

# JC Raulston Arboretum

## Friends of the Arboretum Newsletter

### Number 10

### July 1984

## J. C. Raulston

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Here we go again - later than ever before, but with lots of news, observations and experiences to report. The spring scheduled newsletter disappeared with the pressures of teaching at night in Charlotte and Asheville. As always it was a most enjoyable experience to be out in the state sharing with the 110 growers, county agents, homeowners, etc. taking my course. Though it limited my time to the point little else was done during the spring, at the same time it generated enough funds (two-thirds of our total arboretum budget this year) to help or development progress much faster than in the past - with more temporary help for maintenance, more supplies for building and allowing purchase of more plants. Of course there's always an excuse to avoid writing - after the spring semester, the lure of arboretum work and travel easily side-tracked me. So here you are with a "spring" newsletter in August. But i do resolve to get our projected 3 newsletters per year out so the wait should not be quite so ad in the future. It's been a busy, exciting, and eventful six months I want to share - hope you enjoy the narration.

#### Announcements and Coming Events

August 23 - Friends of the NCSU Arboretum (now the JC Raulston Arboretum) Summer Slide Show. On Thursday evening at 8:00 PM in Room 159 Kilgore Hall, I'll present a slide show on highlights of the first half of 1984 including two trips to the Pacific NW, the wildflowers of the Siskiyous, and assorted highlights of the NCSU Arboretum (now the JC Raulston Arboretum) season.

August 30. During the fall semester I'll be teaching at night for the first time in eastern N.C. Nursery Production will be taught on Thursday nights 7:00-10:00 PM over a 12 week period. Though the course will focus on concepts for handling a commercial nursery business, anyone interested in growing plants would enjoy and benefit from the course with coverage of propagation, soils, fertilizers, pruning, weed control and many other topics. The class will meet at the Pitt County Agricultural Extension Office in Greenville. The registration cost is \$111 and enrollment will be handled at the first class meeting. This will be the only time this course will b offered at night in eastern NC for at least 5 years.

September 15 - Gazebo Assembly Party. At 2:00 PM a team will begin to erect the White Garden gazebo which has been provided by the North Carolina Association of Nurserymen. The instructions say this should take very little time; however, experience has often shown how far off such soothing directions can be. We'll work till finished but expect it to be up by 4:00 PM. The invitation is for watchers and you'll not have to work - with luck we may even provide refreshments and a walking tour of the arboretum after the beautiful new structure stands proudly in its place of honor. (Now - if we can only get it all painted before that date!)

October 10 - Friends of the NCSU Arboretum (now the JC Raulston Arboretum) Fall Slide Show. On Wednesday evening at 8:00 PM in Room 159 Kilgore Hall, I'll resent a slide show on highlights of the Liverpool International Horticultural Exhibition being held in England this year, as well as other assorted English and U.S. gardens. We'll also have a distribution of a variety of choice unusual plants for those in attendance.

October 20 - The first annual fall "Dynamic Daffodil Dig Day". Bring your trowel and cove to the arboretum on Saturday from 9"00-12:00 and help us plant our collection of 250 daffodil cultivars. We will have extra bulbs of a number of fine unusual types of share with helpers.

## Winter Damage

From the vantage point of July, the anguish of last December is much diminished in comparison to feelings in Feb-May when damage symptoms were most strongly expressed. In many ways it was the most damaging winter of decades - and unfortunately is being misinterpreted by many in my opinion. Winter hardiness of plants is a complex subject and plant responses can be extremely variable depending on specific combinations of events and circumstances encountered. Several major factors must be considered - from the plant standpoint: A - the potential hardiness of a plant is that limit a plant can handle if properly conditioned or hardened; B - the actual hardiness of a plant at any moment - which is extremely variable and the actual hardiness of a plant at any moment - which is extremely variable and dependent on moisture levels and cell activity (even plants hardy to -50oF can be killed at 27oF if in active succulent growth); and from the environmental standpoint - A - when the cold occurs 9 very early or very late are more damaging than in mid-winter), B - how fast temperatures changed (rapid drop more damaging than slow), and C - how low the temperature reaches. Christmas Day 1983 brought together just about the worst possible combination for maximum damage - we had received no cold temperatures to induce hardening (a low of 25oF up to that time and warm days) causing temperature dormancy regulated plants to remain in active growth, sudden drop from 70's to 5oF and remaining f=low for several days. Then another kind of injury comes from tissue dessication by rapid water loss - and we also had bright sun and high winds with the cold which "scorched" many broadleaved (and even some conifers) evergreens. In N.C. - the further east one went, the less hardened plants were and the greater damage resulted (and on a broader scale, the farther south - Texas, Georgia, etc. - the more injury). Another factor unusual in this blast of cold was its' total extent - never in recorded U.S. history had so intense cold covered such a wide area at such an early date. In my travels this year I've unfortunately had a chance to see just how bad it was - in the mild nursery belt of Oregon they had 10oF & 70 mph winds for days damaging enormous amounts of container stock; in Texas the Valley agriculture was destroyed - citrus all gone, most landscape plants dead to ground, 70% of all Texas nursery stock terrible - but I believe some over-reactive and irresponsibly response has occurred - several powerful voices have stated that anything damaged this winter should be completely dropped from nursery/landscape usage. That's the same mentality of people who read of an airplane crashing and resolve to never fly again. On that basis *Pyracantha* and *Camellia sasanqua* would both be eliminated from eastern N.C. - a foolish concept considering that 50-year old plants that had never been injured before were killed this winter. I consider this winter to have almost no validity to use as any basis for judging the real adaptability of plants. Never have plants so unhardened been hit so severely at so early a date. We had a number of plants that had been through several winters with lower temperatures with no injury - that were killed this year.

Then there is always the extra mystery of survival/death under close or similar conditions - *Agapanthus* were devastated at NCSU, not bothered at UNC; *Ligularias Leycestria* (in both field and lath) were killed - but a tip of one branch had bent to the ground and naturally air-layered - and the rooted plantlet had no injury. Mysteries aplenty.

The cold period did not last long enough to penetrate the ground deeply and often plants that would have been killed in a "normal" winter with perhaps 10oF, had living roots and resprouted after our 5oF. Though tops were killed, almost all our *Eucalyptus* cam through. Ironically, if one eliminated the 4 day Christmas period - this was one of the mildest winters on record - never dropping below 20oF again in Jan-April.

So - a few notes on plant responses. DEAD - *Heteromeles arbutifolia*, *Sasa pygmaea*, *Ilex dimorphophylla*, *Viburnum suspensum*, *Butia capitata*, *Ilex europea*, all *Arbutus* (were in active growth), *Washingtonia filifera*, *Michelia doltsopha*, *Jasminum officinale*, *Rhododendron crassum*, *johnsoneanum*, *Eucrypha X numanensis*, *Podocarpus totara*, *Cornus capitata*, *Pieris forrestii*, *Gardenia jasminoides Veitchi*, *Sarcandra glabra*, *Pernettya mueronatum*, *Aucuba chinensis*, *Neolitsea sericea* and *aciculata*, *Maesa japonica*, *Myrica californica*, *Trachycarpus fortunei*, *Corokia cotoneaster*, *Daphne retusa* and *tangrica*, *Berberis calliantha* and *darwinii*, *Solanum jasminoides album*, *Koelreuteria bipinnata*, *Illicium religiosum variegata*, *Zanthoxylum planispinum*, *Aphananthe aspera*, *Camptothica acuminata*, *Liriope Border Gem*, *Curly Twist*, *Majestic Variegated*, *Aristolochia californica*, *Sisyrinchium macounii album*, *douglasi*, *Pleione bulbocodiodes & peteri*, *Cyathodes colensoi*, *Convovulus cenorum*, *Clinopodium coccineum*.

Of evergreen oaks - *Q. virginiana*, *suber*, *hypoleucum*, *ilex*, *hinkelyei*, *phillyreiodes* were undamaged, but sadly the magnificent told specimen of *Q. phillyrea* forming "The Secret Garden" was severely injured with 1' of limb tips dead and massive bark splits - we may still lose it.

Some things killed back severely or to ground and resprouting - *Pyracantha*, *Camellia sasanqua*, *Loquat*, *Serissa foetida*, all *Escallonias* and *Rhaphiolepis*, *Itea oldhamia*, *Mahonia 'Arthur Menzies'*, *Callistemon sieberi*.

And then the pleasant surprises - survival of needle palm, *Sabal minor*, *Michelia figo*, *Cupressus goveniana Gloria Green*, *Cupressus macrocarpa pygmaea*, *Yucca whipplei*, *Berberis fremonti*, *Aesculus californica*, *Persea borbonia*, *Taiwania cryptomerioides*, *Cunninghamia konishi*, 24 *Rhododendron* species, *Araucaria araucana*, *Leptospermum represtie*, *Ehretia thysiflora*, *Dierama*, and thousands more. In May the arboretum showed far less total losses than I would have dreamed possible from visual symptoms in January. We probably lost less than 70 plants of our ca. 4,000 species - the most of those real marginals and some probably to other reasons that winter injury per se.

## 1984 Daffodil Evaluation

In the fall of 1981 we planted a single bulb each of 117 daffodil cultivars in the area between the French parterre and the tree wisterias. This year as they bloomed the number of flowering stems produced was recorded and this gives an idea of vigor and bloom performance. Cultivars producing 7 or more stems (some have multiple flowers per stem) in their 3rd bloom season included:

Baby Moon 9 High Note 15 Pretty Miss 9

Carbineer 8 Ice Follies 9 Quail 9

Curlew 9 Kinglet 8 Stratosphere 8

Dickcissel 9 Monument 7 Thalia 8

Dutch Master 7 Oregon Gold 16 Trevithian 13

Geranium 8 Pink Cloud 7 Yellow Sun 10

Golden Harvest 8

In June the collection was dug and divided so we can begin to build toward eventual drifts of bulbs of a cultivar. Curtis Brooks, curator at the UNC Coker Arboretum, also has a large collection and luckily our two collections have little overlap in contents. So we are in a swap that will effectively double our holdings. With the new ones we're ordering in - we should have about 250 cultivars to plant this fall. Since the west arboretum beds are now well established and visitors are beginning to use that area - we will plant the main collection in the west arboretum. As hands on trowels wear out quickly we can use help and invite you to attend our gala fall "Dynamic Daffodil Dig Day"

on October 20, 9:00-12:00. We should be able to share some of the fine cultivars with those who come to help. Bring your trowel!

#### Ideas of Plant Combination and Uses

The first "completed" area in The White Garden is the cove between the large conifers that served as a walkway until last year. The grass was killed with Roundup herbicide and the area was mulched fall '83. Doug Bethune installed one of his benches as a seating area. During the winter Bryce Lane's and Ted Bilderback's classes moved in the specimen *Styrax* and *Viburnum* plants and other smaller materials were added in April. The planting plan and plant list area are as follows:

1. *Abeliophyllum distichellum* 7. *Narcissus* (underplanted in *Liriope*)
2. *Agapanthus africanus* 'alba' 8. *Raphiolepis indica* 'White Enchantress'
3. *Chamaecyparis pisifera* 'filifera' 9. *Styrax japonica*
4. *Crocus* (underplanted in *Liriope*) 10. *Thuja occidentalis* 'columnaris'
5. *Lagerstroemia indica* 'Snow Baby' 11. *Thuja occidentalis* 'globosa'
6. *Liriope* 'Silver Dragon' 12. *Viburnum odoratissimum*

(map)

The 3 conifers and evergreen *Viburnum* provide year-round background for other plants and a warm sunny cover in winter protected from north winds. The white variegated *liriope* is a year-round groundcover. The flower season begins in March with white *crocus*, followed by *narcissus* and the early fragrant flowers of the "white forsythia" (*Abeliophyllum*). In May and the *Styrax* and *Raphiolepis* bloom; in June the *Agapanthus* flowers; and the 'Snow Boy' crepe myrtle carries through July-August. This plant provides a wide variety of shapes, textures and year-long interest with very tough maintenance-free plants. If I were doing it over, the *agapanthus* and *abeliophyllum* probably should be reversed in position (and we may very well do so).

#### Arboretum Happenings

As an impatient person and a perfectionist to boot (both of which I'm trying hard to "cure") - it often feels to me that nothing is happening and we're getting nowhere in the arboretum on a day-by-day basis. But occasionally I sit down and take an overall look at progress and goals and am able to see a bit more clearly the reality of just what is actually happening. This spring I worked up the following list as a summary to present to the Student Horticulture Club and the honorary floriculture/ornamentals organization, PiAlpha Xi to let the students know how and where their support goes (as the 2 student groups still provide our greatest financial donation support; in addition to their labor assistance).

1983 (Completed)

Addition of 943 species and cultivars to collection

Addition of 8 garden benches built by Dough Bethune

Addition of entry sign designed by Cheryl Dorney

Installation and initial planting of beds in front of lath house including 2 specimen

*Acer griseum*

Initial installation, digging and enlargement, and replanting of perennial border

(18'x 300' = 3,000 plants of 400+ cultivars)

Reworking of groundcovers area and installation of dividers

Building of viewing deck and enclosure wall for Japanese Zen garden

Layout and grass killing in 2 acres of new bed area in west arboretum

Mulching of one acre of beds

Removal of large lightning killed oak in west arboretum

1984 (Goals)

Removal of old entrance court plantings and installation of white garden

Installation of gazebo in white garden

Removal of old juniper collection

Building and planting of new model garden by HS 416

Completion of paving areas in parterre area

Stone paths in perennial border

Path and new bed in rose garden and completion of planting

Entrance arbor to lath house

Interior screening walls in lath house

Planting of 2 of the 4 Japanese gardens - stroll garden and Zen garden

Complete viewing deck wall; install cap on Zen garden wall

Move remainder of screening dwarf loblolly pine trees around Japanese garden

Complete bark mulching of last acre of west arboretum

Accumulate 600 species and cultivars

Computerized inventory and book of arboretum collections and locations

Plant location finder in visitor center

Educational displays in visitor center and plexiglass covers

Permanent labels for 500 plants

Install boxes for lath house and west arboretum tour sheets

At present it appears that we'll accomplish only about 60% of this year's proposed goals - something of a disappointment in a sense - but on the other hand it does represent a major achievement considering our very limited labor and funds available. I don't think we could squeeze much more out of one permanent employee and a few thousand dollars. In a future issue I plan to present a more comprehensive overview of the first 7 years and plans for the 5 years ahead as well as a listing of our needs in gifts, support and funding.

During the fall semester, Curtis Brooks ( who worked at the arboretum during the '83 summer months) designed the White GArden for the entrance courtyard to replace the odd mixture of non-descript plants that were planted there as some of the first arboretum plantings in 1977. This concept of a White Garden was first developed by Vita Sackville-West at Sissinghurst Gardens as a takeoff from the Gertrude Jekyll color-blended schemes. Silver and grey-foliaged and white-flowered plants against a background of green foliage forms the basis of this garden. In our garden, two walkways will lead visitors into the detailed planting areas; and 3 areas for seating exist including those in a white gazebo which acts as the focal point of the entire garden. Most of the existing plantings were removed in the spring and initial installation of new plantings were begun with 2 of the 4 planting beds installed. Borders of seasonal "color" at the front of beds were planted with dusty miller, impatiens, begonias and petunias (to be followed by pansies and bulbs this winter).

We looked at brochures of gazebos from all over the U.S. - and once you've looked at fine ones it's difficult to settle for lesser ones. The one we wanted was far beyond our resources, but the N.C. Association of Nurserymen generously stepped in and provided funds to allow us to purchase it. After a 3 month delay it has finally arrived, the foundation is going in, and we'll erect it in September and

complete that planting bed this fall. The fourth bed around the cutleaf Japanese maple will be planted later during the winter. Although he's now employed at the Coker Arboretum, Curtis still returns to help us in the development of "his" White Garden.

During the spring Tracy Traer's class designed and build the fences for the next set of model gardens. This project was far more complex than last year's garden and involved triple the amount of construction hours and hard work. The 2 part model-gardens. This project was far more complex than last year's garden and involved triple the amount of construction hours and hard work. The 2 part model-gardens will be planted this fall by the next class. We've not yet decided what the "theme" of the garden will be.

In the groundcovers/paving area Don Deal has finished the last of the paving material displays with one wooden beam and two flagstone walks installed. This fall we will have an outside contractor complete the long center walkway of "2"-paver blocks which will extend all the way to the beginning of the annual displays (to the back of the newest model garden). Also in the groundcovers area Larry Hatch has been building a small rock garden/alpines area and planting it with materials from the lath house beds and his own collections. This area should be completed by fall.

During the spring the mounded "hills" were shaped in the Japanese Zen garden and the first plants were moved in - including a mass of 20 Satsuki azaleas (which will be sheared to a low solid mass), 3 old specimen multiple-trunk azaleas about 35 years old and 5-7' tall, a Japanese black pine, a 24-year old *Sciadopyx* and assorted other plants. We had arranged for 1,000 pots of the dwarf mondo grass to divide up and plant the upper mounds, but they were killed at the grower's nursery by the Christmas freeze and no other sources have yet been found. When the fall transplanting season begins we will move in the remainder of the specimen plants - primarily nandinas and camellias - and the gravel can be hauled for the raked stone area. It's going to be very exciting to watch the final "shaping-up" of the area as we near completion.

During the summer we've had from 1-5 people working varying hours (with a peak the week before the early summer field day and the Rock Garden Society tour - when everybody was spit-polishing the garden to perfection). Summer help has come from Jeff Amtmann, Kris Vaughan, Chris Conte, Susan Barton, and of course, Don and Larry. They were (are) all excellent help and their dedication and hard work are most sincerely appreciated. In newsletter #8 I mentioned 2 other helpers named "kitty" - our black cats. The week after that issue went out they disappeared. We got 2 more black kittens that won our hearts, and those of visitors - but they also suddenly disappeared when about 5 months old. Not ones to give up readily - a third pair of black kittens arrived last November and are (knock on wood) still with us. Beth Carroll, ag. extension agent in Asheville and cat-lover extraordinary, has named them for us - "inky" (short for *Enkianthus* - a beautiful shrub) and "Pepper" (short for peppermint). They are thoroughly spoiled, conduct visitors through on tours, and (hopefully) are supposed to be working on mice and rats - though canned tuna is a definite preference.

The other significant development of the spring/summer has been the evolution of Mrs. M. K. Ramm of Durham into the position of curator of the lath house plantings. Earlier she was responsible for the rare plant sources and with our last mailing and has always been an active worker during our plant work days at the arboretum. Because of the complexity of the great variety of plants in the lath house, I had not dared trust the detailed care of it to anyone and my personal maintenance time had become a major time burden. She volunteered to take it over and since early spring has been weeding, pruning, labeling, and planting this area. She's donated dozens of plants and the lath house has steadily improved to its present magnificent stage. The raised beds of bark give incredible growth and we're finding an enormous range of plants can be grown this way. The collection changes weekly and now contains an estimated 1,500 species of choice plants. During my just-completed tour of famous English gardens (to be reported next newsletter) I saw another quite comparable of it. M. K. is extremely knowledgeable, shares her books for reference, provides plants, handles the sources list, and works so many hours weekly in the arboretum on a volunteer basis that I have difficulty in controlling my guilt over so much help. She contributes the following comments about recent happenings in the lath house (and late comments on some of her favorite authors and books). Many, many M.K.!

Notes from the Lath House - M. K. Ramm

Working in the lath house during the very early spring this year was quite depressing. The sudden freeze at Christmas killed the great majority of the marginally hardy shrubs and trees, particularly those from the New Zealand area. Many of these plants have survived some our previous rather mild winters, so the freezes not only killed the plants but also greatly discouraged our hopes for their possible survival here. There remains the possibility that, with a sufficiently long string of mild winters to allow the plants to attain greater quantities of mature wood, some of these plants will indeed survive here. Larger and older, well-rooted plants have a better chance for surviving our winters (if given the opportunity to harden their growth in the fall) than do small plants that have only been in the ground for a short time. Marginal plants that did survive were very slow to produce a new growth. Several did not show signs of life before mid-May. Once new growth began, it has progressed rapidly. The hardy fuchsia collection which looked like a total loss in early May is now blooming profusely. When working with a limited area for planting, some losses can be quite beneficial. There were many plants available for the bare spots in the lath house. A listing of plants set out there this spring follows these comments. Only a few area replacements.

*Acer buergerianum* 'Naruto Kaede' *Anemonella thalictroides*

*Acer palmatum* 'Moonlight' *Antennaria dioica*

*Achillea ageratifolia* *Antennaria dioica* cv. *Tomentosa*

*Aconitum* sp. (two different) *Ardisia japonica* 'Ama No Gawa'

Adiantum pedatum Ardisia japonica 'Beniyuk'

Aeolanthus serpiculoides Ardisia japonica 'Chiyodo'

Ainsliaea cordifolia Ardisia japonica 'Hinotsukasa'

Ajuga reptans cv. Rosea Ardisia japonica 'Hinode'

Anuga cv. Silver Beauty Ardisia japonica 'Ho-fukurin'

Allium senescens var. glaucum Ardisia japonica 'Hokan Nishiki'

Allium splendens Ardisia japonica 'Hoshianii'

Allium stellatum Ardisia japonica 'Kimigayo'

Alocasia sp. Ardisia japonica 'Koganebana'

Amsonia hubrectii Ardisia japonica No. 803

Amsonia tabernaemontana Ardisia japonica No. 804

Anaphalis triplinervis Arum italicum

Anaphalis margaritacea 'Yedoensis' Aruncus dioicus

Aruncus dioicus cv. Kneiffi Felicia amelloides variegata

Arundinaria viridistriata Festuca vallesiaca var. Glaucescens

Asplenium platyneuron Filipendula palmata cv. Nana

Athyrium niponicum hybrid Gamolepsis chrysanthemoides

Azalea 'Alexander' Gaura Lindheimeri

Azalea 'Great Expectations' Geranium sanguineum album

Azalea 'Keisetsu' Geum Lionel Cox

Azalea 'Kusadama' Genista tinctoria plena

Azalea 'Kusadama Variegated' Goodyera pubescens

Azalea 'Matsu Nomei' Gordonia axillaris

Azalea 'Mine No Kikari' Gypsophila paniculata Viette's Dwarf

Azalea 'Pink Pancake' Hebe (several)

Azalea 'Red Fountain' Heloniopsis orientalis v. breviscapa

Begonia grandis Hepatica americana

Calanthe discolor forma 'Sieboldii' Hierochloa odorata

Campanula prostrata Hydrangea Rosarita

Campanula rotundifolia olympica Hydrangea Blue Donue

Campanula sarmatica Hydrangea St. Theresa

Camptosorus rhizophyllus Hydrangea Bottstein

Carex buchananii Hydrangea (Lacecap)

Carex cv. The Beatles Hydrangea variegata

Carex glauca Hydrophyllum canadense

Catananche caerulea alba Hymenocallis crassifolia

Chimaphila maculata Hystrix patula

Clintonia umbellata Ilex cv. Piccolo

Clitoria mariana Illicium lanceolatum

Clitoria terneata Iris cristata cv. Shenandoah

Clitoria terneata flora-plena Iris foetidissima

Codonopsis clematidea Iris gracilipes

Conandron ramondioides Iris pallida dalmatica

Cornus controversa Iris prismatica

Cornus controversa variegata Iris siberica 'Little White'

Cornus kousa variegata Iris siberica 'Super Ego'

Corydalis chelanthifolia Itea ilicifolia

Corydalis ochroleuca Jasminum floridum

Cupressus macrocarpa 'Donard Gold' Lamium maculatum album

Curpessus sempervirens stricta Lamium maculatum cv. Aureum ex. Ross

aurea Lamium maculatum roseum

Cactylis glomerata variegata Lavendula stoechas spp. pedunculata

Dianthus carthusianorum Lazula sylvatica Auslese

Dianthus nardiformis Leucothoe Carinella

Dianthus gratianopolitanus 'Tiny Leucothoe Scarletta

Rubies' Lilium Manuella

Dianthus superbus NA 51035 Lilium Orange Wood

Dianthus sylvestris Lilium Red Night

Decentra exima Lilium Sonja

Digitalis ferruginea Lilium Tuneful

Digitalis lutea Lilium White Wonder

Digitalis purpurea Linaria genistifolia

Dryopteris fragilis Linaria sp.

Epimedium X cantabridgense Lygodium palmatum

Epimedium grandiflorum 'Rose Queen' Lysimachia ciliata

Epimedium pubigerum Mahonia nervosa

Epimedium X warleyense Millium effusum aureum

Epimedium X Youngianum 'Roseum' Mitchella repens nana

Euryops pectinatus Nandina domestica cappilaris Ikada

Nandina domestica Shirochirimen Rhodophiala bifida

Nandina domestica Tamahime Rosa acicularis

Nandina domestica San Gabriel Satureja georgiana

Nierembergia repens Saxifraga careyana

Nierembergia scoparia albiflora Scuttelaria integrifolia

Olearia X scilloniensis Sedum cv. Rosey Glow

Onoclea sensibilis Sedum Nevii

Origanum microphyllum Selaginella involvens

Ostrya carpinifolia Senecio millefolium

Oxalis magellanica Serissa foetida rosea

Peltiphyllum peltatum Sisyrinchium californicum

Penstemon australis Sisyrinchium cv. Sapphire-Jubilee

Philadelphus coronarius 'Aureus' Skimmia japonica

Phlomis fruticosa Smilacina racemosa

Phlox bifida Spiranthes sinensis

Phlox divaricata 'Dirigo Ice' Streptopus amplexifolius

Phlox divaricata 'Chatahoochee' Tanakea radicans

Phlox cv. Millstream Jupiter Teucrium Ackermanii

Phlox X procumbens 'Folio-variegata' Thlaspi bulbosum

Phlox stolonifera Irridescens Thymus britannicus

Phlox stolonifera Sherwood Purple Thymus Broussonetii

Pinus rigida Sherman Eddy Thymus caespitius

Pinus sylvestris compressa Thymus Doerfleri var. Bressingham

Polystichum munitum Thymuspraecos-articus albus

Potentilla thurberi Thymus praecox-articus splendens

Pulmonaria saccharata alba Thymus serphyllum minus

Pyrrosia lingua corymbifera Tofieldia coccinea

Pieris japonica Red Mill Torreya californica

Pleione Hookerana Torreya nucifera aurea variegata

Pleione humilis Trautvetteria carolinensis

Pleione maculata Trillium cernuum

Polemonium caeruleum Blue Pearl Trillium grandiflorum

Polemonium pulcherrimum album Verbena peruviana

Potentilla alba Verbena tenuisecta

Primula kisoana Veronica liwanensis

Primula veris ssp. Columnae Viburnum awabuki

Pulsatilla cv. Barton's Pink Viburnum burejaeticum

Pulsatilla halleri ssp. slavica Viburnum davidii

grandiflora

Rhododendron austrinum Escatawpa Viburnum wrightii

Yellow Viola dissecta chaerophylloides

Rhododendron mucronatum Viola pedata cv. Artist's Palette

Rhododendron mucronatum album Viola rotundifolia

R. mucronulatum 'Winter Brightness' Viola verecunda var. yakusimana

Rhododendron linearifolium Woodwardia areolata

Rhododendron serphyllifolium album Zantedeschia (white, yellow & orange)

The event which provided a focus for efforts toward refurbishing and immaculately grooming the lath house was the visit to the Arboretum on June 2 by the American Rock Garden Society. As their tour was well-timed to coincide with the annual population explosion among our (shudder) WEEDS, most of the efforts immediately preceding the visit were toward weeding and dead-heading the entire house, including the outside beds, every three days. (Normally this can be done once a week during the growing season as it is to be hoped that the weeds that I miss won't be noticed by other people either). There is a continuing problem in the lath house with *Oxalis stricta* and *Euphorbia supina*. We have carefully selected for the darker leaved forms of both of these plants because those with the dark leaves don't show up well against the bark when weeding is done. Consequently, they multiply with great abandon. In order to entertain the Rock Gardeners a bit, we prepared a couple of surprises for them. A recently completed experiment with Easter lilies provided us with plenty of fresh flower which were wired on one of the paper-bark maples at the front entrance to the lath house. The label was changed to read *Acer griseum* 'Liliaflorum'. This was well appreciated by our visitors and was probably the most-photographed scene at the Arboretum. To further test the interest of our guests in our rarer plants, we transplanted a lovely clump of wild garlic from the West Arboretum, labeling it *Allium Raulstonii*, just to see if it would be noticed. It was, and J.C. was gently teased about having such a marvelous plant "named in his honor". (Raulston's note - and currently another choice weed resides in the perennial border label *Solidago Raulstonii* cv. 'Golden Goatee'). M.K.'s note 0 This plant was senselessly slaughtered on July 30, just hours before J.C. returned from England.)

The weekend before the ARGS visited, Edith Eddleman and I drove to Viette's Farm and Nursery in Fishersville, Virginia. We felt that we needed to break from our hard work and that we might find a few special items to add to the lath house and the perennial border. We certainly did. Indeed, I don't think that we could have gotten another plant into my car. The youngster who helped us take our plants to the car to load watched with frank amazement as we stashed away ten banana boxes full of plants. A visit to Viette's Nursery can easily be made in one day - the drive took about four hours from Durham. Their display gardens are magnificent - containing huge clumps (the largest *Dictamnus albus* that either of us had ever seen) of the plants that they have available in containers in the sales area. Mark Viette was very generous, donating several wonderful plants for both the lath house and the perennial border. As an added favor, we were allowed to visit their propagation area. It is truly exciting to see several one hundred-foot rows of plants such as *Iris pallida* 'Dalmatica' and *Hosta ventricosa* 'Aureo-marginata' as well as many other shade loving plants. They also have huge fields of bearded iris and peonies, both of which were in full bloom when we were there. Edith and I also visited two lovely gardens belonging to Friends of the Arboretum. In early May we visited Bobby Wilder who has a wonderful and varied collection of plants in his beautifully maintained garden south of Raleigh. Then in mid-June, we, along with Larry Hatch, visited Jim Cooper, the President of the American Hosta Society, who lives quite near to the Arboretum. His collection of hostas is magnificent. The hostas live in close harmony with many, many daylilies, daffodils, giant bamboo, Japanese painted ferns, lace-cap and oak-leaf hydrangeas and probably the largest coastal redwood in the South. Both men were extremely generous with their plants and we brought back a number of new additions for our respective areas of the Arboretum. Another wonderful visit was made by this trio to Elizabeth Lawrence in Charlotte and to see her beautiful garden filled with choice plants. Her knowledge of fine plants and their appropriate uses is astounding and inspirational. She graciously autographed the small mountain of books that we took with us and shared both information and plants in her generous manner. North Carolina can rightfully be proud of this grand distinguished lady as one of the finest garden writers in America.

Raulston's note - added after the above was written. In late June Edith, M.K., Larry Hatch and Don Deal all journeyed to Richmond, VA to visit a series of private gardens and then on to DC/Baltimore for an intense weekend of plants. Phil Normandy was a gracious host for a lengthy tour of Brookside Gardens and generously shared his plants for additions to our collections. (At least, I think he shared - my curators just grinned ear-to-ear without comment as they unloaded flats of Brookside Plants from the trunk). They also shopped at Carroll's Gardens and toured Kurt Blumel's Grasses, LaDew Topiary Garden and the National Arboretum.

It was quite a trip and they arrived back at 2 AM worn out, car stuffed to the ceiling with plants, notebooks full, cameras still smoking from overuse and dreams of return trips to get the things that "got away" - e.g., the variegated *Stewartia pseudocamellia* in full bloom in a garden, discovered by Larry, with owners apparently unaware of its uniqueness.

I followed them to D.C. a week later for nurseryman's meeting in North Virginia and stayed an extra day to visit The National Arboretum, Brookside and Behnk's Garden Center. It was a treat to visit a number of people, and in particular to have my first opportunity for a lengthy visit at The National Arboretum with Barry Yinger after brief encounters as we crossed paths at meetings over the past several years. I view Barry as a National Cultural Resource of immense value. He has training in horticulture, has studied Chinese, Japanese, and Korean languages, has lived and worked in Korea and has many contacts in the Japanese society of rare plant collectors. He has introduced many unusual cultivars of Asiatic species to the U.S. through a variety of collecting trips. At the time you receive this he will be in Korea again collecting *Camellia japonica* from its northern-most range (for increased hardiness) and many other plants. I'm hopeful that it will be possible to get him to come to N.C. for a visit and a lecture on his travels to our friends group. Trying to schedule it in September and will send out a special memo if it comes off. Barry has worked on development of the Asian Valley at The national Arboretum over the last 2 years and it is exciting to see the outstanding development occurring there.

One cannot fail to mention the new National Country Garden installed at The National Arboretum this year. It was designed to show stimulating new gardening concepts and create a bit of controversial discussion for arboretum publicity and public awareness. It has succeeded on both counts - dozens of unusual things from sculptural scarecrows to walls of flowers - the whole thing painted lavender - glowing out in the meadow. It must be seen to be fully appreciated.

Then a brief stop at Brookside to carry off the few remaining plants of Phil's that escaped Edith, M.K. and Larry - leaving his lath house barren (except for about a thousand stunning choice plants I still lust for!) The many extraordinary plants shared by Brookside over the past few years are the gems of our collection and we are most appreciative of their grand support.

#### Book News and Quotes from Recent Reading

In the last newsletter I praised ISBS/Timber press (P.O. Box 1632, Beaverton, OR 97075) for their prolific outpouring of superb new books. The most recent color brochure of new books has several I must recommend. It is exciting to realize that the ultimate woody plant reference set is being translated and will be published beginning in July 1985. The four-volume set Manual of Broad-Leaved Trees and Shrubs by German author Gerd Krussman is the reference guide for Europe (along with W.J. Bean's 4 volume Trees and Shrubs Hardy in the British Isles). "Provides description and cultural information for all the presently known garden-worthy trees and shrubs utilized in temperate and sub-tropical climates". Vol. I is 498 pg. and is priced at \$58.50 if subscribing to the entire set. An excellent condensation of his work (described in newsletter #7: A Pocket Guide to Choosing Woody Ornamentals is more reasonably available for \$12.95. Two excellent books for homeowners planning their landscape planting are Planning Your Garden by Samson Low (\$12.50) and Garden Design Illustrated by John and Carol Grant (\$19.95). Fifty-five other irresistible books are also described and they sadly stole my breakfast, clothing, gas, movie and phone money for the next month. But one must establish priorities in life after all. They are, of course: 1-plants, 2-books, 3-travel, 4-food (with emphasis on sugar, grease, salt, and chocolate - the 4 basic food groups), 5-house payments, and the lesser things of life.

Several members and former NCSU students will remember Mr. Joe Green who taught landscape design in the Hort. Sci. Dept. in the pre-Will Hooker and Tracer Traer-era (about '77-'79). Joe taught at the University of MD after leaving NCSU; went from that to a professional photographers school in New England and currently has a photographic business in DC. He recently received a grant from the University of Georgia to do aerial photography of major landscape gardens of the eastern seaboard as a historic documentation and eventual publication. He recently did the Biltmore Estate in Asheville as the first of the series and will be photographing from Florida to Massachusetts.

An enjoyed quote from Shirley MacLaine after receiving her Oscar for Terms of Endearment - "As a middle-class Protestant American, I used to live in the future, which meant I was ripping off the present. As I worried about whether I had done right in the past, which is also ripping off the present. Nature is only concerned with now. Nature has no sense of sorrow about the past anxiety about the future."

I've often written of my great liking for author Henry Mitchell and his grand book The Essential Earthman. Sadly, I very rarely happen to get to see his regular column in The Washington Post and I consider those who can regularly read it to be blessed. The following is an assemblage of bits of his May 27 column which I enjoyed. "Sometimes people complain that such-and-such a flower fades quickly, and people new to the natural world (having been weaned on aluminum) are almost always startled to learn that peonies, irises and lilies, for example, bloom only once a year. And the first time they discover the sad and gaudy life span of these flowers they are shocked. Often I meet people who roar up and demand to know why their favorite flower only lasted three days, and what did I intend to do about it? Well, nothing. If you don't like the way flowers do, nobody makes you grow them, and you can always go in the house and play with your computer, as I point out, and this is undoubtedly what a lot of people were born for. When they are gone, it does not do at all to say - well, we'll look at them next week, because next week is always too late. When peonies or irises or lilies bloom, you stop and look at them. The dentist will be there next week, the office will be there, next weed (and if not there are plenty of other offices) and if people can take off time for funerals, abies, plague and conventions, they can take off enough time to get properly saturated with the iris. Flowers are too much bother unless the grower lives with them on a high plane of intimacy. Then they are rewarding enough, and never mind how brief the season is. The idea is to grow at least a handful of the great flowers and then drop what has to be dropped when they bloom. Please do not inform me of what I know all too well, that a regular job interferes in the most disgusting way with a garden. A good bit can be done, however, by declining every human contact that can possibly be declined during the iris season, for example. For some bizarre reason, people who have behaved themselves perfectly well all winter start having suppers and brunches and God knows what else in May. If you think ahead, and do not mind being ostracized by the human race, these grim events may be largely bypasses."

I find the single flowered tree peony to be a perfect example of Mitchell's point - it's expensive, slow, difficult to grow, looks ugly as sine 361 days of the year - but for 4 days a year it is beauty beyond measure and a gift of the Gods - and no garden can be without one.

Two enjoyed quotes from the American Rock Garden Society 50th Anniversary Banquet Program.

Awake, my Muse, bring bell and book "The shed blood of disagreeing enthusiasts

To curse the hand that cuttings took. is the seed of the garden, and the hostile-

May every sort of garden pest ities of gardeners seem only equaled in

His little plot of ground infest righteous acrimony by those of Patriarchs,

and Popes, Anglican Bishops and other

Who took the plants from my moraine, persons of profession presumably holy."

Deserves a most insidious pain; Reginald Farrer

Who stole the plants from my best trough,

Has earned a terminally fatal cough;

Who purloined seedlings from my screen,

Should end up hanging from a tree;

Let spider mites and taxus weevils,

Thrips and slugs and other evils

Slay his choicest alpine treasures

While muggs of August end his pleasures.

A new slide series dealing with perennials has been developed by Dr. Steven M. Still for the Agri. Education Curriculum Materials Service at the Ohio State University. According to Dr. Still this set will be a valuable teaching aid or reference for horticulture instructors, nurserymen, designers, landscape architects, or anyone interested in herbaceous perennials. The plants are grouped by flowering period and treated alphabetically, in each group, by scientific name. The price for 338 color slides and illustrated script is \$88.00 plus \$3.50 for postage & handling. For more information or to plan an order contact: The Ohio State University, Agri. Education Curriculum Materials Service, Room 254-B, 2120 Fyffe Road, Columbus, OH 43210 (614) 422-4848.

After almost dying out in the 1960's, mail order sales are booming nationwide with thousands of catalogs, being issued for every imaginable product. Perhaps best known by the Niemann-Marcus his & her Christmas fantasies. Somehow I must have gotten on every list around as catalogs have flooded in this year. Below are 6 yard and garden supplies and equipment catalogs. I enjoy simple basic items and most of these are too gimmick oriented for my tastes - but fun to look at.

Clapper's Furniture, tools, books

1125 Washington St.

West Newton, MA 02165

Gardener's Eden Wide variety of garden products - at

P.O. Box 7307 time "gimmicky"

San Francisco, CA 94120-7307

Sporty's Tool Shop Not specifically garden catalog but

Clermont County Airport wide variety - everything imaginable

Batavia, OH 45103

Smith & Hawken Beautifully crafted, high-quality garden

25 Corte Madera tools

Mill Valley, CA 94941

Brookstone Yard & Garden Tools and gadgets

300 Vose Farm Road

Peterborough, New Hampshire 03458

(603-924-9511)

David Kay Garden & Gift Catalog Tools, gadgets, household things

26055-D Emery Road

Warrensville Heights, OH 44128

Several of the Friends of the NCSU Arboretum (now the JC Raulston Arboretum) have extensive collections of sedums and others are discovering this easy-to-grow and extremely varied group of plants. An excellent book, Handbook of Cultivated Sedums by Ronald L. Evans has just been published by Science Reviews Ltd., 40 The Fairway, Northwood, Middlesex HA 630Y England. The book is clearly laid out for ease of use and includes extensive information about all species, line drawings and a large number of excellent color photographs. My major interest in the book is the excellent 24 page chapter on habitats, distribution and geography of sites all over the

world. For example, one can learn that Turkestan (in Siberia) is low plains to 1,600 elevation, has spring rains of 8-16" with dry summer and winter, temperatures from frost in winter to 90oF in summer, and alkali soils - sticky when wet, iron-hard when dry - with much sodium present. Most of the major ornamental plant origin areas are discussed. A fine book and a must for anyone interested in sedums or plant geography.

(Two additional notes on sedums - a recent change in our catalogs list for Alpine Gardens - it is now Red's Rhodies and Alpine Gardens, 15920 SW Obsert Lane, Sherwood, OR 97140. Also - Larry Hatch, curator and graduate student, has a very extensive collection of Sempervivum and Jovibarba. He has recently published a listing of his collecting and he is interested in trading plants (no sales) with other plant hobbyists and collectors. You may contact him by writing: Graduate Student Office, Dept. of Hort. Sci., Box 7609, NCSU, Raleigh, NC 27695-7609.

For those interested in herbs and their use, a very fine new book has just been published on the concepts of designing various kinds of herb gardens. Herb Garden Design by P.A. Swanson is available from: University Press of New England, 3 Lebanon Street, Hanover, New Hampshire 03755 (\$17.45 including shipping and handling). Many designs are clearly presented for all sizes, functions and historic styles of herb gardens. A most impressive new book.

One of the most totally comprehensive garden books I've seen has been published this summer. The Garden Book by John Brooks (\$22.50) is available from Crown Publishers, Inc., One Park Avenue, New York, NY 10016, and happily, I see it is most mass market bookstores - so it is one that is easily accessible. It contains 400 color plates and 1,000 drawings and plans on planning, designing, constructing, planting, growing and maintaining a new garden. The majority of such American books are heavy on "fluff" and light on detailed information; but this English guide is detailed and practically useful. I highly recommend this wonderful new book as the most useful single book a new (or experienced) home gardener could purchase.

This spring I had occasion to read several historic U.S. journals of the 1800's and enjoyed an article on moving of large trees (The Horticulturist and Journal of Rural Art and Rural Taste 4(7):297-301. January 1850) which began: "In a country where thousands of new rural homes are every year begin made, how many times do the new proprietors sigh for large trees. Ah, if one could only have half a dozen, - two or three, - nay, even a single one of the beautiful elms that waste their beauty by the road side of some unfrequented lane, or stands unappreciated in some farmer's meadow, who grudges it ground room. And is there no successful way of transplanting such trees? - inquires the impatient owner of a new site, who feels that there should be some special process - some patent regenerator of that forest growth, which his predecessors have so cruelly despoiled, - his predecessors, to whom cord-wood was of more consequence than the charms of sylvan landscape. Though there is great delight in raising a tree from a liliputian specimen no higher than on's knee, - nay, even from the seed itself, - in feeling, as it grows upward and heavenward, year by year, till the little thing that had to be sheltered with rods stuck about it, to prevent its being overlooked and trodden upon, has so far overtopped us that it now shelters and gratefully overshadows us; though, as we have said, there is great delight in this, yet it must be part and parcel of other delights. To a person who has just "settled" upon a bare field, where he has only a new house and a "view" of his neighborhood to look at, we must not be too eloquent about the pleasure of raising oaks from the acorn. He is too much in the condition of the hungry man, who is told to be resigned, for there will be no hunger in heaven. It is the present state of affairs that, at this moment, lies nearest to him." It seems that has been little change in last 135 years! The article is fascinating, and with all our modern machinery and technology I doubt that we can move trees any more successfully today. "To a person competent...the art of transplanting large trees...with his machine (i.e., a bar or axle between 2 large wheels), his oxen and his trained set of hands...a dozen elms 40 feet high... would be a matter of trifling moment." They suggest trees 30' high and whose trunk is 1' in diameter to be best for "embellishment of new places, since they unite immediate beauty of effect with cheapness in removal, and less mechanical skill to move them." (What!!!) Of course it cost \$5 to move such a tree back then. Ain't history fascinatin'?

Books by Christopher Lloyd and Margery Fish - by M. K. Ramm

A book has been published this spring so fine that I would recommend that anyone with the slightest interest in gardening buy it at once. That book is The Well-Chosen Garden by Christopher Lloyd. It is available for Capability's Books, P.O. Box 114, Highway 46, Deer Park, WI 54007 for \$18.22 plus \$1.00 for postage. The format of The Well-Chosen Garden is rather different. Each of the thirty-eight chapters presents a detailed discussion of one to six elegant photographs, over half of which were taken by Lloyd himself. The primary theme is that of successful combinations of various plants. Granted, the great majority of the plants shown and discussed cannot be picked up at the neighborhood five-and-ten, but many of them can be found in the catalogs of nurseries in their list sent out with the last newsletter. Others could be found in the seed lists of the various plant societies or, certainly, can be seen at the arboretum. In addition to suggesting many lovely combinations that one might try, Lloyd's new book is packed with advice for gardeners of any level. He is never afraid to say just what he thinks. It is somehow so very satisfying to see in print something that you've thought all along but considered perhaps unfashionable to admit.

For instance: "Always make your borders as large as you can. They're more important, much more fun and no more work than lawns."

"Leaves sustain. Even the deciduous kinds are with us for far longer than most flowers. Evergreens can look pretty shabby at winter's end but throughout the darkest days they give us courage".

"The chief reasons for growing herbs in our gardens should be either because they are beautiful or in other ways attractive plants, or because they add spice to our diet; preferably the two combined. There is also a fun element in growing a plant like Atropa belladonna with a long, romantic history. Deadly poisonous plants quite frequently look deadly poisonous and there may be a certain relish in

owning them and imagining whom we should like to finish off with their help. That's a fairly harmless way for the beast in us to show its claws."

Christopher Lloyd has the good fortune to live and garden at Great Dixter, one the loveliest gardens in the south of England. The fifteenth century house has been in his family since 1910. The gardens were designed by Sir Edwin Lutyens, the great friend of Gertrude Jekyll. While no one needs to be reminded that North Carolina is not England, there are many similarities between the conditions under which Lloyd gardens and those of this area. His garden is perhaps a little colder at times than here for he says that about every other year his horse pond for a short time freezes hard enough to walk on. As here, the cold is rarely prolonged. As here, there is snow but it doesn't stay long enough to provide useful cover. And - he has poorly draining, acid clay.

The English are spoiled by the fact that Christopher Lloyd writes for *Country Life*, *Popular Gardening*, *The Guardian*, and the *Observer Magazine*. They keep letting his books go out of print! The dedicated Lloydophile can, however, obtain some of his earlier books from Warren Broderick-Books, P.O. Box 124, Lansingburgh, NY 12182. They also occasionally turn up at used-book or library sales. I keep trying to imagine the sort of person who would give up a Christopher Lloyd book for any reason, but am totally defeated. These true gems of gardening literature include *The Well-Tempered Garden*, a 466 page gold mine of information on every aspect of gardening - an American edition of which was published in 1971 by E. P. Dutton & Co., Inc., and *Clematis*, which was first published in 1977 and reprinted through 1980. In *Clematis*, the relative merits of many of the hybrids and the commonly available species are discussed at length, as well as, the history, uses and cultivation of this familiar plant. One point that Lloyd reiterates is that clematis do not need lime - unless your soil is so acid that everything you grow needs lime. He believes that the idea arose from seeding the British native *C. vitalba* growing wild in chalky soil, leading to the assumption that lime is generally needed. Ideas such as this are not infrequently passed from one author to another until they become "general knowledge".

*Foliage Plants*, first published in 1973, is dedicated to the idea that the subtleties of form, texture and contrast attainable through careful use of plants chosen for their foliage alone are some of the highest points of good gardening. This is, again, a superbly illustrated book from which one can learn much by merely reading the captions but would be much the wiser to carefully read the whole book several times.

In order not to leave everyone in the depths of despair because these three wonderful books are not readily available, I will just mention that Capability's also has *The Adventurous Gardener*, a 1983 offering. This book is a lovely random walk through the subject of gardening as seen by Christopher Lloyd. It is one of those delightful books that you can begin reading at any place and enjoy enormously, however much time you can give to it. I think that one of the best ideas in the whole book is that we should not mourn a plant that dies - perhaps something else would look better in that place anyway and sometimes it might even be a good idea to assist Mother Nature in her efforts at taking backer her own.

Also newly available to the U.S. market this spring are five of Margery Fish's eight books. Reissued in paperback by Faber and Faber, these fine volumes should be available through any bookstore - ask to order them if you don't find them among the usual worthless offerings (which you probably won't!) Margery Fish came late to gardening when at the age of 44 she and her husband bought the house and grounds at East Lambrook which were to become so famous.

Her first book, *We made a Garden* chronicles the evolution from abandoned ruin to the magnificence of the ultimate "cottage garden". Written in a warm, engaging style, it makes for fascinating reading for either the gardener or the person merely interested in how other people live. The interaction between this woman who was to become one of the doyens of English Gardening and her tyrannical husband who often made her move plants that she had placed where he didn't want them or even made her get rid of them entirely is quite intriguing. No doubt some of his influence was beneficial, but he was rigidly opinionated and still stuck at the two-months-of-grant-effect stage of gardening. On the other hand, Margery Fish quickly became interested in plants themselves and in the idea of producing a continuous, though perhaps subtle, display.

*Cottage Garden Flowers* covers Mrs. Fish's interest in those plants traditionally grown but which she considered in danger of disappearing because of the increasing lack of available labor and the trend toward "no maintenance" gardening. While most of the plants she discusses could be classed as perennials, she also includes a chapter on trees and shrubs as well as one on those plants likely to be residents of cottage windows and doorsteps.

In a period when an ever-increasing number of books deal with shade gardening, Margery Fish's *Gardening in the Shade* remains a classic. As everyone surely knows by now, there are many different kinds of shade, each of which can provide adequate conditions for a great variety of plant life. There were very few items leaves or variegation need sun to produce this color, there are fully as many that need shade to protect it. A great many things will bloom quite well in some shade and are often the more graceful for it. Another point to remember is that if a plant either needs shade or does fairly well in shade in England, it will really need shade in North Carolina and perhaps do really well here in shade.

For anyone who would like to find something besides ivy or grass to cloth areas that don't lend themselves to intensive cultivation, there is *Ground Cover Plants*. This book covers every conceivable situation and suggests many quite unorthodox plants to sue for ground covering.

A subject dear to my own heart is covered in A Flower for Every Day. Many people just don't realize that especially here in North Carolina (as those who have read Elizabeth Lawrence's Gardens in Winter will know), a garden can have something in bloom almost everyday. Except for those brief periods when the temperature does not rise above freezing during the day during which even the most intrepid flower is thrown into suspended animation, by careful selection, we can have something blooming. Mrs. Fish treats the subject month by month and offers a tremendous number of suggestions.

#### New Catalogs and Plant Sources of Interest

During the Atlanta meeting of the American Rhododendron Society I discovered a fairly new and very exciting new nursery that also sells by mail-order. Mr. Don Jacobs of ECO-GARDENS, P.O. Box 1227, Decatur, GA 30031 (404-294-6468) has assembled a fascinating mix of rare S.E.U.S. native plants as well as many exotics from Asia. Plants are reasonably priced at \$2-10 for most. The list includes ferns, bulbs, herbaceous perennials, many woodies, a fine selection of aquatic materials for pools, and a nice listing of bulbs. A sampling of some choice hard-to-find goodies: *Clitoria mariana*, *Rohdea japonica*, *Shortia galacifolia*, *Enkianthus perulartus*, *Rhapidophyllum hystrix*, *Sarracenia leucophylla*, *Taiwania cryptomerioides*, *Helleborus lividus* var. *corsicus*, *Edgeworthia papyrifera* (3 cultivars !!!), and *Thujopsis dolobrata* 'Variegata'. He also writes a newsletter "Eco-Garden Reports" full of interesting observations on climate, plant performances and his travels. A most welcome addition to the nursery world.

I recently had my first look at a catalog of rhododendrons and azaleas from Hillside Rhododendron Gardens, 2353 Hwy 34, Manasquan, NJ 908736 (201-528-8007). Hundreds of cultivars including many Dexter hybrids and Tyler-Swarthmore Hybrids.

Another new mail order catalog I've not seen before which emphasizes rock garden plants and wildflowers is Owl Ridge Alpines, 5421 Whipple Lake Road, Clarkston, MI 48016 (313-394-0158). Not a large list (perhaps 150 items) or any extreme rarities, but a good list with very reasonable prices - \$1-3@. Some items - 17 Primulas, 3 Gentians, 10 Phlox, the giant grass *Miscanthus sacchariflorus* and a few woodies like *Berberis koreana*, *Stephandra incisa*, and *Thuja occidentalis* 'Ellwangerana Aurea'.

While visiting in Texas it was enjoyable to run into friends from the past who have started a nursery with two interesting but very dissimilar groups of plants. Mike Shoupe and Tommy Adams are growing a wide range of Texas or S.W.U.S. plants - mostly larger containers for local Texas sales; but they do have a list of liners for sale that includes many hard-to-find things such as the Texas Persimmon and Mexican Baldcypress. A newer phase of their business is antique and historic roses for mail-order sales. They have a beautiful catalog with many color photos available from THE ANTIQUE ROSE EMPORIUM, Rt.. 5, Box 143, Brehnam, TX 77833 (409-836-9051). They carry over 100 different roses - species and many cultivars dating to the 1700-1800's. They are one of the few firms in the U.S. growing own-root (not grafted) plants which is most desirable as they perform so much better. All plants are reasonably priced at \$5 and \$6. I must admit to a strong personal distaste for roses (blush, blush), but I was most impressed with the potentials for many of these. The 'Petite Pink Scotch' rose knocked me out with its potential for mass commercial plantings as a medium height groundcover to 2-3'. It has evergreen (to 0oF) foliage - delicately cut and dark, glossy green, grows rapidly and makes a dense compact plant. Very handsome just for its foliage, and has pink flowers to boot. Ironically, it was originally discovered growing in a 1750's garden of a plantation home on the Cape Fear River near Wilmington, N.C. Try one.

It's time to be ordering garden bulbs for fall planting and a source that has greatly expanded their listing into the unusual is JOHN D. LYON, INC., 143 Alewife Brook Parkway, Cambridge, MA 02140 (617-876-3705). Their fall list just wiped me out with many things I've never seen before in the U.S. I bought some of these items at the Wisely Gardens Nursery in England in the fall of '81 and considered it a rare privilege then. A choice list of 28 rare crocus including 8 of the fall blooming ones, Alliums (4), Anemones (5), Fritillarias (7!!), many bulbous iris, narcissus, tulips and other things. Prices vary with variety, but over half the items are 50¢ or less and they top at \$10.50 for *Tecophilium cyanocrocus*, a rare blue Chilean bulb for alpine house pot culture. I can think of no way to have more fun spending \$10 than to pick 15 goodies from this list. You're going to see many of these this fall and next spring at the arboretum in Larry's rock garden and the beds in front of M.K.'s lath house.

At the excellent American Daffodil Society show held at the UNC Botanical Garden this spring I obtained a list of sources for daffodils if one wants to get into this world of hundreds of cultivars beyond the dozen or so normally seen in retail market.

Broadleigh Gardens Mary Mattison van Schaik

Barr House, Bishops Hull Cavendish, VT 05142

Taunton, Somerset

TA41AE England Melrose Gardens

309 Best Road South

Carncairn Daffodils Ltd. Stockton, CA 95205

Carncairn Lodge, Broughshane,

Ballymena, Co. Antrim, McClure & Zimmerman

BT437HF Northern Ireland Quality Flower Bulb Brokers

1422 W. Thorndale

Rathowen Daffodils Chicago, IL 60660

Knowehead, Dergmoney, Omagh, (carry books on bulbs,

County Tyrone, Northern Ireland source for *Arum italicum* also)

P. deJagen & Sons, Inc. Avon Bulbs

P.O. Box 100 Bathford, Bath

Brewster, NY 10509 England BA1 8EB

(800-343-3966 Hubbard, Or 97032

(\$3.00 catalog, deductible)

John Scheepers, Inc.

63 Wall Street

New York, NY 10005

212422-1177

I include in this section a place to visit to see plants in N.C. though I don't believe they actually sell anything. I was given a brochure on Perry's Water Gardens in Cowee Valley near Franklin, N.C. It is an area of 16 sunken aquatic gardens covering about 2 acres and displaying a wide variety of water lilies, lotus, fancy fish, and other garden flowers. To get there - go north from Franklin on Rt. 28 to the Cowee Baptist Church; just beyond the church turn right on Cowee Creek Rd. and go 2 miles; turn left and follow signs (Rt. 4, Box 437, Franklin, N.C. 28734, 704-524-2937). There is no admission and it is supported by public donations.

New Plants Received in the NCSU Arboretum (now the JC Raulston Arboretum) - Jan-July 1984

With plants now being brought in separately by 4 people - records are also scattered at the moment. The following list (and that back in the lath house section) represents only about two-thirds of the recent acquisitions. We have spent much of June and July in mapping the arboretum and inventorying the nurseries. Hopefully we will have a new computer (oh agony!) for our arboretum inventory by September - and my shakey resolve at present is to have the next issue of the newsletter as a complete updated record of the collection holdings (not believing for a minute I'll ever manage it as terrified as I am of those whining and blinking contraptions). So anyway - here are some of our new goodies.

Narcissus Sweetness, Little Beauty, Sugar Bush, Erlicheen, N. recurvus, Sun Chariot, Ice Follies, Fireproof, Valdrome, Yankee Clipper, Pueblo, Shah, Scilly White, Orange Queen, Twink, Music Hall, Cragford, Ceylon, Congress, Matador, Polar Ice, Zircon, Actaea, Viking, Martha Washington, Nance Gollam, Unique, Chanterelle, Lauren's Koster, Water Perry, Sun Dance

Narine hirsuta, flexuosa alba, bowdenii Manina, undulata, bowdenii wellsii, bowdenii

Fenwick, forbesii, angustifolia, platypetala

Iris tridentata, unguicularis, lactea, delavayi, isetosa, virginica, sanguinia, spuria, hookeri

Hamamelis flavopurpureus, Jelena X Intermedia, Primevera, Sandra

Pinus densiflora 'Alice Verkade', griffithii 'Zebrina', pumila 'Dwarf Blue'

Cham, Pisifera Filifera Aurea Nana, Gold

Arisaema consanguineum, draontium, flavum, griffithii, ringens, speciosum

Abies coahuilensis, concolor, lasiocarpa, pinsapo glauca, religiosa

Cupressus bakeri, duclouxiana, macnabiana, macrocarpa, sargentii

Eucalyptus archeri, gunnii, nicholii, niphophila, pauciflora, perriniana, stellulata, viminalis

Pinus armandii, attenuata, balfouriana, cembroides monophylla, coulteri, durangensis, engelmannii, gerardiana, koraiensis, lambertiana, leucodermis, massoniana, monticola, nelsonii, pinceana, pumila, rudis, sabiniana, sibirica, torreyana, washoensis, morrisonicola, taiwanensis, elliotii, contorta

Ilex opaca cvs. 'Lampost', 'Old Heavy Berry', 'Farage', 'Longwood', 'Janice Arlene', 'Dr. Kassab', 'St. mary's', 'Menantica', 'Millville', 'Jersey Princess', 'Jersey Knight'

*Penstemon caepsitosus*, Claude Barr Form, *frut. serratus* 'Holly', *rupicola* 'Diamond Lake'

*Vancouveria chrysantha*, *hexandra*, *planipetala*

*Zauschneria californica* 'Etteri', *alba*

*Juniperus horizontalis* cultivars, 'Admirabilis', 'Adpressa', 'Andorra Compact', 'Argentea', 'Big Sky', 'Blue Acres', 'Coast of Maine', 'Dunvegan Blue', 'Emerald Isle', 'Emerson', 'Eximia', 'Filicina', 'Girard', 'Glomerata', 'Green Acres', 'Hermit', 'Humilis', 'Jade River', 'Jade Spreader', 'Livida', 'Livingston', 'Motherlode' ('Golden Wiltonii'), 'Number 1', 'Number 2', 'Planifolia', 'Plumosa', 'Pondera Copper', 'Prostrata', 'Prostrata Glauca', 'Repens', 'Silver Sheen', 'Slow Blue', 'Tures', 'Venusta', 'Watnong', 'Wilms'

*Festuca* 'Solling', *Sceparia*, *Sceparia* 'Pic Carlit'

*Sempervivum* 'Circus', 'Glowing Embers', 'Stuffed Olive', 'Leocadia's Nephew', 'Mars', 'Cherry Vanilla', 'Risque', 'Rotundi', 'Alcihoe', 'Shirley Moore', 'Serendipity', 'Sam ise', 'C. William', 'Strawberry Fields', *davisii* (Corah Gorge, Turkey), 'Bedazzles', 'Edge of Night'

*Jovibarba heuffelii* 'Vrana', 'Geranimo', 'Hot Lips', 'Torride Zone'

*Tusga dumosa* *Berberis wilsoni*

*Tsuga chinensis* *Pterocarya tonkinensis*

*Taiwania cryptomerioides* *Chimonantus nitnes*

*Mahonia mairei* *Hovenia acerba*

*Cryptomeria kawai* *Chamaecyparis nootkatensis* 'pendula'

*Larix decidua* 'pendula' *Lespedeza bicolor*

*Sequoiadendron giganteum* 'Watmong' *Lonicera X* 'Dropmore Scarlet'

Blue' *Sassafras albidum*

*Cedrus deodara pygmea* *Tamarix* 'Summer Glow'

*Cephalotaxus sinensis* *Xanthoceras sorbifolia*

*Daphne X mantensiana* 'Manten' *Lonicera periclyneum belgica*, *serotina*

*Abies kawakamii* *Camellia sasanqua* 'Setsugekka'

*Picea morrisonicol* *Magnolia X Loebneri* 'Merrill'

*Eriobotrya deflexa* *Spiraea nipponica* 'Snowmound'

*Myrica nana* *Achillea ageratifolia*

*Aspidistra elatiro* 'Milky Way' *Anemone nemorosa robinsoniana*

*Liriodendron tulipifera aureo* - *Antennaria microphylla*

*marginatum*

*Lilium sulphureum* *Artemisia schmidtiana nana*

*Chaemaecyparis obtucia variegated* *Calypso bulbosa*

*Juniperus conferta* 'Silver Mist' *Celsioverascum* 'Golden Wings'

*Abies cephalonica* *Chrysanthemum atlanticum*, *weyrichii*

*Chamaecyparis thyoides* 'Little Jamie' *Cyclamen coum album*, *fatrense*

(Rezek) *Dodecatheon meadia*

*Daphne burkwoodii* 'Lawrenirii' *Erysimum kotschyanum*

*Ophiopogon ohwii* *Gentiana asclepiadea*, *newberryi*

*Daphniphyllum macropodium humole* *Xylosma congestum*

*X Cupressocyparis leylandii* 'Robinson's' *Chamaecyparis taiwanensis*

Gold *Strnvaesia niitakayamensis*

Punica granatum variegated Quercus myrsinaefolia

Trachelospermum asiaticus Nandina domestica 'Okame'

Juniperus sabina 'Blue Forest' Elaeagnus pungens 'Hosaba Fukurin'

Cercis racemosa Euonymus bengeanus

Acer palmatum 'Margaret B' Heptacodium jasminoides

Rhododendron falconeri Rhododendron fictolacteum

Viburnum luzonicum Fabus crenata

Tuptygium regeli Carpinus laxiflora

Ilex latifolia - dwarf female Emmenoptera henryi

Acer mono Schisandra sphenanthera

Pieris amamiana Spiraea japonica

Weigelia middendoriana Euonymus oxyphyllus

Lindera citriodora Euonymus europea Haematocarpa

Viburnum propinquum, opulus Clethra barbinervis 'Issai'

fruitoluten

bodnantense 'Pink Dawn' Picea pungens 'Fat Albert', 'Iseli Fastigate'

Euonymus fortunei 'Sunspot' Cercis chingii, racemosa

Acer flabellatum Aesculus turbinata

Betula maximowiziana Juglans ailanthifolia

Alnus japonica Iris ensata var. spontanea

Rudbeckia laciniata Golden Glow' Rosa stellata

Acer forrestii, pentaphylla, distylum Oenothera 'Fireworks'

Taxus Brownii, Densiflora, Hatfield, Taxodium disticum 'Pendula'

Hicksi Spiranthes cernua, sinensis

Epimedium koreanum Hymenocallis occidentalis

Corydalis ambigua Astermoea mongolica

Cassia hebecarpa Corydalis ambigua

Lilium michauxii Erythronium 'Pagoda'

Abrutus glandulosa Amorpha canescens

Comptonia peregrina Castanea dentata

Elaeagnus angustifolia Diervilla lonicera

Forsythia X 'Tremonia' Evodia danielli, hupehensis

Indigofera gerardiana Halesia monticola

Jasminum humile 'Revolutum'

Lilium pardalinum, parvum Polygala chamaebuxus rhodoptera

Paulownia kawakamii Rhododendron (azalea) 'Pink Pancake'

Schisandra chinensis Saxifraga (B) 'Foster's Gold'

Torreya californica Soldanella carpatica

Acer palmatum 'Fireglow' Verbascum 'Letitia' (dumulosum X spinosum)

Arabia elata aureovariegata,

argenteovariegata

Chaenomeles japonica 'Low n White' Saxifraga 'Mossy Sprite'

Raphiolepis indica 'White Enchantress' Draba repens

Acaena inermis Sedum ternatum 'White Waters'

Androsace lanuginosa Malvastrum lateritum

Anemonella thal. 'Schoaf's Dbl. Hypoxis hirsuta

Pink' Lysimachia japonica minutissima

Armeria caespitosa 'Bevan's Var.' Patrinia triloba var. palmata

Bellium minutum Paronychia serphyllifolia

Campanula elatines fenestrelata Pieris japonica 'Bisbee Dwarf'

Chiastophyllum oppositifolium Potentilla cinerea

Clematis alpina, integrifolia Salix hylomatica, yezo-alpina

Dianthus alpinus 'Bull's Eye' Selaginella draussiana, chartreuse form

Dryas octopetala Solidago minutissima

Genista dalmatica Fern: Adiantum venustum

Geranium phaeum, subcaulescens Silene 'Robin White Breast'

Hypericum cerastioides, yakusimana Aster alpinus

Leucothoe davisiae Hypericum repens

Mimulus cupreus 'Whitcroft Scarlet' Erigeron 'Pink Jewel'

Oxalis adenophylla

Phlix 'Tangelo'

The list totals roughly 375 new accessions of species or cultivars added to the arboretum collections from January through July 1984.