

NORTH
CAROLINA

wild flower

PRESERVATION
SOCIETY, INC.



FALL 1984

Gaillardia pulchella

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Cover Drawing - by Jo Moseley Brown, artist from Wilson.

PRESIDENT'S MESSAGE

I am pleased to have the opportunity of serving as president of the North Carolina Wild Flower Preservation Society. I look forward to continuing activities established by previous officers and members of the Executive Board as well as exploring some new programs.

Last year the Society established a scholarship fund to support student research on the propagation, nutrition, distribution, environmental requirements, diversity, ecology, and conservation of native plants. Contacts have been made with schools throughout the State and we look forward to research on these problems. There are many questions about our wild plants. Bringing new ideas forward will benefit all of us.

At a recent fall meeting of the Executive Board a proposal was made that the Society prepare a guide to local gardens and other areas of horticultural interest in the State. Many of us know of private gardens whose owners welcome visitors. Also nurseries often welcome visitors. Municipalities and other governmental agencies frequently maintain gardens and wild flower trails, as do many private companies. It is proposed that the Society compile a list of such sites--gardens, trails, conservation areas, etc.--and make it available to our members. It will be necessary to set up rules concerning visiting hours, size of group, etc. If you have a favorite site for possible consideration in such a guide, send it along to me for screening by an appropriate committee.

Ray Hoggie

No spring nor summer beauty hath such grace
As I have seen in one autumnal face.

John Donne
1573 - 1631

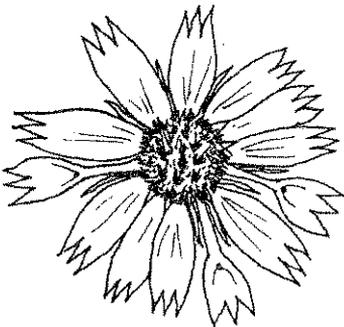
AN UNUSUAL GAILLARDIA

by

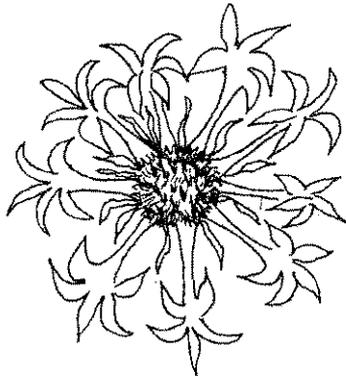
Jeannie Wilson Kraus

A visitor to the North Carolina coast between April and the first frost is likely to see the showy Gaillardia. Also known as fire-wheel, blanket flower or bandana-daisy, this member of the Aster family was named in honor of the French botanist, Gaillard de Merentonneau.

I have always heard locally in Carteret County that the flower was brought to the United States from Europe by "little old ladies" who wanted to decorate our beach dunes with colorful flowers. It is true that many of our roadside weeds made their way to the New World as seeds via ships and cargo. However, since the genus Gaillardia occurs primarily in the southwestern United States, it has probably migrated eastward along dry roadsides (W. H. Rickett, 1967, Wildflowers of the United States, Southeastern States, and B. W. Wells, 1967, The Natural Gardens of North Carolina). Gaillardia is also listed as an escape



Normal Rays with
intermediates between
ray and discoid florets



Large discoid
(tubular) florets

from cultivation. Thriving in dry habitats, which not only includes roadsides, old fields and sandy lawns, Gaillardia also colonizes beach dunes, and does indeed "add color."

In the literature, Gaillardia pulchella is described as being extremely variable. This species can be an annual, biennial or short-lived perennial, decumbent or erect, with few to many branches. The alternate leaves are variably entire, serrate or pinnately cut. The typical color for ray florets is orange-red to purple-red with yellow tips, but some may be entirely yellow. The disc florets are similarly colored. The wide variation in color can easily be observed in dry coastal habitats. I was surprised however, to find that some plants on Carrot Island across from Beaufort (part of the Rachel Carson National Estuarine Sanctuary) had no ray florets at all, but instead had enlarged disc florets. Some flower heads had a combination of ray and enlarged disc florets, while some appeared to be intermediate between the two.

I checked Radford, Ahles and Bell, 1968, Manual of the Vascular Flora of the Carolinas, and sure enough, the description says that the rays may be absent and flowers may frequently become irregularly discoid, but are much larger than normal disc flowers. B. W. Wells, 1967, in The Natural Gardens of North Carolina noted that rays on some plants are merely enlarged tubular or disc florets.

The theories of evolutionary patterns in composites help explain why this variation is possible (R. Good, 1974, Features of Evolution in Flowering Plants). The capitulate inflorescence (head) is theoretically derived from the telescoping of a spicate raceme or a cyme. Many floral patterns in the Asteraceae such as the dandelion, thistle and button-discoid patterns, have all ray (ligulate) or disc (tubular) florets, but not both. The daisy pattern of floral dimorphism with the presence of both rays and discs, may have origi-

nated from simple inflorescences with all the flowers alike. The adaptive advantage of having large and colorful ray florets would be to better attract pollinators to the tiny disc florets. If this evolutionary sequence in the Asteraceae holds true, then it seems possible that this discoid pattern in Gaillardia may resemble an earlier morphological state rather than a random mutation.

The presence or absence of ray florets is known to be widely variable in the Asteraceae. Intermediate conditions where a floret has characteristics of both, also appear throughout the family, and is particularly noticeable in cultivated varieties. Since Gaillardia has been widely cultivated, this discoid variation could have appeared more frequently during the cultivation process. When someone in Beaufort planted a packet of seeds of Gaillardia from Park Seed Company, they got surprising results. Out of the same seed packet, flowers ranged from orange-red and purple-red, some with yellow tips, to entirely yellow flowers. Some plants had large discoid flowers, like the plants found growing in the wild. When seeds such as these escape to roadsides or fields, the genetic variants could mix with "wild" populations, creating an even wider range of variations.

It is a fascinating phenomena, and I am interested in learning just how common this condition is for Gaillardia. If anyone has seen this variation occur in the wild or in your own wildflower garden, I would enjoy hearing about it.

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Jeannie Wilson Kraus is the Natural Science Curator at the N. C. Maritime Museum (formerly Hampton Mariners Museum) in Beaufort, N. C.

THISTLES

by

Dorothy Wilbur

One's first reaction to thistles is usually negative. They're sharp and prickly for one thing, and they're persistent. Livestock won't eat them, so they tend to take over a field or pasture. Their seeds are attached to white hairs, like the dandelions, and they effectively scatter with the wind, creating even more thistle plants.

As early as 1795, Vermont outlawed thistles, and in 1813 New York did the same. In 1918 thistles had become so invasive in the United States that the USDA issued a bulletin on the eradication of thistles, advising farmers to "cut and smother it, apply carbolic acid, hot brine, sulphuric acid, kerosene, or strong solutions of caustic soda to stumps that remained."

Folklore and legend regarding thistles is often negative--it's been called the devil's weed--and Adam and Eve were condemned to live among the thorns and thistles.

But if you're not a farmer with a thistle-ridden pasture, and if you're careful when touching the plant, there are positive aspects, too. In the first place, a thistle plant is striking to look at. It's a perfect example of a member of the Composite family, all of whose members have heads that are composed of many individual flowers all bunched together on a stalk. There are two kinds of thistles, plumed and non-plumed. The plumed species have the silken white hairs referred to in fairy-tales as "thistledown." The most common thistle in our area, the bull thistle, or *Cirsium vulgare*, has these white hairs above the pinkish-purple flower heads. Another in the *Carduus* genus that has a positive connotation is the artichoke, which would have a typical thistle flower head if the part we eat were allowed to mature. And the thistle seed often purchased for feeding to goldfinches

is a non-prickly thistle called *Gyzotia abyssinica*. There are many in this family throughout the world, including some found only in the southwestern deserts, and others, known as alpinas, found at high mountain elevations.

Some thistles have a high nitrate concentration, making them valuable for medicines. And the Scots certainly take a favorable view of the plants - the thistle has been the emblem of Scotland since 1687. Legend had it that this started when some Norsemen tried to attack a castle under cover of darkness, began to creep barefoot through the moat, and discovered that it was full of thistles. Their shrieks of pain alerted the Scots inside and the Norsemen were routed.

Two groups of thistle relatives widely cultivated in American gardens are globe thistles, or *Echinops*, and some twenty varieties of *Eryngium*. All is not prickly and negative in the Thistle family.

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Dorothy Wilbur, artist, botanist and Program Coordinator at the North Carolina Botanical Garden in Chapel Hill, can be heard every Monday on WUNC public radio. The above is an excerpt from her program on August 27, 1984.

I MARK THE SUMMER'S
SWIFT DECLINE

I mark the summer's swift decline
The springing sward its grave clothes weaves
Whose rustling woods the gales confine
The aged year turns on its couch of leaves.

Oh, could I catch the sounds remote
Could I but tell to human ear--
The strains which on the breezes float
And sing the requiem of the dying year.

HENRY DAVID THOREAU
1817 - 1862

BIDENS

by

Holmes Smoot

A certain sign that fall is at hand is the sight of masses of yellow Bidens in bloom in September and October along ditches, hollows and fields around the highways. In my home county of Wilson, they are especially prolific--huge fields ablaze in yellow bur-marigolds as far as the eye can see. It is a beautiful sight to behold; indeed, it is glorious to see the clusters of yellow flowers atop the slender branched stalks swaying gracefully in the breeze.

There are several species in the Piedmont and Coastal Plain areas with *B. artistosa* a native, and *B. polylepia* an invader from the Midwest. "Tick-seed-sunflower" is a coined term which shows the similarity to its close relative *Coreopsis* and the sunflower. Another coined name is bur-marigold which alludes to the fact that the seed head is a "bur" and sticks to clothes and animal fur. The name *Biden* means "two teeth," a feature that all seeds have. Another common name is beggar ticks.

Bidens (pronounced "By-dens") are very prolific, completely covering an area. They grow very close together, excluding almost all other vegetation and are annuals, bursting forth anew each year from self-sown seeds. The bur-marigold grows two to four feet tall and has bright, bright yellow flowers, slightly cupped at the end of profusely branched stalks. They are not particular as far as soil is concerned, but are found in moist ground or arid, dry soil.

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Holmes Smoot has made the study and growing of native plants of the Coastal Plain her specialty.

CHANCE DISCOVERY OF BLIGHT
IN *LINDERA MELISSAEFOLIUM*

by
Lionel Melvin

Since my return in the early 1950's with Dr. Totten and his brother-in-law, Spicer Williams, to the location of the *Lindera melissaefolium* in Bladen County which I had discovered in the early 1930's, I had unsuccessfully tried to grow it in cultivation until about two years ago, when the first of my two plants developed the blight that always had terminated my efforts to keep alive this temperamental species. In desperation I lifted these two last specimens, removed with a water hose the soil from the roots and dusted the diseased tops and the roots with Ortho Rose Dust. Soon new sprouts appeared. The foliage was mottled with a chlorosis, but in time after heavy watering, the new leaves lost their chlorotic look. I had to repeat this same treatment this spring and I got increased suckers from one of the clumps.



Lindera melissaefolium

So far as I know, there are only two clumps left of the original colony of this rare plant that I was fortunate in discovering after 99 years of its having been lost to our ken. One is still alive on one of those little islands in the channel of water near the office of Brookgreen Gardens in South Carolina; the other is in Mrs. J. Norman Henry's garden at Gladwyn, Pennsylvania. My two clumps that I now have are from a second colony that I found on the west side of the same pond as was found the first. It is gratifying to learn of another location found on the north end of this pond as reported in the Spring 1984 North Carolina Wild Flower



Lindera benzoin

Newsletter, for the second location that I found seems to have been destroyed when a fire lane was plowed through the colony. Benson Kirkman informed me that the larger brush had been removed from this last colony. This may have been a mistake, since it encourages weedy plants to take its place and this spice plant is definitely an understory plant.

As for the report that a small population exists in Cumberland County, I believe this is the *Benzoin reticulatum* that C. L. Boyton found in a swamp near Hope Mills which was mistaken for *Lindera melissae-folium* by Palmer and Styermark. Dr. Totten and I examined the specimens now deposited in the U. S. National Herbarium and found them to be of a pubescent form of *L. benzoin* (See my report on Rare North Carolina Plants - Journal of the Elisha Mitchell Science Society, Vol. 70, No. 2, Dec. 1954.)

Illustrations by Lucy and Lionel Melvin's daughter, Sandra Melvin Gray of Pleasant Garden, North Carolina.

ALONG GEORGIA HIGHWAYS

by
Ann Barber

"A host of golden daffodils" you may not see on Georgia's roadsides, but how about a thousand Atamasco-lilies? Since Georgia's highway wildflower program, started in 1973, is now coming into fruition, your chance of seeing this splendid sight is much improved.

The heart of the wildflower program is a contest which may be entered by any maintenance foreman employed by the Department of Transportation, and the rewards for recognizing, nurturing and propagating native plants on their rights-of-way can be considerable. Each year prizes of \$500, \$300, \$200, and two of \$100 are awarded to the person who is judged to have done the best job in these areas. The contest is a joint venture between the Garden Club of Georgia and the Department of Transportation. The cash awards, which have perpetual funding from a private source, are known as the Virginia Hand Callaway awards in honor of one of the prime movers in the creation of the program.

One of the problems encountered early on was the lack of suitable material to instruct the foreman who wished to enter the contest on how to propagate his plants. The material needed to be simply written, easily portable and should cover most shrubs, trees and wildflowers he would likely encounter on his roadsides. This is where the North Carolina Native Plant Propagation Handbook filled a great need. The fact that the price was reasonable made it possible for most of the foremen who showed a real interest to be given a copy and they have been valuable indeed in helping persons who, as one of them put it "always thought wildflowers was just weeds with blossoms on them," get started cultivating them.

Some native plants have proved to be star performers in the harsh world of road shoulders and rights-of-way. One of the best is Verbena, both tenuisecta and rigida. Growing in waste areas, sometimes even in mounds of left-over asphalt pieces and paving base, they start blooming in April and continue intermittently until late fall. Showy Evening-primrose, Oenothera speciosa, is another species which seems to thrive on adversity and will exploit the smallest pocket of soil in an expanse of asphalt. Several species of Bidens and Coreopsis lend themselves well to the practice of delayed mowing, which is the best technique for busy and understaffed maintenance crews. If mowing is delayed until after the seed are set, the stand of wildflowers will be spread further down the roadside each year and the area, in time, becomes truly spectacular. One of the best uses of this technique was by a foreman near Lakeland, Georgia, who has managed to spread a stand of Bidens growing in a wet ditch into a golden carpet, some two miles in length. The foreman, incidentally, has won first prize in the contest for this and other efforts.

While officials of the transportation department first seemed to view this program with less than whole-hearted enthusiasm, their attitude recently has been much more supportive. One benefit has proved to be in the realm of public relations. Employees of the Department of Transportation who have had very little contact with the public except as adversaries sometimes go to local civic groups and garden clubs to explain their projects and to show slides of their accomplishments and local newspapers often publish accounts of their work. Since much of the program's success depends on the public understanding of what they are trying to accomplish, all this is an important aspect of the work. It is true that the roadsides do not look as well groomed as when they were mowed "fenceline to fenceline" several times a year, but the increased cost of fuel and labor has now made this practice impractical. When the public

understands that the trade-off is a bit more frowziness in exchange for many more wildflowers in years to come, they are less critical of the delayed mowing and the leaving of backslopes for natural regeneration.

It may seem from all this that Georgia's wildflower program is going full speed ahead. Unfortunately, there are formidable problems. One of the most troubling is the increased use of herbicides and chemical growth retardants, not only by the highway personnel, who are subject to some restraints, but by others such as rural electric cooperatives who often leave a roadside looking like General Sherman had passed that way. Other offenders are the traveling public. There is nothing so discouraging as getting out to enjoy a stand of fringed orchids and finding one's self knee deep in cans, bottles and food wrappers. And, of course, not all local maintenance people have been converted to this new way of doing things and refuse to take any part in it.

But, overall, the news from Georgia's highways is good. When you travel our state, particularly in spring and fall, look for our roadside flowers. We hope that each year there will be more participants in the contest and more stands of wildflowers for you to enjoy.

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Associate editor, Patricia Ross, met Ann and Tom Barber on the North Carolina Botanical Garden trip to Northern England in June, and asked Ann to tell our NCWFPS readers how the Department of Transportation in Georgia came to use the North Carolina Native Plant Propagation Handbook. Ann Barber was a judge in this contest for several years and now works informally with the maintenance foreman in her district in finding and identifying native plants.

Several of her husband Tom's photographs help illustrate Wildflowers of the Southeastern United States by Duncan and Foote.

A WELCOME SUSAN

Drivers on the Palisades Parkway in New Jersey these days find themselves suddenly blinking at what seems to be a great patch of sunshine thrown down in the middle strip. They realize as they pass that it's a few hundred square feet of those fetching wildflowers, black-eyed Susans. This isn't the work of nature but of landscape architects. It's an experiment, they say, to brighten up endless areas of bland green and to save on mowing--as if it were necessary to have a practical explanation for such a happy idea.

There are other wildflower plots on the parkway--blue cornflower, orange and red Indian blanket--and there will be more if the project seems to work out. There is no reason it shouldn't. Texas has lined its roads with bluebonnets, California with poppies. The black-eyed Susan is a welcome choice. A daisy-like perennial with yellow petals and a dark center, it is one of the most amiable of our wildflowers. It grows readily, returns every summer and blooms for months.

Nobody is sure where it got its flirtatious common name, but its botanical name, *Rudbeckia*, has an important history. Olof Rudbeck, one of the finest natural scientists of the early 18th century, took an interest in a young student named Carl Linnaeus, who had come to study at Upsala University in Sweden. Professor Rudbeck not only taught and inspired young Linnaeus but helped him out with money and jobs.

Years later, Linnaeus set out to classify and name everything on earth; historians like to say that he gave names to more flora and fauna than anyone since Adam. Coming to a wildflower that had been sent from America, he nostalgically called it "*rudbeckia*." The dark-eyed addition to the commuter's landscape was a grateful scientist's way of immortalizing an old professor.

Editorial, New York Times, September 3, 1984.

CORAL BEADS
by
Augusta Haberyan

The brilliant red berries, almost translucent, were first noticed at Cedar Point near Swansboro in September. With binoculars, my husband Henry was scanning the treetops for migrating birds which often stop to feed on the wild grapes. At first, we thought the berries were some species of Smilax since the leaves do resemble those of catbriar and not at all leathery.

In July, clusters of small white flowers appear both terminally and adjacent to the leaf axils. Again, it could be confused with catbriar, but our catbriar had bloomed in May and by July had clusters of green berries.

Fortunately for us, Julie Moore came for a visit and she identified the vine as Coral Beads (*Cocculus carolinus*). We were pleased to learn that Coral Beads had not been previously reported for Carteret County although it does grow on nearby Bear Island in Onslow County. It is a beautiful plant and would add interest to any garden.

Growing close to the Coral Beads is another species of the family Menispermaceae and that is Moonseed (*Menispermum canadense*). This vine has a most attractive gray-green, ivy-shaped leaf and distinctive twining tendrils. Perhaps we will be able to beat the birds to the fruits of both these vines and have them available for Wildflower Society members next spring!

Augusta and Henry Haberyan have recently moved from Wilson, North Carolina, to a naturalist's paradise on the White Oak River near Swansboro.

ASHEVILLE, N. C. - June 6 to 12 was a busy time at the Shinn garden near Asheville as attendees of the 50th annual meeting of the American Rock Garden Society (ARGS) came out to view the plants cared for with such love by Tom Shinn and his late wife, Bruce. Of course, there were not so many species in bloom as could have been found there in early May, but due to unusual weather conditions in our mountains this spring, a number of plants that normally bloom in succession were blooming simultaneously. During the week of the ARGS meeting over 300 visitors got to see the *Sarracenia*, *Hexastylis*, *Lyonia*, *Kalmia*, *Styrax* and *Zenobia* in bloom. The *Stewartia malacodendron* was in its glory. A few plants of *Phlox stolonifera* var. Bruce's White had kept their blossoms longer than usual so that the guests could re-live the experience of coming upon that tiny jewel in the environment in which it was discovered. One *Lilium grayi* bloomed much earlier than its neighbors, giving the guests an added treat. All in all, a pleasantly surprising inflorescence had developed for the visitors' enjoyment, and according to all reports, it was enjoyed.

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Tom writes that his son and daughter-in-law, Tommy and Peggy, were a tremendous help in making the week a success. They not only cleaned up the trails, marking them with numbered colored stakes, labelled plants giving both botanical and common names, but were on hand each day to serve ice water and cold lemonade to the guests.

The 300+ that was mentioned represented thirty states, mostly New England and the west coast, but also Canada, England, Scotland, Norway, Japan, and New Zealand.

AWARDS

THE LEPINIEC AWARD, one of the highest honors given by the Rock Garden Society, was awarded to Tom and Bruce Shinn.

The following is Dr. C. Ritchie Bell's presentation speech:

A wonderful mountaineer team whose love of our native plants enabled them to bring forth a true "miracle in the mountains" - the Shinn Garden - one of the most extensive and most interesting private collections of native plants in the South.

A couple with an incredible store of valuable first hand knowledge about our mountain plants which they willingly shared with many gardeners, botanists, and assorted visitors from across the state, from over the nation, and, indeed, from around the world.

Two true "plant people" whose interest in, skill with, and love of our native plants did much to stimulate interest in native plant propagation, realistic conservation and, indeed, lay the foundation for two of North Carolina's Botanical Gardens - at Asheville and Chapel Hill.

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Dr. C. Ritchie Bell was presented the Wherry Award at the American Rock Garden Society's 50th Anniversary Banquet which was held in Deer Park on the Biltmore Estate, June 9, 1984.

The brilliant autumnal colors are red and yellow and the various tints, hues, and shades of these. Blue is reserved to be the color of the sky, but yellow and red are the colors of the earth-flower. Every fruit, on ripening, and just before its fall, acquires a bright tint. So do the leaves; so the sky before the end of the day, and the year near its setting. October is the red sunset sky, November the later twilight. Color stands for all ripeness and success. We have dreamed that the hero should carry his color aloft, as a symbol of the ripeness of his virtue. The noblest feature, the eye, is the fairest-colored, the jewel of the body. The warrior's flag is the flower which precedes his fruit.

Thoreau's Journal, October 24, 1858
HENRY DAVID THOREAU

WILDFLOWER RESEARCH CENTER REPORT

Landscape designers, horticulturists, city planners, gardeners and developers will all benefit from the research programs being conducted at the National Wildflower Research Center. The Center, which was founded in December 1982 with a gift of land and a pledge of \$125,000 from Lady Bird Johnson, aims to conduct basic scientific research on native and naturalized plants in an attempt to answer questions about their cultivation. The Center also plans to make information about wildflower products, projects, problems and research efforts available through a national information clearinghouse.

Currently, there are 72 test plots on the grounds of the Center. Five of the plots are planted with commercial wildflower or meadow mixes. Next season, plots testing native grasses are also planned; since most commercial meadow mixtures do not contain grasses, researchers are attempting to determine what grasses are compatible and what are the best ways to establish them. Various planting techniques are being tested in other beds, including grain drill planting, hand broadcasting, and establishing a meadow planting with wildflower mulch. With the last technique, cut wildflowers are used as mulch, and the seeds remaining in the mulch establish the planting.

All of the test plots are designed to test species and wildflower mixtures under highly competitive conditions so that researchers can determine the least amount of preparation and care required to establish a successful planting. Based on the results of these tests, researchers hope to determine the most economical mixtures, planting methods and maintenance procedures.

The Center has also established a Scientific Advisory Board, which is the first step in setting up a network of universities, botanical gardens and

arboreta, seed companies and government agencies, all of which will conduct similar tests. The ultimate aim is to collect and verify information about these plants for dissemination throughout the country.

Finally, the Center has established a computerized information clearinghouse that will provide information about our native plants and act as a referral service. A list of species that perform well and a list of sources for further information in each state are already available. The Center hopes that as more individuals--both amateur and professional--participate in the clearinghouse program, more information can be collected and made available to users.

For information, send a self-addressed, stamped, business-size envelope to Clearinghouse, National Wildflower Research Center, 2600 FM 973 North, Austin, TX 78725.

MARY TATE GRAHAM

1901 - 1984

Mary Tate Graham, 83, widow of Dr. C. Allan Graham Sr., died September 21, 1984, at her home, Holly Hill, following a lengthy illness.

A native of Randolph County, she was a life member and past director of District 6 of the North Carolina Garden Club and was the recipient of the Scroll of Honor for her contribution to the club's work. She was Organizing Chairman of the North Carolina Wild Flower Preservation Society and through her efforts the first roadside picnic and rest area was erected in Ramseur. She organized and was first president of the Ramseur Garden Council, the Ramseur Garden Club and many other clubs throughout the area.

Donations have been made in her memory to the Scholarship Fund of the North Carolina Wild Flower Preservation Society.

NCSU RELEASES FIRST CREEPING
BLUEBERRY CULTIVARS

by

Benson Kirkman and Jim Ballington
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Raleigh, NC 27695-7609

Two evergreen creeping blueberry cultivars are being released to nurseries and researchers through North Carolina Agricultural Research Service for use as ornamental groundcovers. 'Bloodstone' and 'Wells' Delight' are the first creeping blueberries to be selected and named through a university research program. They represent the results of four years of selection trials with this potentially useful native groundcover.

The creeping blueberries (Vaccinium section Herpothamnus) comprise a pair of species under current taxonomic treatments, with a limited distribution primarily within the eastern half of the two Carolinas. The most widespread species, V. crassifolium Andrews, occurs in the outer coastal plain in South Carolina and inland to the fall line just below the North Carolina-South Carolina line. In North Carolina it occurs throughout most of the coastal plain, sandhills, and occasionally into the eastern piedmont. A gigas form, endemic to Lexington County, S.C., is geographically isolated from the typical form and has recently been proposed as a separate species, V. sempervirens Rayner and Henderson (*Rhodora* 92:503, 1980). The released cultivars are a result of a Ph.D. research project into the horticultural, taxonomic, and ecological status of the subgenus or section Herpothamnus.

The creeping blueberry is a low, trailing or decumbent evergreen shrub with short upright branches and many prostrate branches which readily form adventitious roots at the nodes in contact with the soil or litter. In open pinelands of the coastal plain and sandhills this rapid layering and spreading often results in massive colonies, occasionally forming a

nearly solid evergreen carpet. Many clones of the creeping blueberry are reminiscent of periwinkle (Vinca minor) in vegetative characteristics and suggest excellent potential as a groundcover in the eastern piedmont and coastal plain of the southeastern United States. This potential has been previously recognized by authors such as B. W. Wells in his Natural Gardens of North Carolina (1932, 1967), but the potential has never been exploited. In addition, the ability to root stem cuttings easily and rapidly under intermittent mist at any time of the year makes plants attractive to nurserymen. In effect, the creeping blueberry offers the potential of an evergreen ornamental groundcover similar to periwinkle but able to tolerate well-drained, exposed sites subject to heat and drought which periwinkle will not tolerate.

'Wells' Delight':

'Wells' Delight' was selected from a native stand of creeping blueberry (Vaccinium crassifolium) in Moore County, N. C., in 1979. The name 'Wells' Delight' was chosen to honor the late Dr. B. W. Wells. This clone has been the most consistent performer in all trials, and was outstanding for disease tolerance at Castle Hayne, N. C., under conditions highly favorable to disease development.

'Wells' Delight' has a distinctive dark green, lustrous, generally elliptic leaf. The average leaf size is slightly larger than typical for the species. New growth is a contrasting lighter green, and stems take on a contrasting reddishness in winter. Foliage color and texture are reminiscent of dwarf Japanese hollies. It is a low growing clone (12-16 cm in the NCSU Arboretum) and of outstanding vigor.

The broad ecological amplitude and adaptability of this clone indicate that it should be an effective heat and drought resistant groundcover plant for the eastern piedmont, sandhills, and coastal plain of the Carolinas. It is worthy of trial throughout the southeastern United States.

'Bloodstone':

'Bloodstone' was selected from a native stand of large-leaved creeping blueberry (Vaccinium semper-virens under current taxonomic treatment) in Lexington County, S. C., in 1979. This clone has a broadly elliptic leaf that is dark green and semi-lustrous. The leaf size and texture of the plant are particularly reminiscent of periwinkle (Vinca minor). The light reddish-green of the new growth contrasts well with the mature foliage in summer. In winter late maturing foliage takes on an attractive reddish cast and the stems become a distinctive dark red. The name 'Bloodstone' was chosen to reflect these seasonal color changes and contrasts.

This cultivar appears to have outstanding potential as an evergreen groundcover when established on well-drained sites in the eastern piedmont, sandhills, and inner coastal plain of the Carolinas, and probably the entire southeastern United States. It is adapted to full sun as well as partial shade. 'Bloodstone' has exhibited problems with Phytophthora cinnamomi and leaf and stem anthracnose (Colletotrichum gleosporioides) under conditions of excessive soil moisture and high temperature and humidity at Castle Hayne, in the outer coastal plain of North Carolina.

Availability:

Plants of both cultivars should be available to the public by the end of summer 1985. A list of nurseries purchasing plants will be available from the North Carolina Foundation Seed Producers, Inc., P. O. Box 33245, Method Station, Raleigh, NC 27606 (Tel # (919) 737-2821). The Wildflower Society should encourage members and friends not to dig plants in the wild, since the potential damage to the environment is unwarranted. In addition, most plants in the wild are inferior to those we are releasing and would prove unsatisfactory in cultivation. Finally, the ease of propagation of the creeping blueberry should lead to an ample supply in a short time period.

Cultural Hints:

Creeping blueberries grow best in full sun to partial shade on well-drained sites. Heavy shade may result in poor growth and powdery mildew as well as increased incidence of other diseases. Adequate soil and air drainage are important for control of Phytophthora root rot and other diseases (especially stem blight). Optimum growth for 'Bloodstone' and 'Wells' Delight' was achieved by direct planting through a pine bark mulch in a moderately well-drained clay soil with a pH range of 5.0 to 5.7 (higher than customary for blueberries) and a high phosphorus status. No other fertilizer was applied and over-fertilization is a major cause of failure with creeping blueberries. With deep sandy soil, incorporation of pine bark humus or aged sawdust in addition to a pine bark or pine straw mulch is recommended for moisture conservation and weed control. Where additional fertilization is warranted for establishment, one application per year of soluble 20-20-20 at 1 rounded tsp/gal (1 lb/100 gal) should be sufficient.

Benson Kirkman is finishing a Ph.D. in Horticulture at NCSU this year under Dr. J. R. Ballington and Dr. A. W. Cooper. Dr. Jim Ballington is the blueberry and bramble breeder at NCSU.

It is wonderful what gradation and harmony there is in nature. The light reflected from bare twigs at this season...is not only like that from gossamer, but like that which will ere long be reflected from the ice that will incrust them. So the bleached herbage of the fields is like frost, and frost like snow, and one prepares for the other.

Journal, November 13, 1858
HENRY DAVID THOREAU

MINUTES
SPRING 1984

The 1984 Spring meeting of the NCWFPS was held at Revel's Barbecue House in Rockingham, N. C., on April 15th. After a buffet supper, Tom Howard presided over the meeting.

The meeting began with a welcome to members, and a thank you to Louise Thomas, Steve Leonard and Julie Moore for the efficient planning of the field trips to the granite outcroppings, the Gabbro Slopes and the Pee Dee Wildlife Refuge. Louise Thomas received special recognition for her efforts in contacting the local landowners and the wildlife refuge.

Then Tom read the treasurer's report, which had been submitted by Gretchen Cozart. He was happy to announce that the Scholarship Fund has a balance of \$7,554.97. This includes \$2,500 from checking, which had been added to generate more money from interest.

After the treasurer's report, Ken Moore presented the recommendation of the committee studying the feasibility of Timber Press publishing and distributing the N. C. Native Plant Propagation Handbook. The committee felt that the NCWFPS should continue the publication and distribution because many books would have to be sold before the society made a profit.

Following Ken's recommendation, Ray Noggle reported on the progress of the Scholarship Fund. He announced that applications and cover letters had been sent to the colleges and universities in the state, and that one application had already been received.

After completion of Dr. Noggle's report, Tom called on Ken to explain the function of the plant exchange. After which, Dr. Hechenbleikner and Ken described the plants that they had brought to the meeting for the exchange.

Next, Emily Allen, chairman of the nominating committee, read the proposed slate of officers for 1984-86. Her committee nominated the following persons:

President - Ray Noggle
Vice-President - Julie Moore
Recording Secretary - Elvira Howard
Treasurer - Gretchen Cozart
Trustees
Nancy Julian
Mrs. Hal F. Daniels (Grace)
Benson Kirkman

The nominations were unanimously accepted.

The final business item was a request from Elvira Howard. Representing Friends of State Parks, she asked members to write a letter to the Natural Resources and Conservation Department opposing private leasing and development in parks, and in that same letter, emphasize the importance of the Natural Heritage Program.

After completion of the business meeting, Ken introduced Julia and Robert MacKintosh, speakers for the program and owners of Woodlanders Nursery in Aiken, S. C. Their program, a slide presentation, showed the many ways that native plants propagated in a nursery can be used in gardens and landscaping. Following their well-received presentation, Robert answered questions from the audience.

The meeting concluded with Tom thanking the speakers for their informative program, and his introduction of our new president, Ray Noggle. Dr. Noggle cited Tom's work on behalf of the Society, and adjourned the meeting.

Respectfully submitted,



Recording Secretary

MINUTES
FALL 1984

The Board Meeting of the NCWFPS was held at the North Carolina Botanical Gardens at noon on September 16, 1984. President Ray Noggle presided over the business meeting.

Harry Phillips announced that the 1985 Wildflower of the Year is the Butterfly Weed and that he needed donations of seeds from members. He also wishes to hear from members who have participated in past wildflower seed distributions. He would like to know how well the seeds germinated, the health of the plants, and ideas for improving distribution of seeds to members.

Gretchen Cozart, Treasurer, reported balance on hand \$2,613.28 and \$6,536.75 in the Scholarship Fund.

Ray Noggle reported that more copies of NCWFPS's propagation handbook were printed in June at a cost of \$2,800. The books will sell for \$5.00.

Discussion followed on way to improve the handbook. Julie Moore suggested that the propagation information be updated, and Nell Lewis recommended that illustrations be incorporated in future handbooks. A committee will be formed to study these proposals before the next reprint.

One student has inquired about the NCWFPS's scholarship fund. Board members felt that the response reflected the fact that few students are entering the field sciences and that we must do more to educate the public. Dr. Noggle will continue to advertise the fund by sending information to North Carolina colleges and universities.

Ray Noggle announced that the Fall Membership Meeting will be held in the Raleigh-Durham-Chapel Hill area on November 3rd and 4th. We will visit Eno River

State Park, the Duke Gardens, and the North Carolina State Arboretum.

Floyd Rich invited the NCWFPS to have its spring membership meeting in Rockingham County. The board agreed, and dates will be discussed at the November meeting.

Julie Moore suggested that society members write a short description of their favorite place/places to visit in North Carolina to view wildflowers and that these descriptions be compiled and published. The places could be private/public gardens, state parks, botanical gardens, etc., and a future newsletter could be dedicated to this purpose. The board liked the idea and agreed to more discussion on implementation of the proposal.

Ray Noggle closed the meeting by introducing new board members Grace Daniels, Benson Kirkman, and Nancy Julian.

Respectfully submitted,

Elvira Howard

Another perfect Indian-summer day. Some small bushy white asters still survive.

The autumnal tints grow gradually darker and duller, but not less rich to my eye. And now a hillside near the river exhibits the darkest, crispy reds and browns of every hue, all agreeably blended. At the foot, next the meadow, stands a front rank of smoke-like maples bare of leaves, intermixed with yellow birches. Higher up, are red oaks of various shades of dull red, with yellowish, perhaps black oaks intermixed, and walnuts, now brown, and near the hilltop, or rising above the rest, perhaps, a still yellow oak, and here and there amid the rest or in the foreground on the meadow, dull ashy salmon-colored white oaks large and small, all these contrasting with the clear liquid, sempiternal green of pines.

Journal, October 25, 1852
HENRY DAVID THOREAU

N. C. WILDFLOWER SOCIETY
WE WELCOME OUR NEW MEMBERS

Barnes, Mrs. Lea
52 Townsend St.
North Wilkesboro, N. C. 28659

Bourgeois, Mrs. A. J.
Rt. 1, Box 108
Troutman, N. C. 28166

Broderick, Ms. Patricia
P. O. Box 754
Troutman, N. C. 28166

Chartrand, Ms. Elizabeth R.
2006 Bluemont Dr.
Greensboro, N. C. 27408

Cooper, Mrs. Leland R.
525 Pinnacle Dr.
Boone, N. C. 28607

Crye, Ms. Kathy
Ida Cason Callaway Found.
Hort. Dept.
Pine Mountain, Ga. 38122-9800

Diggs, Mr. & Mrs. J. Haywood
P. O. Box 64
Morven, N. C. 28119

Dowdy, Dros B.
201 Shadow Valley
High Point, N. C. 27260

Eggleston, Mrs. John
Rt. 3, Box 761A
Henderson, N. C. 27536

Futrell, Mr. Bob
Rockingham Com. College
Wentworth, N. C. 27375

Goldstein, Ms. Jared
2006 Lake Country Dr.
Asheboro, N.C. 27203

Harris, Mr. Edwin R.
243 Ridgewood Ave.
Charlotte, N. C. 28209

Helms, Mrs. Worth M.
1908 Bentley Place
Charlotte, N. C. 28205

Holzgraf, Ms. Carolyn
Rt. 3, Box 200B
Carthage, N. C. 28327

Kirkman, Mr. & Mrs. C. H.
8500 Foxrun
Potomac, Maryland 20854

Knight, Mrs. E. S.
2761 Toxey Dr.
Raleigh, N.C. 27602

Ludy, Ms. Judith Ann
18 Dogwood Acres Dr.
Chapel Hill, N. C. 27514

Manus, Rosanne S.
5923 Powder Horn Rd.
Charlotte, N. C. 28212

Morgan, Mr. & Mrs. Perry
1417 North Shore Rd.
Norfolk, Va. 23505

Erna Nixon Library of Nat.
Sciences
735 Aracia Ave.
Melbourne Village, Fla. 32901

Parks, Ms. M. Dianne
2838 Avent Ferry Rd. # 203
Raleigh, N.C. 27606

Perry, Ms. Betty
2707 Kittrell Dr.
Raleigh, N.C. 27608

Petrecca, William H.
Box 2137, Mid. City Sta.
Philadelphia, Pa. 19103

Porter, Mr. Norman A.
P. O. Box 157
Banner Elk, N. C. 28604

N. C. WILDFLOWER SOCIETY
WE WELCOME OUR NEW MEMBERS

Price, Mr. J. C.
819 Tollis Parkway
Broadview Heights, Ohio 44147

Rice, Mr. John C.
4416 Woodbury Dr.
Raleigh, N. C. 27612

Rodgers, Mrs. J. B.
P. O. Box 516
Windemere, Fla. 32786

Rodgers, Mrs. John J.
4910 Carmel Park Dr.
Charlotte, N. C. 28226

Schuon, Mr. Larry
12745 Spicer St.
Carleton, Mich. 48117

Smith, Margaret B.
115 W. King St.
Edenton, N. C. 27932

Swanson, Mrs. Martin
105 Charles Towne Pl.
Wadesboro, N. C. 28170

Thomas, Ms. Annie G.
1611 Trently Court
Raleigh, N.C. 27609

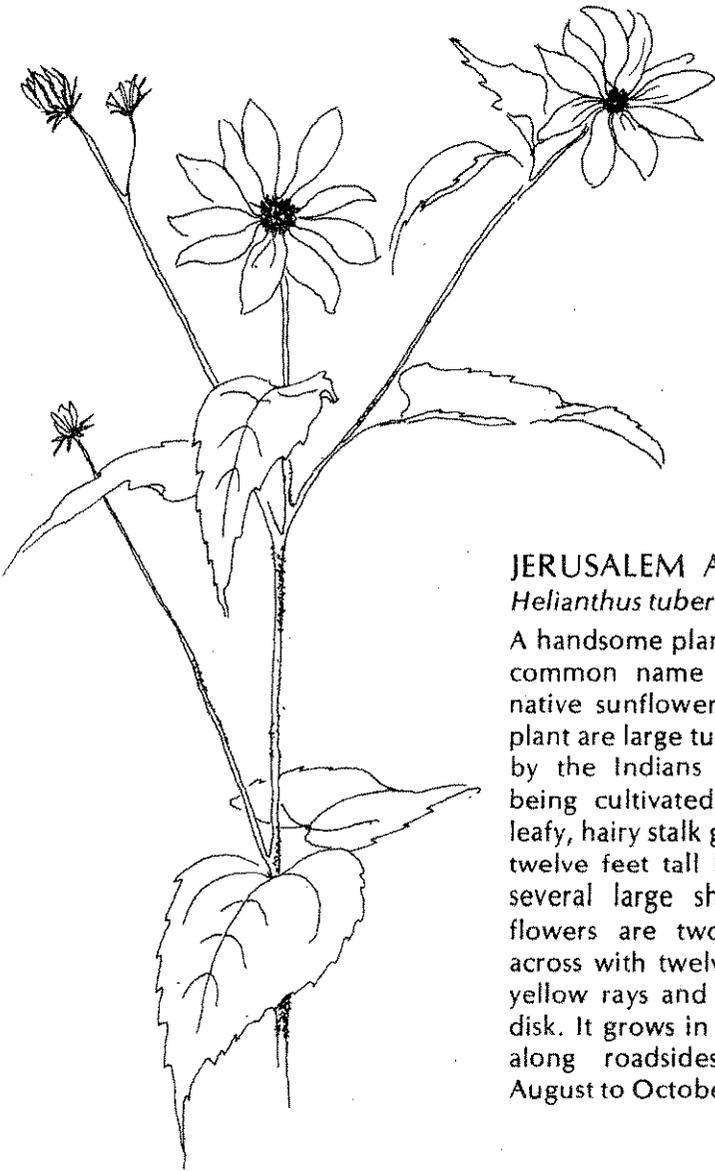
Thomason, Ms. Patricia R.
Route 4, Box 374
Lexington, N. C. 27292

Tucker, Mr. & Mrs. William
1505 Delmont Dr.
Raleigh, N. C. 27606

Wiggins, Mrs. George
1907 Woodlawn Ave.
Wadesboro, N. C. 28170

Wooten, Mrs. Bobby
578 Knobview Place
Winston Salem, N. C. 27104





[Daisy Family]

JERUSALEM ARTICHOKE

Helianthus tuberosus

A handsome plant and in spite of its common name it is an American native sunflower. The roots of the plant are large tubers and were used by the Indians as food. It is still being cultivated today. The stout, leafy, hairy stalk grows from three to twelve feet tall being topped with several large showy flowers. The flowers are two to three inches across with twelve to twenty bright yellow rays and a yellowish center disk. It grows in thickets, fields and along roadsides blooming from August to October.

NOTES

NOTES

**NORTH CAROLINA
WILD FLOWER
PRESERVATION
SOCIETY, INC.**



900 WEST NASH STREET

WILSON, NORTH CAROLINA 27893

NORTH CAROLINA WILD FLOWER PRESERVATION SOCIETY, INC.

Mrs. S.M. Cozart, Treasurer
900 West Nash Street
Wilson, North Carolina 27893

MEMBERSHIP APPLICATION

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Sustaining:	\$25.00		
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NAME _____

ADDRESS _____

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North Carolina Wild Flower Preservation Society, Inc.
Totten Garden Center, 457-A, UNC
North Carolina Botanical Garden
Chapel Hill, North Carolina 27514



Mrs. John F. Boyer
Rt. 3, Box 191
Chapel Hill, NC 27514

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FALL MEETING
November 3 & 4, 1984