific relationships with various plants, especially the cardinal flower.) And we usually think of wind, water, rodents, etc., when we ponder seed distribution tactics. But no agent is more significant and fascinating in regard to seed distribution than the avifauna of our region (Murray 1986).

A concept known as "foliar fruit flagging" is perhaps the place to start when considering these relationships. According to this line of thought, species like poison ivy, Virginia creeper, black gum, sassafras, spicebush, dogwood and sumac produce an early flush of foliage color in late August or September while most of the forest is still green so as to attract resident or migrating birds to their fruit. After digesting off the pulp of berries or arillate seeds, the birds regurgitate or defecate seeds, thereby spreading the respective plants far and wide. As with the nuts from calvaria trees, many fruiting structures have to pass through a specific sort of bird's digestive system before they will become viable.



Extinct for 300 years, the dodo bird once passed nuts from the cavalaria trees through its digestive system, making the nuts viable. Domestic turkeys are now assigned to that task

— Sketch by Elizabeth Ellison

Some plants do not readily allow their seeds to drop to the earth to enhance the opportunity for avian distribution. Magnolia cones are attractive scarlet to rust-brown fruiting structures composed of numerous pocket-like follicles, each containing one or two crimson seeds the color of nail polish. Instead of falling to the ground, these seeds remain suspended in the air by slender, almost invisible threads called "funicular outgrowths" in botanical manuals. ("Funicular" means anything operated with strands.)

Why? The most obvious explanation is that this tree has adapted itself to cater to animals which can distribute their seeds at a considerable distance from the parent. Birds are the obvious choice. And they can best locate the bright red seeds dangling in the air rather than lying on the ground. In order to make their product all the more appealing, magnolias produce seeds that contain a lipid fat quantity which ranks among the highest of any fruiting plant. Birds eating such fare, with up to 62% fat store a lot more fuel with relatively little weight cost than if they were eating stuff like poison ivy berries, winterberry and chokecherry, which measures less than 10% lipid fat (Kricher 1988).

Red cedar trees bear conspicuous blue-green, fleshy, highly-aromatic, berry-like cones, each containing three or four tiny brown seeds. Birds are fond of the fleshy cones and serve as the primary dispensers of red cedar seeds. Cedar waxwings are so fond of this food that they are, in part, named for the tree. The waxwing part of the name is derived from a bright red waxy substance exuded from the feather shafts of adult birds that perhaps serves as a signal of age and social status among mating birds (Ehrlich, Dobkin and Wheye 1988).

Numerous bird species — notably cedar waxwings and bluebirds — are fond of the translucent white berries that mature on mistletoe in November and December. (The plant blooms from late September into early November.) Mistletoe seeds are coated with a sticky substance called viscin that is poisonous to humans. These viscin-coated seeds readily become stuck to the beaks and claws of foraging birds. When the birds pause to clean themselves on tree limbs, they unwittingly distribute mistletoe seeds from treetop to treetop throughout the woodlands (Calder and Bernhardt 1983).

One final thought: In addition to minimizing damage to natural resources, many ecologists and public policy officials have turned their attention to putting together ecosystems that have been radically changed or destroyed altogether. Often surrounded by suburbs and highways, these areas are cut off from most sources of seeds, other than those from a few wind-blown species. Fruit-eating birds are essential to woodland development but they have incentives to visit areas like landfills where there are no food sources, places to perch or cover from predators. Accordingly, those dedicated to restoring such sites are planting fruit-bearing plants to encourage avian visitation, seed dispersal and renewal (Cohen 1992).

These are but a few of the numerous instances that could be cited in regard to plants and their avian seed distributors. In recent

Continued on page 5

Taxonomic Study of *Rhynchospora* § *Longirostres*

Gerry Moore of Vanderbilt University was one of the 1995 recipients of the SABS Graduate Student Research Award. During 1996 he made field trips through the Carolinas and Florida collecting material which he deposited in Vanderbilt Herbarium. His Report:

There is considerable disagreement regarding how many terminal taxa should be recognized in this section of *Rhynchospora* for the Southeast. My work has led me to conclude that there are four distinct species (*Rhynchospora careyana* Fernald, *R. corniculata* [Lam.] A.Gray, R. inundata [Oakes] Fernald, *R. macrostachya* Torr. ex A.Gray) here. The specific limits can be blurred, especially in disturbed habitats of Florida, where more than one taxa occurs together. At these sites interspecific hybridization is suspected with individuals of intermediate morphology and reduced seed being encountered.

Also creating confusion is the fact that *R.careyana* was based on the basionym *Ceratoschoenus macrostachyus* var. *patulus* Chapman. Unfortunately, Chapman's original material (from which a lectotype must be chosen) examined in 1996 at NYBG was collected from suspected hybrid swarm populations in Florida. Much of this material is of intermediate morphology between either *R. careyana* and *R. corniculata* or *R. careyana* and *R. inundata*. From this material I plan to choose a specimen that best represents the description provided by Chapman (and later Fernald) as a lectotype. Recognizing that even this material could be of hybrid origin (I am of the opinion that neither Chapman nor Fernald were describing a nothotaxon), I plan to supplement the lectotype with an epitype (see Art. 9.7 of the current Code) collected from an allopatric population of *R. careyana* where hybridization is not suspected.

During these field trips, material (anthers and root meristems was also collected for cytological investigations. Chromosome counts have been made for all four of the aforementioned taxa. Observations were also made on the patterns of infection of an ovaricolous smut fungus *Testicularia cyperi* Klotzsch. (I thank John Nelson (USCH) for his assistance with field work in South Carolina.) —Gerry Moore, Dept. Biology, Box 1812, Station B, Vanderbilt University 37235. e-mail: mooreag@ctrvax.vanderbilt.edu

Noel Studies Tallulah Gorge

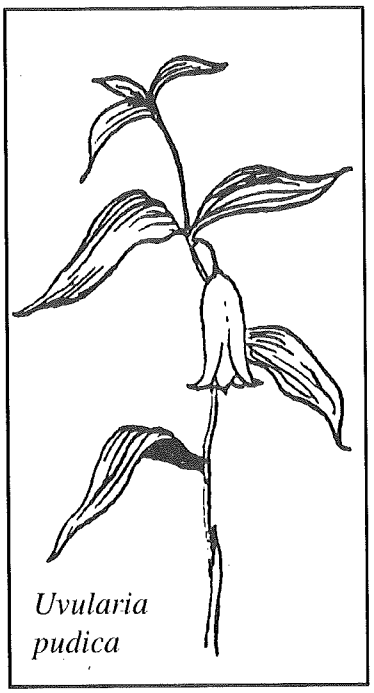
William Noel of Clemson University was a 1995 recipient of our Graduate Student Research Award. He has been conducting a vegetational survey of the recently designated Tallulah Gorge State Park on the borders of Rabun and Habersham Counties, Georgia. He notes that the flora appears to be different from other granite-gneiss gorges of the region with the presence of rare species such as Trillium persistens, *Platanthera integrilabia, Carex amplisquama* and *C. pedunculata*. Here he notes northern species such as *Deschampsia flexuosa, Saxifraga careyana, Boykinia aconitifolia* and *Carex albursina* as fairly common in the gorge. He noted historic populations of *Xerophyllum asphodeloides* and *Tsuga carolnia* and rather rare populations of *Parnassia asarifolia, Polygala paucifolia* and *Philadelphus hirsutus*. He has acquired several hundred vouchers and continues the work until July of 1997.—**Ed. Note: It would be great if the population of *Lindernia saxicola* could be relocated in this effort.**

Look Again

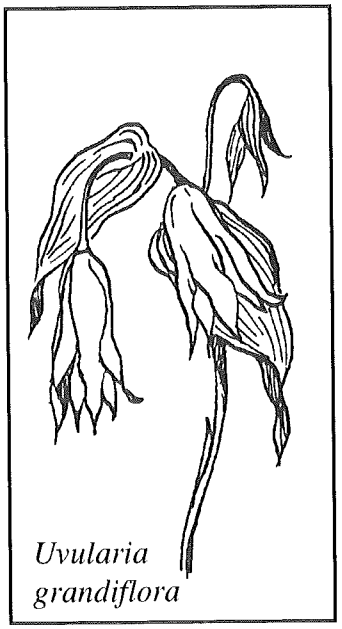
(Reprinted from: Shortia 8(1): Spring, 1986, Newsletter of the Western Carolina Botanical Club.)

Whoever devised the name "Bellwort" for the *Uvularia* genus can hardly be accused of having overworked his imagination. There are at least a dozen other genera in the *Liliaceae* which also have flowers that suggest the shape of a bell, to say nothing of scores in other plant families. The specific names also are descriptive — as they should be — but in a genus which consists of only five species one has the feeling that labels could have been chosen which would serve to more narrowly distinguish one from another.

Uvularia perfoliata, for example, is only one of two species in which the stem appears to pierce the leaves (actually, the basal leaf lobes surround the stem and coalesce). Its flowers are light yellow with conspicuous orange papillose glands on the inner surface of the perianth segments, or tepals. The other perfoliate species, *U. grandiflora,* lacks these glands and, as the name implies, produces slightly larger flowers. Much more obvious, though, are the deep butter-yellow color and the fact that the tepals are curiously twisted, which gives the flowers a limp, wilted aspect even when fresh. In the South, the Large-flowered Bellwort is confined entirely to the mountains.



Uvularia pudica



Uvularia grandiflora

The other three species have leaves that are merely stalkless, but only one of these — *U. pudica,* or Mountain Bellwort — is common in our area. It is a slender plant with bright green, lustrous foliage and bears pale yellow flowers.

U. sessilifolia, also known as Wild Oats, is similar but is almost exclusively limited to the Piedmont Province. Its leaves are dull, light beneath and the flowers are pale straw color. Finally, *U. floridana* occurs only on the Coastal Plain from South Carolina southward. A leafy bract just behind each flower-stalk is its field mark.

— Dick Smith

BOOK CORNER

[If you know of books that might be of particular interest to the lay readers of our organization, please submit a brief paragraph of 3-8 lines for consideration in the newsletter. Longer reviews should be sent to Audrey Mellichamp for inclusion in Castanea.-Ed.]

For those interested in photographs of mosses and liverworts, one of the most recent "picture books" available is Mosses and Liverworts of Hong Kong by R. L. Zhu and M. L. So, Vols. 1 & 2, 1995 & 1996. The color photographs are really good and the books will help popularize bryology. Some species are treated that also occur in eastern North America. Both volumes are available from Kwok Leung Yip, Dept. of Biological Sciences, University of Cincinnati, Cincinnati, OH 45221-0006 for $30 each. Visit the web site "http://www.uc.edu/~yipkl/" for more information and to preview the cover illustrations.—Paul Davison, North Alabama University.

Comparative Description of the Native Trees of the Sewanee Area, second edition, by Stephen Elliott Puckette with Mary P. Priestley, Karen Kuers and Thomas O. Hay, offers an alternative to species that are confusing and found in the southern Cumberland Plateau area. It is a list with descriptions of nearly 100 species meant to be a helpful reference for anyone interested in recognizing the trees. It is printed on recycled brown stock and contains 45 line drawings. The book may be purchased through the University of the South Press, 735 University Avenue, Sewanee, TN 37383. The cost is $12 ($12.99 in TN).

Eagle Hill Field Seminars, 1997

Humbolt Field Research Institute announces its 1997 advanced, professional and speciality natural history seminars for its facility on the Maine coast. These programs are one- to two-week seminars with intensive field experience that are taught by national and regional authorities. Seminar sessions start on June 1 and continue through September 17. Included are many topics in botany ranging from algae to mushrooms, bryology, and community ecology. A detailed brochure is available from the institute at P. O. Box 9, Steuben, ME 04680-0009, phone 207-546-2821, fax 546-3042 and e-mail: "eag@hill@maine.maine.edu". They also have a web site: "http://maine.maine.edu/~eaglhill"

Arkansas *Carex* (Cyperaceae): an introduction

by Philip E. Hyatt

In 1991, while wrapping up a master's project at the University of Arkansas in Fayetteville, I decided to tackle a long term research project. I'd wasted 20 years deciding what to work on, but finally choose an area of research that fit my interest: something inexpensive to do because I wanted to fund it out of pocket, something that would contribute to an area not well studied or neglected by scientists because of the difficulty involved and something that would take a considerable amount of time to accomplish. So, in May 1991, I told a few friends I'd set a goal of publishing a book on the sedge genus *Carex* in Arkansas in 2011 and began field work toward that end.

Plans grew rapidly. With about 100 taxa in Arkansas, I estimated I would need to collect or review about 7000 collections to do the project justice, estimating 100 collections for each of the 75 counties to cover the 40-60 or more species per county, including duplicates of some. To date, field work resulted in about 1500-1800 Arkansas *Carex* collections, excluding duplicates, in addition to the review of about 1100 herbarium collections. A. A. Reznicek reviewed 404 additional Arkansas Carex collections at MICH, treated here as if reviewed by the author, since the author has relied heavily on determinations by Reznicek to sort out many species pairs and groups.

With abundant consultation and numerous letters from A. A. Reznicek at MICH helping with species identification, this work grew into the beginnings of a book reviewing of the status of the 120 taxa of the genus *Carex* occurring within the state of Arkansas, USA. During the time several new state records have appeared, a publication of preliminary results in a journal is nearly ready for submission. As a result, two versions exist, the publication version and the "long" version with additional information. The publication list provides frequency and habitat as recorded in the state for the 120 taxa now recognized as extant or historic, while county dot maps show known distribution. With selected taxa, the manuscript for publication gives additional information, especially on rare species, those previously considered rare in Arkansas or about taxa reported new to Arkansas. Both documents consider several taxa as distinct which were previously treated as synonyms by other authors. Taxa excluded from the Arkansas flora, considered as possible additions to the state flora, and two hybrids are reported.

This note serves to advertise this project. I would be glad to annotate any Arkansas Carex collections (loans through SFRP herbarium) and can provide more information on the genus in Arkansas to interested parties via the long version of the manuscript. After working two years in Louisiana, I've decide to at least produce a journal article similar to the current Arkansas short manuscript. This will provide descriptions of habitats, frequency and taxonomy without the long term plan of adding keys, descriptions, drawings or photographs, hypertext for term definitions and easy reference to an electronic version of the Arkansas long version. For additional information, contacts on potential loans, etc. I can be contacted in several ways: Mr. Philip E. Hyatt, Forest Botanist/Ecologist; Kisatchie National Forest, 2500 Shreveport Highway, Pineville, Louisiana, USA, 71360. Phone: 318-473-7262. Fax: 318-473-7117. E-mail: hyatt@linknet.net (home) OR fswa/s=p.hyatt/ou=r08f06a@mhs.attmail.com (work).

Botanical Excursions continued from page 3

years the pollination tactics of plants have — quite justifiably — generated a lot of interest. Now we need to observe more closely the other end of the life cycles of specific plants and document more fully how their seeds are distributed. And what could be more enjoyable than watching both birds and plants at the same time?

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(Thanks to Dr. Fred Alsop III, ornithologist at East Tennessee State University, for suggesting this column might touch upon dodo birds and cedar waxwings, although Fred is not to be held responsible for the specifics presented herein.)

WALKING GINGERLY THROUGH THE WOODS

Barry Glick

Its a blazing hot summer afternoon and you've decided to go botanizing. Hiking up one of the steepest, rockiest slopes that you've ever ventured upon, your parched throat feeling like sandpaper, you reach for your canteen and...Oh no, its empty. Geez, you're two hours up the mountain, past the point of no return. Watcha gonna do, who ya gonna call. How bout Ginger???

No, I don't mean the Ginger that you buy at the supermarket, the one that they make ginger ale from or that you use in your stir-fry. I'm talking about *Asarum* or *Hexastylis*–our wild Ginger.

Long known and used by Native Americans for it's stimulant effect, members of these genera have a pungent aroma when you snap their firm roots that's reminiscent of the tropical Ginger. In fact you can easily substitute it for the culinary ginger in your favorite Thai or Chinese recipe.

I frequently chew a piece of the root of our most common Ginger, *Asarum canadense* whenever I stumble across a patch, which is almost every time I go hiking in the woods. Its very easy to identify as its foliage is among the largest of our native plants,

Wild Gingers are members of the Artistolochiaceae (Birthwort) family. This is a very small family of five genera, most of the species being of tropical origin. The common name of the family seems to be derived from two Greek words, "aristos", meaning best and "lochia", meaning delivery. This name pertains to the genus *Aristolochia* which is supposed to be of value as a medicinal herb in childbirth.

In West Virginia, we have five species of Wild Gingers. According to C. Ritchie Bell, author of the Flora of the Carolinas, only the deciduous species are still in the genus *Asarum,* the evergreen types are now placed in the genus *Hexastylis. Asarum canadense* is most common in moist rich woods in light to dense shade. I have seen leaves as big as your head under favorable conditions. You have to get down on your hands and knees to see the curious, pendulous flowers which hang down under the foliage. The flowers are pollinated by ants and other small insects that crawl into the flowers and move the pollen from the open pollen sacs on the anthers to the sticky receptive stigmas.

Hexastylis virginica is the only evergreen type that I've found in West Virginia. It seems to favor the higher elevations of Greenbriar County on mainly Northern facing slopes.

According to Flora of West Virginia, it occurs in 16 of our 55 counties. You can tell it by the glossy, round to cordate (heart shaped) leaves 4-6cm (1-1.5") wide. The plant is very prostrate reaching from 8-24cm (2-6") in height. The foliage is silvery mottled and like snowflakes, no two are alike.

Also noted are *H. memmingeri*, named for Edward Read Memminger, and supposedly similar to *H. virginica* but with a more rounded leaf and smaller calyx (the outer part of the floral structure), H. heterophyllum ("heterophyllum" means diverse leafed) which can be found in five western counties and *H. shuttleworthii*, named for Robert James Shuttleworth (1810-1874), which is much larger than any of the others and has been seen at only four stations in West Virginia. It is more common in the mountains of the Carolinas and down through Georgia and Alabama. Fred Galle of Callaway Gardens in Georgia discovered a particularly beautiful variegated plant and named it 'Callaway'. I have seen leaves of *H. shuttleworthii* approaching 6" long.

There are several other *Asarum* and *Hexastylis* species in the U S, another more southern species is *H. arifolium*, native from Southern Virginia down through Florida and West to Alabama, the specific epithet refers to the arrow shaped leaves which are evergreen and can be up to 20 cm (5") long. On the West Coast there are two species, both considered evergreen so that would put them into the genus *Hexastylis, H. caudatum* which grows from British Columbia to California and H. Hartwegii said to grow in Oregon and California.

I also grow some of the Asian species such as *H. splendens*, which has the most silvery markings of any plant that I have seen, on huge arrow shaped leaves. In Japan people fanatically collect these plants. There are several societies and many exhibitions. One of my Japanese trading partners recently sent me two books, each with over 400 color photos of cultivated *Asarums* and *Hexastylis.* One book focused on the various leaf types and the other on the bizarre flowers.

In the garden these plants, *Asarum canadense* in particular, make great ground covers for the shade. If conditions are favorable they spread quickly and vigorously. I use them under trees and in the front of taller plants. If they get too much sun they will burn a little, so the more shade, the better. In cultivation they usually get 8"-12" tall. Plants can be divided in the early spring by slicing the thick rhizome which grows very close to the soil level, sometimes exposed. You can also collect the seeds which ripen in mid-late summer. Sow them on the surface of 4" pots and cover with a layer of granite grit. Place the pots outside for the winter and the seeds will germinate the following spring.

As briefly mentioned earlier, another genus in the Artistolochiaceae family is *Aristolochia.* We have two species in these mountains, A. *macrophylla,* (named for its large leaves) formerly known as *A. durior* and *A. serpentaria* (named for its reputed value in curing snakebites).

A. macrophylla is common in rich moist woods throughout the state. The common name, Dutchmans Pipe Vine refers to the unusually shaped curved flowers that resemble a Dutch pipe. The leaves on this vining plant are very large, I've seen them approaching 20cm-25cm (up to 12"). The vine can climb 5m-10m (15'-30') up a tree. They make a great addition to the garden where you have a porch or trellis to cover. If you look in the woods, you can find old vines that are 3cm-6cm (1"-2") thick and perfectly coiled around tree branches.

The other species, A. serpentaria, which grows from 12 cm to 45 cm (4" to18") tall has oblong leaves, cordate at the base that are 4 cm to 12 cm (1.5" to 5") long. It has a history of use as a bitter tonic since pioneer times.

The key to successful gardening with native plants is to replicate the growing conditions found in their natural habitat. I hope that everyone gets a chance to enjoy these plants both in the wild, and in their gardens

Barry Glick has written several articles for this and other gardening publications. When he's not in the woods exploring for new plants, he's out in Cyberspace where he edits the popular Internet gardening magazine THE CYBER-PLANTSMAN-
http://www.gardenweb.com/cyberplt/

Meehania cordata

When Thomas Meehan, a Philadelphia botanist, died in 1901, I'm sure he went to the big forest in the sky feeling proud that Nathaniel Lord Britton (1859-1934), named a genus of plants in his honor. I'd also bet that he didn't know how wonderful his namesake plant was. In fact, most people don't know how wonderful Meehania cordata is.

Charles and Martha Oliver are proprietors of the Primrose Path Nursery in Scottdale, PA and dear friends of mine. I'd noticed Meehania cordata listed in their catalog. After reading their description and hearing them extol the virtues of this little plant, I asked them to please bring me one on their upcoming visit. I had requested one the year before, but it always seemed they were sold out. So I was emphatic that I must have one and intimated should they not bring me one, they may end up sleeping in my barn that

chilly autumn night.

Tiarella, Heuchera and *Heucherella* are the main focus of their breeding work, so we had planned a day of *Tiarella* hunting in Wolfpen Hollow, a hauntingly mysterious woodland area near my farm. We'd just descended a summit into the foggy creek bottom when I heard Charles laughing hysterically behind me on the trail. I turned to see what he found so amusing and saw him pointing to the ground. There, all around him, the ground was covered with Meehans Mint.

Talk about getting caught not "practicing what you preach." Me, who in all of my lectures on native plants makes a point of telling people to "look in your own backyard!" Well, after I recovered from my initial embarrassment, we looked further and found the entire west-facing slope of the hill down to the creek bed was a veritable carpet of dark, almost glossy green, cordate, (heart shaped, hence the specific epithet cordata) leaves, vining over rocks and decaying tree limbs, basking in the deep shade of the hemlock and oak woods above the water.

I took some cuttings, not knowing whether they would root so late in the season, but I had a gut feeling of optimism. Sure enough they rooted in a matter of weeks.

The following spring, I checked in on the population and found that the new growth was thick and lovely. In June, I went back to observe the flowers and found a sea of lilac, pink and lavender trumpet-like blooms at the tips of the stems. They reminded me very much of *Scutellaria,* another member of the mint family and close relative of *Meehania.*

In my garden, now having many plants from the rooted cuttings that I overwintered under a dark bench in a poly tunnel (another testament to the virtues of *Meehania* is how deep a shade it thrives in), I proceeded to plant them under a small grove of lilacs and viburnums. They responded to the rich humus that accumulated under these older shrubs and almost immediately started to wind their way around on the ground.

Taxonomically speaking, *Meehania cordata* is a member of the Lamiaceae (Mint) family. In North America *Meehania cordata* is a monotypic (single) species in the genus. Its reported range is from southwestern Pennsylvania to North Carolina and Tennessee. Its heart leaves are on the small side, averaging 1-1 1/2 " wide at the petiole and are about 1" long. I suspect that it is hardy to zone 4, maybe even 3.

I know of at least one other *Meehania* species in cultivation, that being *Meehania urticifolia,* the Asian cousin to *Meehania cordata.* It can be found growing through the woods of the mountain forests in the Honshu area of Japan. The specific epithet *urticifolia* refers to the nettle like foliage. It's also easy to propagate from stem cuttings and by division.

Meehania cordata is one of the best plants I can think of for those dark and foreboding corners of the garden where there isn't enough light for most other plants. Even if it didn't have the added benefit of those really bright colorful flowers, I would recommend it as a very useful groundcover. – Barry Glick Sunshine Farm & Gardens, Route 5, Renick, WV 24966. Phone 304-497-3163 or FAX-497-2698; e-mail: barryg@slip.net **[Ed. note: What is the likelihood that this species will not become naturalized in a fashion similar to *Ajuga reptans*?]**

Recollections...

by Bill Lord
(Adapted from The Bark, Spring 1996, the newsletter of The American Chestnut Foundation; used by permission.)

Thinking about the chestnut tree recalls the time, 1948-55, when I worked as a naturalist for the Blue Ridge Parkway. The Parkway extends from the southern end of Shenandoah National Park in Virginia, southwesterly 469 miles into the Great Smoky Mountain National Park in North Carolina. The chestnut had disappeared from the mountain forests but woodlots throughout the farm regions still showed the forlorn remains of dead trees, the bare branches seemingly raised in supplication. Prior to the mid-thirties, when the fungus blight choked life from the trees, the chestnut was the main "cash crop" in Blue Ridge farm country. Each fall a man on horseback rode trails and rutted byways, calling out to housewives on porches and men in the fields. To use the local term, he "warned" them that merchants would soon be coming to buy nuts they had gathered. The price varied from seven to twelve cents a pound and represented the most money anyone could earn in so short a time.

But the blight came and so did the Great Depression. Hard times burdened the people and the chestnut trees alike.

When I arrived shortly after WWII, farm life was on the upswing. In large part it was due to government agronomy programs personified by a friendly county agent who doled out good agricultural advise in a neighborly manner.

The Blue Ridge Parkway had its own county agent, you might say. He was their agronomist, who administered the thousands of farmland acres adjacent to the motor road. His name was Bill Hooper.

Bill dealt mainly with farmer neighbors whose land abutted the Parkway. They could lease the land for the nominal fee of $1.00 per acre for crops or pasture. This was a bargain not to be overlooked. But the Parkway benefited also, as it became a part of the natural scenery at minimal expense.

You might suspect that there was a catch to so perfect a setup, and there was. The farmer had to play by the rules. The rules mandated that the land should be properly fertilized and limed, that no row crop such as corn or cabbage be grown in successive years and that no more than four sheep or one head of cattle could graze per acre of pasture. Also, fences must be tended and erosion corrected.

What's wrong with that? Well, some farmers thought such activity was too fussy and too much work: but all eventually came to see that it produced good results. Some farmer-leasers followed the rules on leased land but not on their own adjacent property. Soon they recognized the comparison in favor of the leased land and more prosperous and productive times ensued.

What has this to do with the chestnut tree? It so happens that Bill Hooper was a great admirer of the tree and its folklore. At times I was fortunate to walk and talk with him at his stops along the Parkway's many miles. One thing he cherished in particular was the rail fence, outlining fields in great bounds alongside the motor road. Almost all, if not all, rails were made of chestnut.

Those were the days when the skeletal remains of the dead chestnut trees were still common and available to be split into rails. Bill Hooper never missed a chance on his Parkway trips to add to his hoard of rails to maintain the existent fences. As he told me, "I had a complete record of every fence along the Parkway when I turned that part of my responsibilities over to the (park) rangers in the 1960's. At the time we had 43 miles of rail fence."

Bill Hooper retired from Blue Ridge Parkway the last day of December 1974. We still meet at Parkway events and like to stroll the hiking paths and look for such things as the green hope of a chestnut sprout in vibrant leaf, doffing in the shade.

The roadside fields are still bounded by the weathered chestnut rails of "Bill Hopper's fences." The rot-resistant wood will last fifty years or more.

I've introduced to Bill The American Chestnut Foundation's research farm in southwest Virginia and our ongoing progress to produce a blight-free forest giant. He hopes they will come of age in time to mend his fences.

Calendar of Events

Ann. SABS and Assoc. of So. Biol. Meeting
Furman University
Greenville, SC
Apr 16-19
864-294-3249;
e-mail: lew.stratton@furman.edu

Spring Wildflower Pilgrimage
Great Smoky Mountains,
Gatlinburg, TN
Apr 25-27
615-436-1262

28th Spring Wildflower Pilgrimage
Georgia Botanical Society
Athens, GA
706-353-8222

Wildflower Weekend
Natural Bridge, KY
May 2-4
800-325-1710

Landscaping With Native Plants
Cullowhee, NC
July 23-26
704-227-7327

Complimentary addressed issues: Please share with your interested friends who might wish to become members of SABS. Thank you--Ed.

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