

Habranthus Culture in Eastern North Carolina

by Mike Chelednik

The genus *Habranthus* is a group of small bulbous plants eminently suited to garden culture in the South. The graceful somewhat lily-shaped blooms ("habranthus" means delicate flower) come in a range of colors from whites and yellows through shades of orange and pink; there is even a near-blue lavender. Habranthus rarely grow taller than 8-10" and are unobtrusive when not in bloom because of their scant foliage. Perfect for the rock garden, many are vigorous enough for the front of the border.

Habranthus are members of the New World Amaryllidaceae with centers of distribution in temperate areas of southeast South America and northern Mexico. They are similar to the genus Zephyranthes, and indeed many species of habranthus were at one time or another classified as such (and vice versa). The primary difference between the two is that in habranthus the blooms nod forward slightly, though this is not very pronounced in some species. This characteristic of the perianth is describe botanically as oblique or declining. Another difference is in the arrangements of the stamens. In habranthus the six stamens are of four different lengths, while in zephyranthes they are of two lengths.

There are at this writing approximately twenty species of habranthus. Some are probably yet to be discovered or formally named. What follows is a list of species that I have grown long enough to feel that I am capable of describing. I grow many more distinct variants that came

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Growing Epimediums in the Garden

by Darrell Probst

Like many gardeners, I never gave much thought to growing requirements when I planted my first epimedium. Knowing the basic requirements were shade and moist soil; I found an appropriate site with those attributes and stuck it in. When the plant flourished, I considered it a success and moved on. There's a sixth sense that seems to come with my addiction to gardening. It isn't until I have to explain it to others that I realize all the details that are involved. Over the years, through my successes and failures in growing epimediums, I've learned that their growth requirements are a little more complicated than simply shade and moisture.

Epimediums are really easy to grow if you have the right conditions and downright impossible if you don't. They grow in a wide variety of habitats in the wild, from

See Epimediums. Continued on page 4.

Our March Meeting of the Piedmont Chapter of the North American Rock Garden Society

Saturday, March 21, 1998 10:00 a.m., Totten Center North Carolina Botanical Garden, Chapel Hill, N.C.

Darrell Probst

"Epimediums"

(Last names "R" through "Z bring "goodies.")

Habranthus. Continued from page 1.

to me without a name or label and some species, too, that I've acquired so recently that I know little of their requirements.

The Species

H. robustus is probably the most commonly cultivated species in eastern North America and is worthy of its popularity. With scapes to 8-10", it bears blooms of a beautiful shade of pinkish-lavender prolifically from June through early September. Flower color is somewhat variable with this species, and true pink forms exist, as well as a form with blush, near-white blooms that circulates under the name "Florida Strain." For *H. robustus* the specific epitaph is very appropriate for it is vigorous enough to hold its own in a border setting. The bulbs offset very quickly, and it is also one of the most cold hardy; occasional dips to zero hold no problem.

H. martinezii is another species from South America this one with white to pale-pink flowers that have a greenish-yellow throat. It is smaller than *H. robustus*, blooming intermittently from May through August. This delicate species, with its small size (6-8") and scant foliage, is probably more suited to the rock garden; in the border it could easily disappear under the growth of more vigorous plants. In spite of its delicacy, I have found this species easy to grow. It increases steadily by means of offsets and has been cold hardy for me to +8 degrees F in eastern North Carolina.

H. magnoi is somewhat of a mystery as I've never seen it listed in any reference; yet I've been assured by my most knowledgeable contacts that it is indeed a recognized species. Relatively large flowers are borne on scapes 8-10" tall in late spring and again in early fall. They are a creamy white with a deep-green throat. My original bulb has survived and flowered, but has shown no sign of vegetative increase in the three years that I've had it.

Habranthus brachyandrus is the giant of the genus and seems to be everyone's favorite. The large flowers (up to 3.5") are carried on scapes that reach up to sixteen inches in some forms. The blooms are pink-lavender shading to deepest burgundy at the base; the burgundy coloration sometimes extends to the upper two-thirds of the scape making for an extremely striking plant. The blooms never open fully, but this does nothing to detract from the beauty of the plant. H. brachyandrus is fully cold hardy in the eastern two-thirds of North Carolina and requires only a fair amount of sun and a reasonably welldrained soil.

The only problem associated with H. brachyandrus is the difficulty in securing it. While seed and to a lesser extent plants are available with a little searching, the resulting plants are almost invariably not the true brachyandrus but its hybrid with robustus, H. x floryi. This problem occurs because if both plants are grown together, and both are in flower at the same time (which is likely to occur considering the free-flowering habit of robustus), H. robustus will cross with H. brachyandrus (though rarely vice versa). What results is a variable though garden-worthy plant combining the profligacy of robustus with the attractive bloom characteristics of H. brachyandrus. Plants usually have the burgundy throat of H. brachyandrus combined with the shorter stature of H. robustus; but variation does occur. I have a form from Marion Drummond of Baton Rouge that towers to nearly twenty inches and forms bulbs the size of racquetballs. Another form from a breeder in Louisiana has the deepest color saturation of any habranthus I've seen with blooms of a uniform medium purple tinged with magenta; he calls this 'Purple King'. 'Russell Manning' is a readily available selection that is usually listed as a form of robustus; it belongs here. Rather thin petals give the bloom a somewhat spidery, unkempt appearance. It has the bad habit of multiplying at the expense of bloom, but this can be remedied by planting the bulbs more deeply. Once established, it is a prolific bloomer.

Habranthus tubispathus (including H. texanus) is another commonly cultivated species and the only one native to the U.S. (in Texas and southwest Louisiana). It is also native to southeastern South America—a curious distribution pattern that will be discussed later. The blooms are somewhat conical, almost thimble-shaped, and are an attractive bronze-orange on the outside and golden yellow within. It flowers for me from early summer through fall and never fails to attract the attention of garden visitors. This is a vigorous species but one that needs to be planted where the flowers can be admired at close range. It blooms on scapes 6-8 inches tall. There is also a pink form that occurs in the South American population, var. roseus, with dingy pink flowers that open more widely than the species.

Habranthus tubispathus has an odd distribution pattern with separate populations in Texas and in Argentina and Brazil. This is a distribution pattern shared by a number of bulbous plants including Zephyranthes chlorosolen and Herbertia lahue (pronounced "law'way"). In the past botanists chose to separate the two forms, labeling the South American form tubispathus and the Texan form texanus or tubispathus var, texanus. Today botanists are generally of the consensus that the two forms are conspecific. Yet there are minor differences. The foliage of the South American form tends to be lusher and more upright than the Texas form, which has leaves that are somewhat lax and sometimes grow in a spiraling fashion. Also, the blooms of the Texas form are generally larger and open more widely than those of the South American form.

Habranthus gracilifolius (=estensis) is my favorite of the genus and a lovely plant. It has thread-like foliage (hence the specific epithet) and flowers like H. x floryi in miniature: pink-purple with a burgundy base. The blooms nod vertically downward slightly and don't open very widely. This former characteristic detracts from the beauty of most Habranthus spp. but adds grace to this one, I think. Its about 6-7 inches in bloom and comes from South America.

Habranthus concolor is a species that I wish I could grow more successfully, as the blooms are a luminous shade of chartreuse. It is a desert species, which means it requires both excellent drainage and lime. I have had much better success growing it in pots than in the open garden. It stands about eight or nine inches in flower.

Habranthus howardii is another desert species, again with yellow green blooms of strong substance. I have had more success with this one outside in the ground where it has grown for three years. It has not increased but has held its own, blooming fitfully through the summer with relatively large flowers on 10-inch scapes.

Habranthus Culture

Simply stated, most habranthus are easy to grow. Most species are happy as long as they have at least a half day of sun and a reasonably well-drained soil. Although a slightly alkaline medium is sometimes prescribed, I have not found this to be necessary. An exception are the desert species such as H. concolor and H. howardii, which demand both an extremely friable, alkaline soil and a maximum amount of sun. I have found both of these species rather difficult to grow outdoors; I have been more successful with pot culture. Although all the species I have described are hardy in my garden in eastern North Carolina, I generally begin growing all of my newly procured species and variants in pots until I have enough to risk planting outside. Pot culture is fairly simple, and for gardeners in colder areas it may be the only option. A commercial potting soil is sufficient for most species, although it is a good idea to add perlite or grit (fine gravel) to this mixture to ensure good drainage (most mixtures have a tendency to become "compacted" after about six months). Small pots are sufficient, and for clumping species they can be beneficial (for the gardener) in that slightly pot-bound plants will bloom more profusely than those that have been recently planted. Light requirements are high (as they are outdoors), as is the need for moisture during the growing season. I fertilize them using a balanced, time-release fertilizer such as Osmocote at medium rate. In the winter I let my plants "rest" and only water them when they are very dry. Culture for the desert species is similar except that a bit of dolomitic lime should be added to the growing medium and the watering regime should be moderated.

Habranthus are very easy from seed provided that the seed is extremely fresh. The seed has a half-life (the point at which the germination rate reaches 50%) of approximately six months, and any seed older than one year is nearly worthless. Due to the short viability, there are relatively few sources for seeds. Probably the best are the seed exchanges of the various gardening societies. NARGS is very good and I have also had luck with both the Alpine Garden Society (U.K.) and the Scottish Rock Garden Society. The International Bulb Society is also an option. Relatively few nurseries sell habranthus. Yucca-Do in Texas has a few, as well as We-Du, Plant Delights, and Arrowhead Alpines. Woodlanders offers two distinct forms of H. x floryi which they sell as H. tubispathus and H. brachyandrus, respectively.

Sources

Arrowhead Alpines, P.O. Box 857, Fowlerville, MI48836. Catalog price \$2.00.

Plant Delights Nursery, 9241 Sauls Road, Raleigh, NC 27603. Catalog price 10 stamps or a box of chocolates.

We-Du Nurseries, Route 5, Box 724, Marion, NC 28752. Catalog price \$2.00.

Woodlanders, 1128 Colleton Ave., Aiken, S.C. 29801. Catalog price \$2.00.

Yucca Do Nursery, Rt. 3, Box 104, Hempstead, TX 77445. Catalog price \$2.00.

References

Griffith, Mark. 1995. Royal Horticultural Society Manual of Bulbs. Timber Press, Portland, OR.

Ogden, Scott. 1994. Garden Bulbs for the South. Taylor Publishing Company, Dallas, TX.

[Mike Chelednik lives and gardens in Greenville, N.C. His diverse interests in plants and seeds include most bulbous plants, hellebores, and any "new" plant. He germinates about 200 species each year.]

Epimediums. Continued from page l.

the cold alpine areas in central Japan, to the subtropical portions of China and into the northern reaches of Africa. A friend of mine once wrote "how can one proclaim themselves an authority when they've never seen a plant in the wild." He was commenting about a particular author who had never visited an area where the genus that he wrote about was native. Seeing epimediums growing in the wild for myself made me realize that I still have a lot to learn.

Becoming familiar with a plant's native habitat is a good place to start when trying to figure out where it will flourish on your property, or if it will even grow at all in your situation. I'm not one to recommend the creation of an artificial environment just to cultivate a particular group of plants. I was in a lecture just yesterday where I learned that if I wanted to grow most penstemons well, I should choose an area in full sun and create a four inch deep sand bed. While I'm not requiring that all penstemons be deported from Cobblewood, those that require those conditions will certainly be refused entry. Our property is primarily wooded, and the soil is clay and heavy clay at that. I'll happily mix in a little organic matter, maybe even some peat, but a sand pit wasn't here when I arrived and I'm not about to import one, nor am I willing to cut down any more trees.

Most epimediums will grow here, however. The fact that they flourish on our property is part of what encouraged my addiction in the first place. If your site is a sunny sand pit, stop reading now and join the Penstemon Society. For the rest of you, continue on.

Epimediums thrive in the shade. The amount of shade that is required will depend on where you live. Here in central Massachusetts at an elevation of 1,000 feet, most prefer five hours or less of direct sunlight. Any more than that and the leaves may burn around the edges. Even with five hours of direct sunlight, some of the Chinese species can appear somewhat bleached for a few weeks in early June before the leaves mature. They grow best in bright shade here, but will barely increase in the deep shade of a hemlock grove; if they survive at all. Full shade is necessary in parts of the country with long, dry summers or in places like Denver, Colorado, where light intensity is greater due to the high elevation. Epimediums flower most prolifically and propagate the quickest when given the highest amount of direct sunlight or bright light that they can withstand without burning in the heat of August.

Soil is also critical, but perhaps more difficult to discuss in general terms or all species. As we learn more about the new species coming into cultivation, it may be important to group them by the type of soil they prefer. Our soil is evenly moist and acidic, with a pH below 6.0. white pine (*Pinus strobus*) and mountain laurel (*Kalmia latifolia*) are native to the area. I haven't noticed any apparent problems with any of the species in relation to our pH level. However, this may explain why E. davidii, which is said to require alkaline soils, is not flourishing. On the other hand, *E. grandiflorum* is often not recommended for alkaline soils. I have several collections of it from Japan that were growing on limestone so obviously this is not true for all forms of *E. grandiflorum*. Unless your soil is extremely acid or alkaline, you shouldn't have a problem growing a majority of the species.

Moisture retention or the inability to retain moisture in the soil could pose a larger problem. Most epimediums grow best in moist soil. Although they are drought tolerant once they are established, many will suffer greatly during long dry periods. If your soil dries out excessively for more than a month in summer and you aren't willing to irrigate, you should consider growing the more drought tolerant species: *E. pubigerum*, *E. alpinum*, *E. pinnatum* ssp. colchicum or their hybrids; *E. x cantabrigiense*, *E. x perralchicum*, *E. x rubrum*, *E. x versicolor* or *E. x warleyense*. Even these drought tolerant plants require moisture during the first year until they are well established.

Waterlogged soils are equally as deadly as they cause epimediums to rot. The plants are especially sensitive during the dormant season. I learned about both of these intolerances the hard way, by losing precious plants. I planted my first collection of epimediums under pines that I had left standing in my newly cleared nursery. It was the only place in the nursery with shade. The soil beneath pines can become extremely dry during the summer. I didn't pay close attention to watering the first year, and I lost a few plants to drought. The recently cleared woodland was primarily heavy subsoil mixed with a thin layer of top soil. I lost plants over the winter; not because of a lack of cold tolerance, but due to the extremely soggy subsoil.

As my addiction to epimediums grew, I began building raised beds that are 6 feet wide with 6-inch sides. They are humped in the middle so that the plants grow on a slope, thus providing good drainage. I mix in a few inches of peat moss at planting time that helps to loosen the soil and retain moisture during the summer. After planting, I mulch the beds with 2 inches of finely chipped wood chips. This helps to retard weeds, retain moisture, moderate rapid freezing and thawing, and to gradually add organic matter as the chips decompose. It is important to use wood chips that have been aged at least one year as fresh chips rob the soil of nitrogen as they decompose. Nitrogen fertilizer can be added to compensate when using fresh chips, but this is risky with epimediums; they are very sensitive to nitrogen. I also learned about this the hard way.

Building a strong root system is crucial for establishing new plants. Epimediums with a weak root system bloom poorly or do not bloom at all. While it is possible to divide and reset plants in the spring, I have found this to be very risky. Division in autumn is preferable. To understand why, try thinking like an epimedium. Spring has sprung and you're all excited to push out new growth and bloom as soon as possible. Suddenly, you're ripped from the ground, your delicate root hairs are left behind and most of your roots are dismembered. Then you are split into several sections and rammed back into the ground. You are then expected to thrive with a long, hot, dry summer ahead of you. After severe depression and thoughts of suicide, you may come to grips with your situation and pull through.

While I do perform all of my dividing in the spring and early summer, I grow the divisions in pots and pamper them until fall. I grow them in the shade, out of any direct sunlight. I use a loose, well-drained potting mix and keep the moisture constant and even. A strong root system develops under these conditions. The plants are just beginning to become pot bound by early September when I plant them out in the garden. Once planted, the roots take off and grow rapidly during the cool autumn season. I mulch the young plants with six inches of straw to prevent heaving during the first winter. A high percentage of these plants bloom the following spring.

Given proper care and this special attention during their first season, Epimediums can be long-lived, low maintenance perennials. Most will only require an early spring clean up and an application of additional mulch every few years. Provided with these essentials, they will add elegance to your garden for years to come.

"Past, Present, Future: An Overview of Exciting Plants and Garden Design for Today's Gardener"

Fearrington Gardens Lecture Series to Benefit the JC Raulston Arboretum, Sat., March 21, 1998, at Fearrington Village, 8 miles south of Chapel Hill, on U.S. 15-501.

Speakers are Chip Calloway, Dan Hinkley, Bobby Ward, and Linda Watson. For information call the Arboretum at (919)515-3132.

Upcoming Events

Spring Picnic at the Pattersons Noon on Sat., April 18, 1998 2007 Boone Trail, Sanford, N.C. Sally & O.F. Patterson, telephone 919-775-2195

<u>Directions:</u> From Chapel, take 15-501 through Pittsboro to Sanford. Take U.S. I southbound. Go about one mike to the highway 421 exit. Go north on 421 (toward Greensboro) for 2 miles. You will come to a crossover. Unifi Mills is on the right, and the Pattersons driveway is on the left. Park on the road.

Open House at the Posts

10:00 a.m to 3:00 p.m. on Sat., April 25, 1998 Eastgate Farms on 1670 Will Suitt Road, at Butner, N.C. Helen & Norris Post, telephone 919-575-6061

Directions: (from North & East—Raleigh). Go north on state road # 50 (the Creedmore Road). After crossing Falls of Neuse Reservoir, go pass a BP gas station on the right. Continue on for 1.4 mile from the BP station. Turn left on Old Weaver #2800 and go 1.3 miles. Then turn right on Cash Road #1728 and go 2.2 miles (crossing Northside) and coming to U.S. #15. Go straight on Gate #2 Road #1103 1.2 miles. Turn left on Will Suitt Road #1102 and go 0.8 miles. Turn left into Eastgate Farms at 1670 Will Suitt Road. A white mailbox and a pink farmhouse up on the hill.

From Durham: Go north on I-85 from Durham. Cross Falls of Neuse Reservoir and immediate exit at 186A. Take a right at stopsign which is US#15 Creedmore and go 0.5 miles. Take a left on Will Suitt Road #1102, and go 1.8 miles and turn right at 1670 Will Suit Road. A white mailbox and a pink farmhouse up on the hill.

Seedling Sale

John Barnes reminds us all to sow extra seed this spring for the fall seedling sale to be held in September and to sow additional seed for our chapter to sale at the Winter Study Weekend on January 29-31, 1999. Call John for further information at 919-851-5230.

[[]Darrell Probst gardens in Hubbardston, MA. This article on epimediums is one of several articles to be published in the Spring 1998 issue of the Epimedium Newsletter, which Darrell edits. Used by permission. Copies of the newsletter (two per year) are available for \$15/year from D. R. Probst, 63 Williamsville Road, Hubbardston, MA 01452-1315.]

Arum italicum

by Andy Upshaw

The genus Arum is a member of the Araceae (arum family), which includes some 110 genera and 2,500 species distributed worldwide. Many of these plants are useful food staples and are of economic importance. Most arums are recognized by a spathe and spadix-type flower and are occasionally accompanied by an odor. To my nose, A. *italicum* subsp. *italicum* has a faint smell — a donkey dung odor emitted to attract gnats and midges that pollinate the flower.

Arums are native to the British Isles, southern Europe, and across the Mediterranean Sea to Turkey. They consist of about 25 species of tuberous perennial herbs, all with arrow-shaped leaves. Several of these species are hardy in cool, temperate climates and are well-suited for American gardens.

Some Araceae members, such as symplocarpus (skunk cabbage), can actually raise their temperatures as much as 60° to enable them to melt through frozen ground or water and maintain a tender flower in freezing conditions. Perhaps it is the kinship that enables *A. italicum* subsp. *italicum* to grow in winter when few other plants do. In fact, arums get their name from the Arabic "ar," which means fire.

A. italicum subsp. italicum boasts bright green clusters of arrow-shaped leaves that are variegated and bordered with a green margin. The foliage unfurls and rises on strong, 12- to 18 inch stalks, and can liven up the muted colors of the fall garden. Established plants can have leaves that exceed 24 inches long and 18 inches wide It is reliable, providing heirloom longevity and multiseasonal interest in areas as cold as Zone 5. In North Carolina's Piedmont Zone 7 region, arums have attributes for each season. It is useful *en masse* in perennial beds and borders, as well as beneath foundation shrubbery. Its tolerance of low light makes it suitable for northern *exposures*, *in courtyards*, on shady corners and near steps. A mass planting will also create an island of tropic-like vegetation in winter woodlands.

Here in North Carolina, arums boast beautiful multiseason interest. Most arums have a growing season that is opposite that of other plants; that is, arums begin growing in early fall through winter, a time when other plants are becoming dormant, and bloom in spring. A. *italicum* subsp. *italicum* is especially desirable because it provides winter interest. In winter, the foliage forms handsome clumps, with a growth habit similar to that of hosta. It is upright and green all winter long providing an almost tropical effect — a heartwarming sight on a cold, gray day. After severe winter storms, the foliage of exposed plants may suffer damage from sun scald or desiccation, but new leaves replace these as the weather improves.

In early spring, a green spike appears among the leaves. This sleeve unfurls into a white to greenish white spathe and creates a tall hood around a bright yellow spadix. This hood is said to collect and reflect heat and help spread the flower's odor. Deep inside the flower's tubular stem, below the stigma and style, is a translucent band that allows light inside. This light deceives unwary insects into believing that this area leads to a way out. The insects are lead to a dead end, and they keep moving around in a lower part of the flower thus ensuring pollination.

As warmer weather arrives, the leaves begin to lose their vigor and disappear. But the bloom stalk continues to grow. When summer rolls in, stalks of bright green berries slowly ripen into red-orange "candles." These fleshy seed heads stand on 12- to 18-inch stalks and are a long lasting attraction to the summer garden. Seed may be collected as stalks wither and may be cleaned for fresh sowing. During the heat of late summer, *A. italicum* subsp. *italicum* becomes dormant and disappears for about six to eight weeks. New growth begins in September, although during cool summers the foliage may appear in July while the seed heads are still standing.

With their multi-seasonal attributes, arums make an excellent choice for a bed or border with a mixed planting of shade loving perennials such as ferns, hostas, selaginellas. cyclamens. and hellebores. Arums will grow beneath black walnut trees, where many plants fail. Arum leaves also make a good background for daffodils and flowering bulbs both in the garden and in a vase. The florist industry values the large leaves and striking stalks with their abundance of red-orange berries.

Arums are also welcome additions to our deer-plagued gardens. Calcium oxalate occurs in the plants as microscopic, dagger-shaped crystals, or raphides; they are bitter and stinging to the taste. These particles are stored under pressure in specialized cells and are ejected into soft tissue when chewed or abraded.

Arum Cultivation

Propagation of A. *italicum* subsp. *italicum* is accomplished by seed or division. Arums take from three years to five years to grow from seed into mature flowering

plants and are permanent lifetime additions to the garden once established. Fresh seed germinates readily the first fall season. To grow arums from seed, remove the red fleshy pulp, or pericarp, before planting. This material contains germination inhibitors. If it is dried out, you can remove it by soaking it in tepid water overnight. Arums are caustic, so wear rubber or plastic gloves, especially if you have sensitive skin. Dried seed may take one or more years to germinate. Cold stratification of stored seed improves germination rates. Seedlings transplant easily. Tubers begin forming the first year, sometimes without top growth, so deep pots are recommended if growing in containers.

Propagation by division is best accomplished in late summer during dormancy or in early fall as growth begins. Established tubers form pea-sized bulbs, which may be planted. These can reach flowering size in two or three years and grow into large or mature tubers in about 10 years. Plants form an extensive white, fleshy root system that disappears during dormancy. The reddishbrown tubers orient themselves horizontally underground and are shaped like a thumb or rabbit's foot. Sprouting bulbs resemble brown spiders with white legs.

Plants may be easily dug and transplanted during their summer dormancy. The root is contractile, pulling the tuber down to its proper depth underground. In Zone 7, a planting depth of 2 to 4 inches is recommend but deeper planting or a heavy mulch may be beneficial in colder climates or in lighter soils. If you dig plants during active growth, you should dig deep enough to collect the entire tuber and a good portion of the root system.

A. *italicum* subsp. *italicum* grows in a variety of conditions: it thrives in shade or part shade, and in rich soil containing humus or leaf mold with good drainage and adequate moisture. It is also recommended for dry areas as well as for dark, damp sites. While leaves are present, it can tolerate an abundance of water and wet soils, but it is important to avoid over-watering during summer dormancy to prevent rot of the tubers. It is a low-maintenance plant. Dead leaves require no cleanup; they quickly disappear. One should remove fallen seed stalks from around plants in late summer to avoid seeding in and to prevent crowding the plants. Fertilizers are not necessary in good garden soils, but an organic mulch may be applied in fall.

Despite its many benefits, A. *italicum* subsp. *italicum* can fall victim to slugs and snails, which sometimes interfere with seed production. Gardeners should watch for them hiding in the hooded flower during wet springs. A light pine straw mulch or sharp sand seems to deter these pests.

If grown in containers for production, reduce watering during dormancy and promote air circulation to avoid conditions favorable to fungus and rot. Slow-release fertilizers may be incorporated into the soil mix. Low rates of organic fertilizers or diluted strengths of chemical fertilizers are recommended to prevent chemical burning. To avoid growing stress during cold weather, fertilize in early fall. I use a soil mix based on composted pine bark with added peat moss, perlite, sand, organic humus, slowrelease fertilizer, micronutrients and limestone.

Taxonomy of Arums

Identification and nomenclature of arums has been difficult, with common names often adding to the confusion. In *The Genus Arum*, Peter Boyce identifies four *Arum italicum* subspecies: *neglectum, canariense, albispathum* and *italicum*. The plant commonly referred to as *Arum italicum* 'Pictum' is correctly identified as *A.italicum* subsp. *italicum*.

There's much variation in leaf shape and variegation within each arum. There are also some hybrids available from specialty nurseries. A large lot of seedlings often produces a few variants. A italicum subsp. italicum 'Bill Hunt' is a chance seedling with silver gray variegation overlaid with whitewash, as if milk were poured over the leaf. This plant was selected in memory of the late William Lanier Hunt of Chapel Hill; he introduced me to arums in 1976. I found 'Grandma', which has rich, darkgreen leaves and only slight accents in the venation. It has a formal grace that enriches the garden. 'Legs' is another of my nursery (Pleasant Gardens Nursery) selection that stands on tall stems with leaves held parallel to the ground. The foliage is pointed, wide, and long with bright, creamy variegation. Other selections are available from England.

The year-round display of A. *italicum* subsp. *italicum* is a welcome accent to the American garden. These low-maintenance, easy-to grow plants not only protect perennial flower beds from garden predators, but also are a source of beauty.

[[]Piedmont Chapter of NARGS member Andy Upshaw is the owner of Pleasant Gardens Nursery in Pittsboro, NC. This article has been adapted from one that appeared in American Nurserymen (January 15, 1988 issue). Used by permission of the author. Prior to establishing his nursery, Andy worked for 20 years as a landscape contractor.]

"We started with empty pockets"

History Published of Piedmont Chapter of NARGS

By Sandra F. Ladendorf

We have a wonderful chapter here in the Triangle of North Carolina, full of active and interested gardeners of all ages, from experienced seniors to youthful novices. I am particularly pleased at the healthy percentage of young people who are involved, because they are the future. The interplay of experience and exchange of information is just what Edith Boyer, Nancy Goodwin and I dreamed of when we started this group in the fall of 1985.

In the early 1980s, we three discovered one another. We were all members of the national American Rock Garden Society with no local base of action. We each kept meeting interesting and keen gardeners, one by one. Wouldn't it be fine, we thought, to have an organization that would bring all of these special gardeners together in our area—all focussed on rock gardening.

During the same period of time, Norman Singer, former membership secretary of ARGS and now pastpresident, continued to gently nag and charmingly persuade me to start a chapter here. The combined influences of Norman's persuasion and our interest in exploring all of the potential for southern rock gardening finally got us moving.

By the way, there is nothing new about southern rock gardening. When Nancy and Craufurd Goodwin purchased Montrose in 1977, beneath brambles and brush on the estate, Nancy discovered a 130-year-old rock garden which she has cherished, improved and enriched.

Local Carolina garden writers Elizabeth Lawrence and William Lanier Hunt were founding members of ARGS in 1934. Bill told me about many wonderful southern rock gardens in the early part of this century. When I asked what happened, he said, "war and azaleas." While azaleas still dominate southern spring gardens, today many gardeners are experimenting with rock gardening and developing new and interesting gardens. ARGS has two lively chapters in North Carolina, and I am aware of public rock gardens in Georgia, Tennessee, Virginia and North Carolina. Perhaps there are others.

To begin our chapter, we sent a simple letter to many of the keen gardeners we had met, inviting them to come together and form our new chapter. Sparks of enthusiasm lit up that first meeting of 25 people. We were off and running and have just been getting bigger and better ever since. Our membership in March, 1995 is 199.

Good programs are important. The chapter has offered a number of exciting ones, many donated by our own talented members plus a number of national members and superb speakers like Lee Raden, Nick Nickou, Howard Pfeifer, Barry Yinger, and Panayoti Kelaidis.

Thanks to an energetic and dedicated committee, we ran our first national meeting in 1990. The Eastern Winter Study weekend brought approximately 300 passionate rock gardeners to our area for a weekend packed with information. We are still getting compliments about that meeting. We have learned that we can do anything!

Our Piedmont chapter started with empty pockets in 1985, and now we are financially sound. The treasury is enriched at every meeting by a rare plant auction run by our multi-talented Tony Avent. Tony is a fine plantsman and nurseryman, but recently we discovered his unique and hilarious skills as an auctioneer. The auction is a lot of fun, but it also accomplishes the worthy goal of distributing quality plants more widely. After all, the best way to make a rare plant not rare is to propagate and distribute it near and far.

By 1990 we took on the responsibility of supporting the expenses of our chapter chairman at the annual ARGS meeting. It is a small but significant way of saying thank you for the many hours of service that go into the job.

Ours is an active chapter nationally and has been from the beginning. We are pleased to have founding member Bill Hunt in our chapter, sharing historic *Sternbergia lutea* bulbs, experience, and expertise with us.

Several of our members have served on the national board. I was on the board for two years, served as vicepresident for four years, and then president for two years. In 1989, my book, *Successful Southern Gardening*, offered a chapter on southern rock gardening, and in 1990, Nancy (with assistance from Paul Jones) edited a charming manuscript by Elizabeth Lawrence entitled *A Rock Garden in the South*. North Carolina State University professor J.C. Raulston, who has supported the chapter with generous amounts of rare plants, information and programs, is not just a Piedmont or North Carolina treasure. He is a national treasure, and we benefit continually from his appreciation of the ARGS and its gardeners.

To remain worthwhile, vital and exciting, I believe that our chapter has three main objectives:

1. That we continue to plan strong, interesting

programs that no member can resist. It sounds simple, but program planning becomes more of a challenge as our group matures. We always need to provide information for the sophisticated, while never forgetting the beginners in the chapter. Irresistible programs will help to entice new members, the life blood of any organization.

2. That we support and strengthen all of our sales. These are important for two reasons. The income supports the chapter. That is important, but I feel it is equally important that the sales offer choice, unusual, and sometimes rare plants to the community. Through our seedling sales, we are encouraging one another to try a host of unfamiliar plants at bargain prices. Some of these plants, we will discover, will not thrive here in the Piedmont, but others will become choice plants for our southern rock gardens. The latter we will continue to propagate and share with other gardeners.

3. That we remain open to new ideas, to different ways of handling chapter affairs. I would urge all chapter boards to be open to all ideas and to encourage participation by each member.

And to each member, my motto is "Just say Yes!" Whatever the job, large or small, just say "yes" whenever you are asked to do something. Every organization, no matter how large or small, seems to have a nucleus group that does all the work. I understand. It is just like parenting; often it seems easier to do it yourself than to recruit someone else. But I think it will be healthier for our chapter—just as it is for the child—if we do not allow that pattern to develop.

As I said at the beginning, we have a wonderful chapter going here.

1998-99 Speakers Announced for Piedmont Chapter of NARGS

September 19, 1998 Richie Bell Chapel Hill, N.C. "North Carolina's Native Perennials"

Sun., October 4, 1998 2:00 p.m. Room 3712 Bostian Hall, NCSU Campus Harry Jans Loenen, Netherlands "My Rock Garden, Alpine Houses and Cold Frames Throughout the Year" Co-Sponsored with NARGS International Speakers Tour & JC Raulston Arboretum Note Special Day, Time, and Location

October 24, 1998 Scott Ogden Canyon Lake, Texas "Irids & Amaryllids for the Southern Rock Garden" Note this is the fourth Saturday--not the third.

> November 21, 1998 Linda Watson & Roy Dicks Raleigh, N.C. "Cyber-gardening: Horticultural Resources on the Internet"

January 16, 1999 Tony Avent Raleigh, N.C. "Wild and Wonderful - A Teaser of New and Wonderful Perennials for Your Garden"

> February 20, 1999 Jerry Flintoff Seattle, Wash. Title to be Announced

> March 20, 1999 Gwen Kelaidis Denver, Col. Title to be Announced

All Piedmont Chapter Programs held at 10:00 a.m. on a Saturday in the Totten Center, North Carolina Botanical Garden, Chapel Hill, N.C., except as noted.

Speakers arranged by Mike Chelednik, the 1998-99 Program Chair for Piedmont Chapter of NARGS.

[[]This article was written by Sandra Landendorf in 1995 for inclusion in the recently published A History of the American Rock Garden Society, 1934-1995, which was edited by NARGS Archivist Marnie Flook. Electronic version for use in The Trillium courtesy of Marnie Flook. Copyright 1997 by The North American Rock Garden Society. Used by permission. Sandra, one of the founders of the Piedmont Chapter of NARGS and the former national NARGS president, currently lives in Salinas, California. Copies of the 206-page publication were sent to all national NARGS members in January 1998.]

"A Shot of Adrenaline..."

Toronto "Underground" Diary: NARGS WSW '98

by Steve Whitesell

The NARGS Eastern Winter Study Weekend in Toronto on January 30-31 & February 1, 1998, concentrated on bulbous plants. The weekend consisted of talks by speakers of international reputation with wonderful slides of plants from both gardens and native habitats. A highlight was the featuring of two amazing Canadian gardens. While the theme of the conference was bulbs, there was enough variety of habitat and accompanying slides of allied companion woody and herbaceous plants to interest and inform any garden enthusiast.

Erich Pasche, director of plant collections at Wuppertal Botanical Garden in Germany, spoke on the plant communities of the Pontic Alps, a seemingly verdant region straddling northeast Turkey and the former Soviet republics. The forested lower elevations and meadows harbored many familiar garden plants like Brunnera macrophylla, Stachys grandiflora, and Salvia nemorosa, as well as several localized species of familiar genera like corydalis, paeonia, fritillaria, crocus, colchicum, and several rhododendron and lilium species. Climbing to the higher elevations above the tree line, the alpine meadows were carpeted with various campanula, androsace, hypericum, and dianthus species, as well as innumerable others, all beautifully photographed by Mr. Pasche, who has brought many into cultivation in Wuppertal and offered detailed cultural advice. The climate is closely equivalent enough to the northeast U.S. to encourage experimentation with more plants native to this region in our gardens. Mr. Pasche also spoke eloquently on bulbs in garden cultivation, showing slides of over 130 of the best and least familiar bulbous plants he's grown over his long career, with special emphasis on Turkish iris species, crocus, narcissus species, and fritillaria. Again, his slides photographed in the wild concentrated on the rich bulbous flora of Turkey.

Wayne Roderick, one of the foremost authorities on native California plants spoke on plants and bulbs of California, from the erythronium of the moist Sierras to the calochortus and allium species of the summer-dry regions. including species he's discovered and brought into cultivation at Berkeley Botanical Garden.

Anna Leggatt, an active member of the Ontario chapter spoke on hardy terrestrial orchids, notoriously difficult and beautiful plants she's succeeded well with, suited to a variety of habitats from dry upland to bog, concluding with a succession of cypripedium species, each more spectacularly beautiful than the last. New tissue culture propagation techniques are promising as a means of propagating these temperamental plants and increasing the nursery availability of plants.

John Amand, a British commercial grower, showed slides of bulbs currently available, including over a dozen arisaema species available from his own company.

Brian Mathew, formerly a botanist at Kew Gardens and the author of several books on bulbs and other horticultural topics, gave a general overview of bulbous plants from the new and old world and then concentrated on the bulbs of central Asia, the source of so many of our best garden plants. Mr. Mathew is a natural teacher, witty, informative, and well travelled. There was special concentration on corydalis species and juno iris, as well as other familiar and unfamiliar plants from primarily summer-dry regions.

Frank Cabot and Sharon and Rob Illingworth showed slides of their large gardens in Quebec and Ontario. The Illingworth's garden near Thunder Bay, is in the southwest corner of Lake Superior, about 7 miles from the northwest border of Minnesota. The growing season is short, summers cool, and winters long and bitter. Deep snow provides a protective cover, though, and they've managed to transform natural granite outcrops into an acre of world-class rock garden, pushing many plants well beyond their expected hardiness range by sheltering them for most of the winter under a reliable blanket of snow. The rock garden is only 8 years old, but incorporates hundreds of species, many quite difficult and rare, often grown from seed. The garden is beautifully situated and plant masses are displayed to optimal advantage against the rock outcrops. Both gardeners display a rare combination of plantsmanship and aesthetic judgment, and the speed with which they've managed to develop their garden makes me anxious to find out where it'll be in another 8 years.

Frank Cabot, whose Putnam County, N.Y., garden, Stonecrop, is familiar to many rock gardeners, gave a slide talk on the development of Quatre Vents, his less familiar, but even more ambitious garden in La Malbaie, Quebec. It's a garden of such stellar scope and accomplishment that he was given a standing ovation at the end of his talk, Situated in farmland near the St. Lawrence River in eastern Quebec, the garden features beautifully constructed and planted stone walls, steps, and terraces, dripping with a variety of rock garden plants, a ravine planted with Asiatic woodland plants, crossed by two rope bridges, a formal garden enclosed by hedges and pleached lindens, with a series of reflective canals terminated by a tower-dovecote loosely modeled on the Pin Mill at Bodnant in Wales. A Japanese carpenter labored for 4 years to build a series of traditional buildings hewn from Port Orford cedars cut and seasoned in Oregon, then shipped to Quebec for milling and construction. The building complex is surrounded by an inventively untraditional and completely appropriate planting of Japanese native plants. There were large herbaceous borders of great horticultural interest and accomplishment, and sudden framed views to the larger pastoral landscape beyond the enclosed garden. He ended the talk by inviting people interested in visiting the private garden to write him to arrange a visit.

The study weekends are always a shot of adrenaline in the depths of winter, a premonition of the season to come, and an inspiration to try to grow more. This was one of the best organized and most pleasurable I've attended, and the Ontario chapter should be congratulated on their accomplishment.

[Steve Whitesell lives and gardens in Kew Garden Hills, New York. He is chairperson of the Manhattan Chapter of NARGS.]

Montrose Gardens Announces New Hours

Montrose is a nationally known complex of gardens in Hillsborough, N.C., owned by Piedmont Chapter of NARGS members Nancy and Craufurd Goodwin. The gardens were begun in the mid-nineteenth century by North Carolina governor William Alexander Graham and his wife Susan. Several nineteenth century buildings remain on the property. The gardens include a rock and scree gardens, numerous sunny gardens with varied color schemes, and extensive woodland gardens.

Accompanied tours are available throughout the year by appointment on Tuesdays and Thursdays at 10:00 a.m. and Saturdays at 2:00 p.m. Tours for large groups may be arranged at other times by calling in advance. A small selection of plants may be purchased at the end of the tours. Unaccompanied visits to the gardens are not allowed. Fees for garden tours are \$6/person on Tuesdays, Thursdays, and Saturdays. The group charges are a minimum of \$60 or \$6/person for 10 or more people.

Montrose Gardens also offers seminars on garden design and plant propagation about four times per year. For information on these seminars, garden tours, and reservations, write Montrose Gardens, P.O. Box 957, Hillsborough, N.C. 27278. Or, call (919) 732-7787 between 9:00 a.m. and 5:00 p.m.

Piedmont Chapter of NARGS 1997-1998

Chairman: Barbara Scott, 1321 Chaney Road, Raleigh, NC 27606; telephone (919) 859-6703. e-mail barbara_scott@ncsu.edu

Vice-Chairman/Program Chairman: John Dilley, 9400 Sauls Road, Raleigh, N.C. (919) 772-6761.

Treasurer: Bob Wilder, 1213 Dixie Trail, Raleigh, NC 27607; telephone (919)781-2255. e-mail wilder@pagesZ.net

Secretary: Wendy Wallace, 8124 Coleraine Court., Raleigh, NC 27615. (919) 846-3512. e-mail wpeter1479@aol.com

Board Member-at-Large: Rob Gardner, 5423 Bobcat Road, Chapel Hill, NC 27516; (919) 929-7252; e-mail gardner3@email.unc.edu

Board Member-at-Large: Ray Stilwell, Jr., 11900 Coachman's Way, Raleigh, NC 27614-9736; e-mail grsjr@juno.com

The Trillium Newsletter Editor: Bobby J. Ward, 930 Wimbleton Drive, Raleigh, NC 27609-4356; telephone (919) 781-3291. e-mail biblio@pagesZ.net

Piedmont Chapter of NARGS Positions of Responsibility

NARGS Seed Exchange Phase III Chair: Marian Stephenson, 305 Clayton Road, Chapel Hill, NC 27514; (919) 942-5820

Refreshments & Hospitality: Gwen and Maurice Farrier, 4205 Arbutus Dr., Raleigh, NC 27612; (919) 787-1933.

Fall Seedling Sale Co-Chairs John Barnes, 1601 Medfield Rd., Raleigh, N.C. 27607. (919) 851-5230; and Laddie Munger. 1001 Washington St., Cary, NC 27511, (919) 481-1127.

NARGS Eastern Winter Study Weekend Chair 1999: Bobby J. Ward, 930 Wimbleton Drive, Raleigh, NC 27609-4356; (919) 781-3291; e mail biblio@pagesZ.net

Piedmont Chapter Membership Directory

A directory of Piedmont Chapter of NARGS members will be available at the March 21 meeting and at our Spring Picnic on April 18. If you cannot attend either of these Chapter events, contact Bob Wilder at (919)781-2255 or wilder@pagesz.net to obtain a copy.

Better not plant in the rock garden ...

The Seemingly Meek that Inherit the Earth

by Marnie Flook

Louise Beebe Wilder's book, Adventures in My Garden and Rock Garden, has a chapter on plants that, if allowed into the rock garden, would crowd out the good ones. Some of these are called weeds, others are considered "garden plants." She warns us to avoid any plant recommended for its creeping and trailing habit; to be suspicious of any plant called creeping Charlie or motherof-thousands. Many are real charmers, or at least you will think so until the time comes to keep them from strangling a favored lewisia.

Plants become invasive in a number of ways: their extensive top growth spreads over the surface and smothers neighboring plants; new roots form as layers beneath the top growth; they spread by underground suckers; or they produce thousands of seedlings.

There are places where such plants can be useful, where others won't grow or where they can be kept under control. Ajuga reptans spreads rapidly, making a good mat under trees. It does not belong is a small rock garden. A. genevensis, which stays in one place, is better suited, and its flowers are prettier, too. The variegated deadnettles (Lamium maculatum, Lamiastrum galeobdolon) are coarse, trailing plants that perhaps have a place in a naturalized woodland where they can romp, not in the rock garden. If you insist on growing them and would like a different use, put them with annuals in containers, where their vining will not endanger other species.

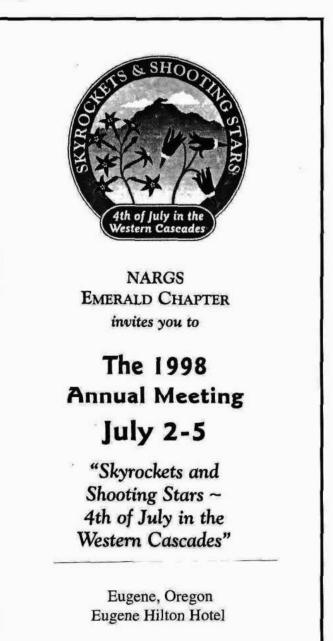
Stringy stonecrop (*Sedum sarmentosum*) may be used where nothing else will grown, but keep it out of the rock garden. Almost as invasive in goldmoss sedum (*S. acre*). Both of these will take root wherever a piece of leaf falls.

Violets, which are so welcome in early spring, may become weeds. Plant Johnny jump-ups (Viola tricolor) in a little-used part of a crushed-stone driveway, not in the rock garden. Even two diminutive violets esteemed for their foliage. Viola labradorica and V. variegata, can become a brother, the first a substantial one, the second a lesser. Grow them in a flagstone terrace or in crevices between steps as a change of pace from thyme. In addition to being contained, they will be more attractively displayed.

Some ferns have spreading roots and do not belong in the garden — hayscented, lady, and sensitive ferns and bracken. Use them as ground covers in underbrush.Even some of the good old standby rock garden plants such as arabis, basket-of-gold, iberis, and cerastium may become too sizable for a small garden so should be situated with care. Planted in or on top of a wall, they will perform with less abandon.

Beware the octopi.

[This article originally appeared in Handbook on Rock Gardening in 1980 by the Brooklyn Botanic Garden Record (Vol. 36, No. 2). Marnie Flook was the guest editor. Used by permission of the author and editor. The publication is out of print. Marnie gardens in Chestertown, MD.]



For further information, contact Jane Nelson, registrar at (541) 683-4863 (evenings & weekends).

"Thank you for this joy. . ."

Kudos to Three NARGS Chapters for a Successful Seed Exchange 1997-98

by Bobby J. Ward

The 1997-98 NARGS Seed Exchange has been completed and the final orders for seed were mailed out on February 18, 1998; the surplus seed were equally divided and mailed out to each NARGS chapter the same day. A total of 2,028 orders were processed this year. It was a huge volunteer effort coordinated by Carole Wilder, Director of the NARGS Seed Ex, and by the three NARGS chapters that handled the receipt of seed: (Jane McGary and the Columbia-Willamette Chapter); seed packaging (Andrew Pierce of the Rocky Mountain Chapter); and order fulfillment (Marian Stephenson and the Piedmont Chapter).

The following are selected excerpts from cards and letters that the Piedmont Chapter received that I share with all the volunteers from the three chapters that made this year's SeedEx so successful.

"Dear Garden Friends, I have just got the seed packets from you. Suddenly there was sun in my room, though it is cold dark outside, 7 degrees Celsius, and no snow, which is usual at this time of the year. We hear with shudder about strange climates everywhere—storms in the U.S., ice in Canada, spring in the Alps, and floods in Poland. Then comes a package [from NARGS] with 25 envelopes with seed not one that I hadn't hoped for. Thank you all who have had the trouble to give me this joy, this happiness."

With hugs to you all,

Sweden

"My seeds are great and I think I can speak for all lucky recipients when I say 'thank you, thank you, thank you'. A lot of work and it's very much appreciated."

New Jersey

"Eureka! Since I never got the seeds I ordered the last 10 years, I said 'the hell with it' and gave my seed to other exchanges this year. I figured when I get the NARGS seed I'd just compost it. You did it. You sent what I ordered. Thank you for restoring my faith. Nice job."

Pennsylvania

"NARGS Seed Exchange, Merci beaucoup pour toute la peine que nous vous donnez et le plaisir que vous me donnez. Bonne Année."

France

"This is a very exciting thing for me, and I thank you for the opportunity to receive seeds (or to dream even if my choices are unavailable). I also thank you for all the work this entails for you."

Alberta

"May you have a successful and prosperous seed exchange."

Czech Republic

"Thanks for all your work to make the seed exchange possible. It is much appreciated by all of us who benefit." Ohio

"I really look forward to the NARGS Seed Ex each December. I have generally been very happy with seeds in the past, only 3 or 4 packs not being true to the label. Thank you for a seed list containing many species and varieties not available in Australia.

Australia

"Thank you for all my seed—so many first choices. Thank you for your hard work and for organizing a successful seed exchange."

England

"Thank you for all your time and effort."

Alberta

"I am particularly interested in viola seed to have my collection complete. I'd be colossally glad if you could fulfill my wish."

Germany

"I thank you for your care. Many greetings.

Poland

"Frohe Weihnachten und ein gesundes Neues Jahr, Seed Exchange."

Germany

"I am crossing my fingers for *Houstonia caerulea*. [But] I'll be happy any old way.

Indiana

The Back Page

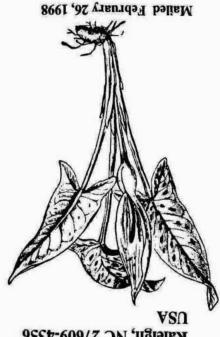
Chair's Comments

by Barbara Scott

This week (the last week in February), I picked blooms of all the hellebores growing near my door to enjoy their colors indoors: the greenish white and mottled purples of H. x hybridus, the pale green of H. foetidus, and the milk white of H. niger, tinged with pink on the underside (a nice complement to Daphne odora). All of my hellebores came from members of this group, either as seedlings from one of our sales or as gifts from chapter members. In a sense, the chapter is blooming as well as the hellebores.

Our chapter *is* flourishing. The January meeting was so well attended that we did not have space for everyone to sit, although no one seemed to mind. During January and February, chapter volunteers filled over 2,000 orders for the NARGS seed exchange. Our next national task will be the winter study weekend in January 1999—a scant nine months away. Preparation has already begun; to volunteer your time and talents, contact Bobby Ward (biblio@pagesz.net), or (919) 781-3291.

Right now I'm anticipating our March 21 meeting with Darrell Probst's talk on epimediums and our April 18 picnic at the Patterson's garden in Sanford, which I saw for the first time last spring and can't wait to visit again. Bring some seedlings to share at the picnic, and don't forget to set aside some pots this summer for our September seedling saleand for a table our chapter will have at the Winter Study Weekend (January 29-31, 1999); that way we can see more of each other blooming in our gardens the whole year through.



Bobby J. Ward Editor, The Trillium 930 Wimbleton Drive Maleigh, NC 27609-4356

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