NC STATE UNIVERSITY

JC Raulston Arboretum

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J. C. Raulston

CONTENTS PAGE

ANNOUNCEMENTS AND COMING EVENTS

Late again - one more time as usual. Good intentions melted away in the pressure of things awaiting me in a huge pile as I returned from Korea and plunged into a semester of teaching three weeks behind my students - racing to catch up with them. A sincere thank you to Dr. Bilderback who very graciously volunteered to teach my course for me in my absence to allow me to stay in Korea for a few more weeks. When classes are in session - a course seems to occupy all your time regardless of the number of students or hours in class. Spring has involved the same problem plus others. In addition to campus work, for the first time I have been teaching the Physiology of Landscape Plants course at night in Wilmington - meeting a new group of wonderful people with varied ties into the plant industries. More about an exciting project with a new arboretum there in the next newsletter. Spring has been (and continues to be for four more weeks) a continual blur with far too much overcommittment of outside speaking engagements. They take time - but are the best source of funds to support the arboretum so it is hard to turn them down. They do have pluses of getting to see programs elsewhere and the chance to discover new people, nurseries, etc. which can help the program here. Again in the future newsletter I'll be discussing some of these new contracts. This letter is going out in a rush - in order to announce a speaking engagement next week and using that as an incentive to get something together. You're looking at a 6-hour cut and paste job of much less detail than other recent newsletters. We'll just attribute it to #13 newsletter complications.

On the good news side - after sitting and looking at the computer on my desk with distrust and fear for 14 months, in January I finally broke through some sort of barrier and began to use it for correspondence and writing. One very good result is an improved ability to write more easily which has been my biggest professional barrier. For the first time in my career I was able to write and submit articles to editors for publication - a major breakthrough. So future newsletters should hopefully flow more easily. In looking through our membership list of mostly amateur hobbyists, I see only a couple of people who would be receiving either The Public Garden from AABGA or the IPPS Proceedings so I am including in this newsletter the two articles recently completed.

April 11 (Friday) Slide Show - Special Guest Lecture. Mr. Kris Jarantoski, the assistant director of the Chicago Botanic Garden, will be visiting North Carolina to see various gardens and has kindly agreed to present a lecture on the Chicago Botanic Garden for the Friends of the NCSU Arboretum (now the JC Raulston Arboretum). This garden has the most active expansion and development program in the U.S. at present with many projects in active installation. Do plan to attend this most exciting program at 7:30 p.m. in room 159, Kilgore Hall.

May 3 (Saturday) - "Rip, Snort, and Tear" Day at the Arboretum - HELP NEEDED!!. Unfortunately almost all weekends have been occupied all spring and our usual series of workdays have been impossible to schedule. This is my first open Saturday since January and I'm anxious to get fingers into the dirt (whoops, soil). We have a particularly major problem developing now with a violently aggressive bamboo grove romping across the arboretum. We want to fight it back to a certain line, dig a trench and lay a barrier to further growth to contain the beast. If you have either great energy available, or some major unresolved fury and anger you would like to release - we need

dozens of people willing to dig and remove bamboo runners from 8 - Noon. Would you be willing to dig an area 3' x 4' as a contribution for the garden? We won't even charge for the useful therapy benefits. Short of limited nuclear engagements this is the only way I know to handle the problem.

THE NCSU Arboretum (now the JC Raulston Arboretum) PROGRAM FOR INTRODUCTION OF PLANTS TO THE NURSERY/LANDSCAPE INDUSTRY

During 1975-76, the Department of Horticultural Science at North Carolina State University conducted an evaluation of the ornamentals/landscape program existing at that time and concluded major changes and additions were necessary to bring that program up to the nationally significant level of the fruit, vegetable, and floriculture programs in the department. More faculty and improved research, extension and teaching facilities were recommended; to include laboratory and storage facilities, a field nursery, sun and shade container nurseries, and an arboretum for plant evaluations and teaching. By 1980 eleven ornamentals/landscape faculty members were employed, all proposed facilities were developed and in use, and the arboretum development was progressing well.

A master plan for the NCSU Arboretum (now the JC Raulston Arboretum) was developed during 1976-77 as a final Masters of Landscape Architecture project by Mr. Fielding Scarborough, school and department approval were obtained to proceed with the concept, and an eight acre site on a university farm one mile from the Horticultural Science Department was obtained for use. Bed layout and planting of collections began in 1977 and peaked during the 1980-84 period when ca. one acre of planting area was prepared and 700-1000 species and cultivars of ornamental plants were acquired annually. By 1985 all eight acres were fully occupied and the collections reached ca. 5,000 taxa of perennial plants including over 340 genera of woody plants. During the summer ca. 400 cultivars of annual bedding plants are added.

The long range goal of the arboretum program is to affect the range and variety of plants produced and used in the N.C./southeastern U.S. nursery/landscape industry. Although an extremely rich flora of fine native plants exists in the state/region, and climatic conditions allow the growth of a wide range of exotic ornamental plants - particularly from Europe and eastern Asia; very few plants are commonly produced and available for commercial use in the southeastern U.S. (which for the purpose of this discussion will not include Florida). It is likely that ca. 40 species (plus the associated cultivars, e.g. of evergreen azalea, Camellia, Cornus florida, Ilex crenata, etc.) would comprise 90%+ (quantitatively) of the woody landscape plants of the southeast. There are many excellent public gardens in the southeast, but they have generally not focused on uncommon species or horticultural cultivars of ornamental woody plants to lead the public to greater awareness of potential plants that could be used. With the exception of the outstanding woody plant work done by Fred Galle of Callaway Gardens during 1953-79, the direction of most gardens has focused on historic garden reconstruction, native wildflowers and local flora, "show" gardens of already popular garden plants such as azalea, camellia, dogwood, and rose, or massive color displays of bedding plants. The best knowledge and experience of woody plants in the southeast rests with a handful of outstanding nursery plantsmen, e.g., Shadow Nursery, Tom Dodd Nursery, Woodlanders, etc. The best woody collections in N.C. are the Bartlett Arboretum near Charlotte and the Biltmore Estate at Asheville. Both are excellent collections, but the Bartlett Arboretum is not readily accessible for general public use, and the Biltmore collections were assembled mostly during the period 1895 to 1920 and are presently limited in the range of modern cultivars displayed. An active new replanting and development program will soon change the status of that collection.

Large scale foreign collecting expeditions have not been conducted by southern gardens and much of the material potentially adaptable to the southeast which was brought to the U.S. through northern institution expeditions perished in the colder climates before it could be repropagated and distributed to southern gardens. Agronomic field crops production has dominated administration thinking in southeastern agricultural universities and this traditional lack of support for ornamental programs has resulted in a scarcity of research and testing of landscape plants from the academic sources in this region. With the current intense pressure for basic research publishing in academia, it is unlikely new faculty could conceive such programs, survive and receive tenure with plant evaluation research anywhere in the U.S. today. There are no university-connected woody plant collections in the southeast equivalent to those of UC-Davis, the University of Washington, the University of Wisconsin, and Cornell University as examples.

Thus, there is little information available on the adaptability of uncommon plants for use in this region. Since most of the major woody plant collections are in northern areas and many writers base of information has come from that region, reference book after book focuses on winter hardiness of plants to determine how far north species will grow as the main adaptation factor; with almost no information published on how far south plants will survive in tolerating the low chilling hour accumulation, shorter photoperiods, and high summer temperatures of this region. With few public plantings to see to stimulate the public to use other plants, and little published adaptation information available to guide nurserymen or landscape architects to the use of other plants - it is a challenging task to promote uncommon or new woody plants to the public.

Two major factors generally determine acceptability and use of new plants (1) "awareness" of the characteristics, adaptability, and use potentials of the plant which comes from personal exposure to the plant or access to published information; and (2) a source of availability - for the grower a source of stock to use in propagation, and for the homeowner a retail source. Often a "which came first - the chicken or the egg" situation develops. Growers producing new plants say no one knows or will buy them; contractors say they can't find different plants or that they are only available in small quantities and small sizes; garden centers say they can't find plants and then if they do no one will buy them; yet consumers constantly say they can't find unusual plants to buy. Too often it ends up in a finger-pointing situation with different parts of the industry saying "it's all your fault". Plants are often widely publicized to the public at the time of naming and release by originators - creating demand before growers have a chance to build stock and have plants available for sale.

Then later when plants are available, the earlier publicity is forgotten and plants will not sell. Coordinated timing in production and publicity is often vital in acceptance. Sales of a new plant has a certain similarity to a nuclear reaction where there is a need to achieve a critical mass to be self-sustaining; once plants reach a certain level of availability and public use - they become self-selling.

The NCSU Arboretum (now the JC Raulston Arboretum) attempts to work across the board with small efforts each in a wide diversity of approaches to the overall problem. A selection of some of these efforts will be presented. Now that the collections have been assembled and evaluation of plant adaptability and usefulness is proceeding, movement of plants to the industry and public is handled in a variety of ways. Some of the various methods of distribution of plants in the arboretum plantings will be discussed first.

Each year a selection of plants from The NCSU Arboretum (now the JC Raulston Arboretum) is made for propagation and distribution to nurserymen at the August N.C. Association of Nurserymen Short Course at Asheville. This technique is used as a means of spreading new or uncommon plants through the state for further observation by individual growers with the thought that personal observation means more than simply hearing about a plant. As the plants develop at the growers location, they may become interested and begin to use them as stock plants and eventually add them to their commercial production. Selection of plants for this summer distribution has been based on ability of the plant to be propagated in midsummer when the department's propagation benches are normally empty and available for use, size of arboretum plants adequate to allow taking of 200-300 cuttings, and regional absence of the plant in the existing commercial industry. Plants chosen will vary in commercial potential with some having great sales/profitability value -others are curiosities or hobbyist collector items. Since the arboretum is young and most plants are small, one of the limitations has been finding enough plant species with plant size large enough to obtain the needed amount of cuttings. In the beginning, faster growing species predominated in distributions by necessity. Now as large numbers of species enter an adequate size range for propagation each year, more discrimination can be made in choosing a greater variety of choice material for distribution.

At the time of the meeting, 200-250 "gift-packs" are prepared with one plant each of 18-25 species and cultivars in a plastic bag. The bags and an accompanying information leaflet describing each plant, its use and propagation are distributed to growers at an arboretum display booth at the end of the two day meeting. Each year ca. 5000 plants are given away at the NCAN Short Course and this event has become an eagerly awaited point of the meeting. Distribution is on a first come-first serve basis which approaches the intensity of a January White Sale and normally lasts about 10 minutes. Ardisia japonica cultivars, Cunninghamia konishii, Juniperus rigida 'pendula', Lonicera sempervirens f. sulphurea, Pinckneya pubens, Rosa spinosissima 'Petite Pink', Sequoia sempervirens 'Albospicata', Thuja plicata 'Hogan', and Ulmus parvifolia 'Sempervirens' were among the 22 selections distributed in 1985 and illustrate the diversity of plants included: groundcovers, vines, shrubs and trees; deciduous and evergreen; broadleaf and conifer; native and exotic; relatively common (elsewhere) and extremely rare.

Commercial growers are also welcome at any time to come directly to the arboretum and collect propagation material to provide stock plants for their operations. We request that an appointment be made to coordinate which materials are to be taken and to explain collecting guidelines. Basically the rule is to not destroy the display value of the plant in form, shape or size. But in the case of plants we are particularly eager to get someone to produce, we may sometimes stub the entire plant to the ground to give them all the cuttings possible. This program has gradually expanded as awareness of the value of access to such materials has become recognized. At present an average of one or two growers a week on an annual basis (peaking at optimum collection times of mid-summer and late fall) are in the arboretum alone or with their crews collecting cuttings or seed. It is likely that ca. 100-150,000 cuttings are taken annually in this manner at present. It began with local growers only, but has expanded to those making special trips from distant areas of the state, and in 1985 we began to have out-of-state growers from as far as New Jersey, Tennessee, and Georgia come to observe material and gather cuttings.

A different version of this activity which has become a significant outlet happened through meeting the horticulturist of one of the largest property development firms in the southeast at a professional conference. The corporation is a rarity in promoting their extensive properties by use of superb intensive landscaping. They want to use choice and unusual plants but have difficulty in finding them in production. Upon learning of our program, they brought their major contract grower to the arboretum for a day of discussing various potential plants. Large quantities of cuttings were immediately taken to get items into production as soon as possible. Some of these plants had been promoted to many nurserymen for several years with no interest from the growers. But the architect liked the plants and their design potential, wanted them, and issued a contract to have them produced for the firm's own needs. Once in their landscapes, other firms may later have interest in growing the plants as well.

Most public gardens have great concerns, rightfully, about the potential for damage to plants, stealing of rarities, etc. associated with this type of grower access. To date our problems have been relatively small as people seem to value our willingness to share materials. Perhaps there is less need to steal something if it can be had by asking. There is the occasional problem that makes one wince - all the terminals cut from the entire Stewartia collection, the removal of all the scion wood from a weeping Cercidiphyllum, etc.; but the positive value of getting materials out is considered more important than becoming over-protective to the point of limiting legitimate activities. Only one person in a hundred causes such problems, whereas 99 benefit and help us toward our goal. Though difficult at times, we try to hold to the philosophy that if 10 plant species are damaged, they will regrow (or can be obtained again), and 4990 others remain to hold the public interest. And somewhere, that material taken does end up in the industry which, after all, is the main objective. (But it still hurts!)

The major problem in both of the above types of distribution is that growers often cannot afford the cost of taking the small amounts of propagation stock we have available to build numbers up to a commercial level necessary to be profitable. Things such as groundcovers which are needed by the hundred thousand to be commercially feasible, and slow growing materials become problems. A new approach for us with these materials is to send plants of promise to successful commercial tissue culture labs with the hope they can successfully learn to culture them, build numbers to commercial levels, and make them available to a wider range of growers much quicker. Some examples of plants currently with such firms include the Ardisia japonica groundcovers which have enormous potential for use in the southeast, and some outstanding slow growing and rare "collector" plants such as Nandina domestica 'San Gabriel' and Mahonia x 'Arthur Menzies' - which if available in larger numbers for stock plants, could readily be propagated by traditional methods.

Often just knowledge of where liners or plants of unusual materials can be obtained from commercial propagators is of benefit to encourage local producers to grow materials unusual in our area. To handle the many requests we get for such information, we have developed a 20-page "Catalogs of Choice, Rare, and Unusual Plants" which lists about 250 N.C. or mail order firms handling specialty plants. It is unfortunately very limited in coverage in comparison to what could be possible and to what is needed. A national or even regional computer indexed information service on where uncommon material is being grown would enormously increase consumption of such items.

Another approach has been adopted recently when interest or techniques available in the local state industry prevents production. If a plant is promoted for 4-6 years with no local acceptance (always preferring to work with and help the N.C. industry first) - major growers or specialists interested in specific groups of plants across the U.S. are contacted and the specific plant is promoted and offered to them. These offers have almost always been eagerly accepted. Examples of local interest resistance is best shown by a fruitless sweet gum - Liquidambar styraciflua f. rotundiloba. Sweet gum is so common as a native species in N.C. and negative reaction to the plant because of the fruit is so intensely strong that no one will possibly grow the plant in their nursery just as a matter of principle. However, in other areas of the U.S. where the species is valued, growers will produce it. Budwood is now being shipped to other areas for production. Another plant cultivar which has had no local grower interest is a highly sculptural contorted Morus - which 3 major nurseries in the Pacific northwest, the midwest, and the northeast have recently obtained from us and are beginning to grow. Few growers in N.C. bud and graft plants. For many years superb unique specimens of genetic dwarf loblolly pines, Pinus taeda, have existed in the arboretum. They are admired by all who see them and have great commercial potential - but there are no commercial conifer grafters in N.C. to produce them. Scions have been distributed to Texas and Pennsylvania grafters to begin work with these plants. The Japanese apricot, Prunus mume, has been one of the plants most heavily promoted by the arboretum as a superb new ornamental for the southeast over the last seven years - and finally last year one grower in Georgia began to get budwood to produce this outstanding plant.

Budget and labor constraints prevent an extensive mail service for delivery of requested materials across the country, but this part of the program is also increasing annually and so far we have managed to handle and service all mail requests for shipment of cuttings and scions to growers and other institutions across the U.S., as well as a small amount overseas.

Several thousand plants are also propagated and given to members of the Friends of The NCSU Arboretum (now the JC Raulston Arboretum) support organization annually, and to share with individual professional visitors who come to the garden from across the country. Though these do not directly enter the commercial world, they end up in the public eye and can create some demand by influencing neighbors and friends to request them from commercial sources. A major difference in the overall NCSU Arboretum (now the JC Raulston Arboretum) distribution program from most others existing around the country is that university policy strictly forbids selling of any materials to generate funds for support of the program - so all plants and cuttings are distributed free.

The other aspect of acceptability, of "awareness" of the plant and its potentials, is equally important and in reality occupies much more time and energy than does the plant propagation and distribution work per se. Even more varied techniques are tried in order to reach different audiences and to have impact through an assortment of mechanisms - all forms of "education". Since the arboretum began, about 275 lectures to 23,000 people have been made on the arboretum program, recommended plants, botanic garden and arboreta collections, plant origins and uses. Audiences have varied from small local garden clubs (where once only 6 people showed up because of a competing basketball game on TV - this is ACC country!) to the ISHS Congress in Hamburg, Germany.

Formal teaching in three university courses offers ways to promote new plant ideas to the students who will form the next generation of producers and consumers in the plant industries. In teaching "Nursery Production and Management" there are many ways to introduce the concepts of new plants. Students can work out production schedules and profitability of such crops compared to standard items; new propagation schemes and sources of new materials can be covered. One of the first collections installed in the arboretum in 1977 was a selection of dwarf conifers. It was commonly believed "it is too hot and they won't grow in the south"; there were no public plantings in the piedmont or coastal plain, and no commercial growers anywhere in the state. A student in the nursery production course at that time became interested in the varied conifers. The firm he later began, Yadkin Valley Nursery, became the first large scale grower of dwarf conifers in the state. After 7 years, other growers have followed and now the plants can be seen throughout the state. In the "Garden Center Management" course we discuss the psychology of why people buy, how to promote unusual materials, sources, display techniques, etc.

With my joint teaching appointment in both the School of Agriculture and Life Sciences and the School of Design at NCSU, both production students and landscape architects - the professional consumers - can be reached. A rather unique graduate course entitled "Physiology of Landscape Plants" is taken not only by horticultural students, but also by most Master of Landscape Architecture

students. The course covers climatology, adaptation methods and reasons plants succeed or fail in commercial use. It provides a good technical yet practical understanding of many factors such as heat, drought, cold, soils, salts, etc. Students in this course spend many laboratory hours in the arboretum - not learning the traditional plant material course content of taxonomy and identification (which is taught in two other required courses), but more on plant origins, adaptations, problem symptoms, correct site, etc. During this exposure, many new and unusual plants not taught in the required courses are shown as examples - "this rare plant (e.g. Cornus canadensis) is considered impossible to grow in the south, but the success of the one you are looking at is due to _____". So future designers have a beginning awareness of the potentials of use of a wider range of plants for design - something missing in many landscape architectural programs in the U.S. today. Hopefully they will look for and use such plants when they become professionals, and hopefully by then their companion horticultural students will have started their nurseries and will be producing those plants for sale.

To reach industry professionals who may not have had access to such course information when they were in school, or who may have been self-trained without college experience - a program of taking these courses out to various cities throughout the state has been conducted since the arboretum was begun. To date the courses have been taught at night in Asheville, Charlotte, Salisbury, Greensboro, and Wilmington. A typical course is taught as three hours of lecture one night a week for 10 to 15 weeks. Over 600 nurserymen, landscape contractors, and landscape architects all over the state have taken these courses and were trained in the awareness of potential new crops - from sources, to cultural requirements, production methods, adaptability, etc. Teaching such professionals is a stimulating experience as they bring a much greater awareness of the value of such information with them, and consequently much more enthusiasm and eagerness to learn than the typical college student. When you have a carload of people drive three hours over winding mountain roads to get to a Friday night class and listen to a lecture from 7 until 10 p.m. and then drive three hours to get home - for 15 weeks - there is a definite eagerness for information and appreciation for its availability. (And a big motivation to the teacher as well, which is needed since a course offering in Asheville - which has been done 5 times - requires ca. 120 hours of driving to teach.) Most of the innovative nursery/landscape leaders of the state have now taken these courses -some several times. By working so closely with such people for so long, close friendships are formed which lead to greater awareness of the arboretum program and acceptance of the plants coming from it.

An excellent example of the interest that has been built is shown by the N.C. nursery/landscape industry sponsorship to allow The NCSU Arboretum (now the JC Raulston Arboretum) to participate in the U.S. National Arboretum's 1985 Korean collecting expedition. Normally, the major gardens who frequently do such expeditions simply appropriate money from their budget and send someone to participate. The cost of joining such a program is four times our total annual budget and totally out of the question to even consider. When the industry heard an invitation had been extended to us, individuals spread the word and within weeks the money had been raised from the state nurserymen, landscape contractors, and landscape architects and dozens of individual businesses. It is likely the first time in the U.S. that landscape architects were involved in significant fund raising activities to sponsor a foreign plant collecting expedition, with such a diverse and numerous group of associated donors.

One of the most effective ways to spread information efficiently is through publications. Unfortunately this has been by far the weakest link in our program due to a severe writers block from fear of editorial criticism. Until now, in the last ten years only one paper on the arboretum has been published through normal public media outlets. Somehow this problem does not exist if no "approval" must be met, so we have turned to a lengthy newsletter to share our activities and evaluations. This is provided to supporters in the Friends of the NCSU Arboretum (now the JC Raulston Arboretum) membership program and to others in various plant fields who find it of value. It is a useful, though very small effort, and much more publishing very badly needs to be done.

Hearing of new plants, and even seeing slides of new plants brings one level of awareness and understanding, but to really "know" plants and get excited about them a person must have access to see and "experience" them. At the arboretum itself, visits by individuals and groups constitute the most direct way of learning of new plants and their potentials. The arboretum is open 8 a.m. until dark 7 days a week for public visitors. Self-guiding tour sheets feature seasonal plants of interest and introduce visitors to unusual materials. Many groups from kindergarten classes to retirement clubs, students, growers, etc. request guided tours and a group of volunteers now provide this service and disperse information. Regularly scheduled tours are conducted each Sunday during the spring-fall season. An estimated 15,000 visitors per year tour the arboretum.

Each year a selection of 25-40 attractive newly-received plants is made from our container nursery, and the plants are taken to the state nurserymen's short course mentioned earlier as a display in the trade show. A 6-8 page detailed information handout is prepared and distributed giving details about the plants on display to stimulate interest in plants that will be in the arboretum in the future. A similar but larger display was prepared for the 1985 IPPS southeast regional meeting with much interest from participants and the development of a number of new contacts with people interested in producing our materials.

An important phase of the introduction program has been to promote distribution of plants to other public plantings throughout the state for local impact. Many groups which have traveled some distance to visit the NCSU Arboretum (now the JC Raulston Arboretum) become aware of the value of such a facility and return home to work toward establishment of plant collections for their own location. Much time has been spent with advising groups on how to develop an arboretum - concepts, planning guidelines, ways to proceed, etc. At present we are working with several high schools, six community colleges and five cities in N.C. in planning and developing new arboreta. The largest and potentially most significant project is the new 300+ acre state-financed Western N.C. Arboretum currently in the early design and planning stage. Frequent trips are also made to other states across the U.S. to provide advice on arboreta establishment from experience gained in developing the NCSU Arboretum (now the JC Raulston Arboretum). There seems to be a very strong need nationally for publication of a good beginners guide on basic things organizations should consider in conceiving and

beginning new plant collections. Perhaps this should be a future service project of AABGA to commission and sponsor such a book? As new N.C. arboreta reach planting stages, plants are readily shared from The NCSU Arboretum (now the JC Raulston Arboretum) with as many as 300 species at a time going out in a shipment. The NCSU Arboretum (now the JC Raulston Arboretum) is in reality simply a collection point - with no likely long-range life of its own; a place where materials can be brought into the state from around the world, assembled into collections, and redistributed either to the industry or other gardens for more permanent life.

Another concept of breaking through to public awareness is to get plants placed in highly visible locations where the majority of people who never go to public gardens, or who do not go in the off-season periods and thus miss certain plants at their peak interest can become aware of plants normally not seen or used. A long-time goal is to get Hamamelis x intermedia cultivars in use in N.C. - they are not grown or used commercially though they grow and flower exceptionally well in this climate. Few visitors are in the arboretum (or garden centers) when they bloom, and demand and appreciation remains at near zero. Last year a source of inexpensive grafted plants was found in New Zealand and an order for 125 plants was made. These plants were then distributed at cost to various gardens, garden centers, and individuals to stimulate their interest. By publicizing this procedure as much as possible, more interest was created and a second order for 700 plants has been made for 1986. (These orders are handled personally with private funds since no university plants can be sold to recoup costs.) Among other outlets, we convinced the new city forester in Raleigh to obtain 75 plants to place on the main downtown pedestrian mall and on medians of major city highway arteries where thousands of "non-plant" people will see them blooming in January - February. A small percent will admire them and begin to ask at garden centers, who will ask growers for them, and they will eventually be produced. Other plants will go to other "people-places" - the flea market at the state fairgrounds, the state art museum, etc. An idea which I suspect could get the best possible public awareness, but so far unachieved, is to have one planted at every McDonald's restaurant in town. We all have to have goals to shoot for I suppose - mine are sometimes strange. A similar distribution of 150 Prunus mume grown at the arboretum last year was made to get that plant also in the public eye. In one sense, an arboretum is one of the poorest places in the world to create major new markets. Usually only people who already love plants are there so we end up "preaching to the true-believers" when we really need more "missionary work with the heathens".

Each stage of development brings rewards as well as its own set of problems to overcome. Establishing the arboretum and building collections presented one set of challenges now mostly in the past; the education and distribution phase another set of challenges which continue but have settled into somewhat routine programs. Commercial industry acceptability and "success" of the program seem to be occurring now; and ironically may ultimately be the greatest challenge to handle. Those that have used the program return - usually wanting increased and improved service; and work spreads to a wider range of people and groups who also want to be involved. "Success breeds success". All the hopes envisioned for the program when it was conceived in 1976 seem to be coming into reality a decade later. But Franklin stated.. "If we could have half of our wishes; we would double our troubles"... and a disturbing image from the children's nursery story of "killing the goose that laid the golden egg" also comes to mind. At present only 0.3 FTE of faculty time, 1.0 FTE of technician time and ca. $4000 a year from the university supports the entire arboretum acquisition, development, maintenance, and distribution program, plus whatever assistance can be obtained from donations and volunteer help. The program success brings increased pressure for more service each year from the available fixed resources and the future will require evolution to handle the new needs. But for the moment, there is great pleasure and reward in the feeling of being useful and having success in making an impact on plants entering the landscape industry. (Though one could readily give up having people call at home at 11 p.m. asking where they can buy a Leyland cypress for their front yard.)

TEN OUTSTANDING FLOWERING TREES FOR POTENTIAL SOUTHEASTERN U. S. PRODUCTION

Flowering trees are one of the most important visible parts of the landscape adding color and drama against a green background. The southeastern U. S. is climatically suited for an enormous range of species and cultivars of flowering trees, yet relatively few taxa have become important in the nursery/landscape industries of this region. Probably 90% or more of the flowering trees now being used would be included in the following small list Cercis canadensis; Cornus florida & cvs.; Koelreuteria paniculata; Lagerstroemia indica cvs.; Magnolia - stellata, X soulangiana, and grandiflora; Malus cvs.: Prunus subhirtella; and Pyrus calleryana cvs. Selecting just 10 recommended trees for this paper is a difficult task from the wide number of potential candidates available. Final selection of the ones presented was based on observation of plants in The NCSU Arboretum (now the JC Raulston Arboretum) as being well-adapted for use in this area of hot, humid summers and survival without damage in the recent years of record cold temperatures (to -7 F in 1985); and their almost total absence of any current commercial production or use in this region. They are presented in alphabetical order.

1. Aralia elata 'Aureovariegata' and 'Variegata'. A very coarse-textured large shrub or small tree reaching 10-15' in height and providing a spectacular tropical appearance in the landscape. The leaves can reach 2-3' in width and length and these two variegated forms are showy throughout the summer. Though the yellow and white variegations are distinctly different in cooler climates; in the heat of the southeast, both fade to the same pure white variegation during summer. Large panicles of white flowers appear in the terminals of the plant in early autumn and it will remain in flower nearly a month. It is considered a connoisseur plant in Europe due to the rarity of stock plants and the difficulty in propagating it. Only a few specialty nurseries in Germany, Holland, and England offer it - and at very high cost. It is patch- or chip-budded on to Aralia elata understock which can be produced from seed or by division of the rhizomatous root system which suckers readily. Last year, we successfully cleft grafted the white variegated form on a plant of Aralia spinosa, the native Hercules' Club or Devil's Walking stick, which was growing in the arboretum. The major limitations to commercial production would be finding scion wood to use in budding, and learning to do the budding successfully.

2. Cercis. The eastern redbud, Cercis canadensis, is an extremely popular native small deciduous tree easily grown from seed and widespread in the nursery trade. Several other redbuds superior to the species eastern redbud are rare or totally unavailable in commercial production due to propagation difficulties. C. canadensis 'Forest Pansy' is presently being produced in the southeast in small quantities but market popularity warrants greatly increased production volume. 'Forest Pansy' is noted for its dark purple foliage which emerges almost purple-black under cool spring conditions. In climates with cool night temperatures this dark color can be retained through the summer until autumn; however, in the warm night conditions in the southeastern U. S. the color will fade to species green by mid-summer with the speed of change dependent on the degree of heat encountered. C. reniformis 'Oklahoma' introduced by Warren & Son Nursery in Oklahoma is vastly superior to the common eastern redbud, with dark green, waxy leaves and the darkest red-purple flowers of any redbud. As a plant it would be worth growing for foliage alone even if no flowers were produced. Another cultivar, C. reniformis 'Texas White', has the same handsome foliage and pure white flowers - stunning in spring. A very rare species, C. mexicana (or C. canadensis var. mexicana) has the same glossy, dark green leaves but the margin of the leaf is undulate giving it perhaps the most beautiful foliage of any redbud. The Mexican redbud has proven hardy in zone 7 in Dallas and should be adaptable throughout the southeastern U. S. Redbuds are best propagated vegetatively by T- or chip-budding on C. canadensis seedlings in late summer. Work is in progress with tissue culture and supposedly 'Forest Pansy' is now in successful culture.

3. Chionanthus retusus. The Chinese fringetree is a small deciduous tree which may reach 25' in height with glossy, dark green leaves which are handsome throughout the season. The pure white flowers appear in early summer and transform the tree into a solid mass of white. Hardy to zone 5. Native to China, Japan, and Korea and long in cultivation in the west (1845) but has never achieved widespread popularity due to propagation difficulties. The seed exhibits double dormancy and is difficult to germinate. The plant can be rooted in low to medium percentages (our trials usually run 20-50%) with semi-hardwood cuttings under mist in summer. Juvenile cuttings from young seedlings will root easiest and once a ready rooting population is established a stock block could be established to annually shear to the ground to maintain juvenility. Once rooted, cuttings have difficulty in becoming properly shaped plants with a tendency toward shrub rather than tree form. Stubbing a 2-4 year old plant to the ground and pruning the basal sprouts to a single stem as they emerge may speed the development of a tree form plant.

4. Cornus controversa. The giant or pagoda dogwood from China, Japan, and Korea is the largest of dogwood species reaching 70' in the wild and 30-40' in cultivation. Introduced in 1880, and later proclaimed by Wilson as one of the finest of ornamental plants with fast, vigorous growth, masses of creamy-white flowers in panicles in early summer, attractive purple-blue fruit, and young branches with reddish-purple coloration in winter. Young plants have grown 3-5' per year in The NCSU Arboretum (now the JC Raulston Arboretum) and are far more tolerant of our poor clay soil than C. florida. Considering its ease in propagation, it is strange this outstanding plant has never achieved wide-spread commercial success in the U. S. Seeds require 5 months warm followed by 3 months cold for germination. We have had good success (60-90%) with both softwood cuttings in summer under mist, and hardwood cuttings in winter.

5. Cornus x 'Eddie's White Wonder'. A hybrid dogwood produced by a cross of C. florida with C. nuttallii, the Pacific dogwood. The Pacific dogwood is a large plant reaching 50' in height with large flowers of 5 white bracts and it often reblooms in the fall. Though among the most spectacular of dogwoods, it cannot be grown successfully in the eastern U. S. The hybrid with the eastern dogwood has produced a plant with larger leaves and flowers with more vigorous growth than the eastern parent but with 4 bracts rather than the 5 of the western species (a few 5 bract flowers do seem to appear). At the NCSU Arboretum (now the JC Raulston Arboretum) it has not rebloomed in the fall. Though Dirr states it is not suitable for eastern culture, its performance in Raleigh has been spectacular with vigorous growth and heavy flowering for the last 6 years. It is budded on C. florida seedling understock (rather than C. nuttallii which is less tolerant of eastern soils and may be responsible for reported failure in the east).

6. Koelreuteria bipinnata. A much showier species of goldenrain tree than the commonly grown K. paniculata with larger leaves that are bipinnately compound, yellow flowers which appear several weeks later in summer, and showy fruits pink to purple-pink in color in autumn. It is sometimes reputed to not be hardy, but such reports come from a common problem of mislabeled seed in commercial trade with growers obtaining K. elegans (formosana) (zone 9) instead. The true K. bipinnata is hardy in Washington, D. C. and has withstood -7 F with no injury in The NCSU Arboretum (now the JC Raulston Arboretum). Easily propagated by seed which must be scarified and then moist stratified for 3 months.

7. Lagerstroemia fauriei and hybrids. The NCSU Arboretum (now the JC Raulston Arboretum) has several plants of L. fauriei from the original U. S. National Arboretum distribution now probably 25-30 years of age and 15' wide by 20' tall. The red flaking bark on these magnificent multiple trunked specimens will compare to any other ornamental plant in existence and the plants should be widely promoted as small ornamental trees. The recent U. S. National Arboretum L. indica X fauriei hybrid introductions, and particularly 'Natchez', carry the beautiful bark and better flowers. Plants are easily propagated by softwood or hardwood cuttings. The two recent record cold winters have demonstrated the much greater hardiness of the fauriei species and its off-spring with these plants showing no or little injury at -7 F whereas all L. indica cultivars (except 'Dallas Red') were killed to the ground. My observation of nursery comments of 'Natchez' injury and lack of hardiness seem to revolve around plants grown in containers and not properly overwintered to prevent root freezing, or nursery plants being pushed into excess active growth in the fall by heavy nutrition and irrigation to get large sized marketable plants quickly.

8. Magnolia denudata (or heptapeta). The Yulan magnolia from China has been in cultivation there for many centuries as one of the finest of classic garden plants and has been in western cultivation since 1789. It makes a small tree to 35' with pure white fragrant flowers appearing very early in spring. It has been difficult to root from cuttings and is often grafted on M. x soulangiana. Recently west coast propagators have had better success with cuttings and larger quantities of plants are becoming available. The NCSU Arboretum

(now the JC Raulston Arboretum) now has a block of 50 young seedlings grown from seed from the Beijing Botanical Garden and it is hoped that cuttings may be rooted more readily from these very juvenile plants and that by pruning they may be kept in a state of juvenility.

9. Prunus mume. The Japanese flowering apricot is considered one of the finest of small flowering trees in Japan where several hundred cultivars have been selected. A deciduous tree to 15-20' with both single and double white, pink, and red, highly fragrant flowers appearing in January-February as the first tree to bloom in the landscape. There are also weeping, fastigate, and cork-screw branch forms. Concern has been expressed about potential hardiness with obvious growth activity in mid-winter. In January 1985, plants in the NCSU Arboretum (now the JC Raulston Arboretum) were in full bloom the day temperatures dropped to -7 F and no limb dieback occurred. Plants grow rapidly with 3-5' of growth per year under field conditions when young. We grew a block of about 200 seedlings last year in #1 containers and some plants made 7' of whip growth in one growing season. Propagation is by seed after 3 months stratification, or cultivars are produced by semi-hardwood cuttings under mist in early summer (40-80%) or by T- or chip budding on to P. cerasifera understock.

10. Rhus chinensis. The Chinese sumac is a small tree reaching 15-20' in height with masses of creamy white flowers in autumn followed by yellow to red fall foliage color. The plant is quite variable from seed in plant qualities - flower panicle size, flower color, foliage coloration, plant form and hardiness (dependent on seed source as the species is native from subtropical Malaysia to subarctic Manchuria). 'September Beauty' is a cultivar selected for excellent fall color. Plants may be propagated by seed following stratification, or the cultivar by pencil-sized root cuttings taken in January-February when the plant is dormant.

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Many of you enjoyed the lecture by Mr. Peter Orriss, superintendent of the Cambridge Botanic Garden, given last fall to the Friends of the NCSU Arboretum (now the JC Raulston Arboretum). The following article by one of our former horticulture students now in agricultural communication at NCSU covers many of the points of this outstanding lecture for those of you who were unable to be there.

WINTER GARDEN HAS COLOR, FRAGRANCE -- EVEN FLOWERS --- By Arty Schronce, N.C. State University

What do you enjoy most about your garden between Thanksgiving and Valentine's Day? If you say nothing except the rest from hoeing weeds in the hot sun, you are missing a whole season's worth of beauty. For although most people tend to forget about plants and gardens during winter, certain plants can be more interesting in this season than in any other.

Peter Orriss, superintendent of the Cambridge Botanic Garden at Cambridge University in England, spoke on "Creating a Winter Interest Garden" at a lecture this fall sponsored by The NCSU Arboretum (now the JC Raulston Arboretum). Orriss created a garden at Cambridge solely for its winter interest.

Some of the slides of the winter garden at Cambridge brought "oohs" and "aahs" from the audience. Keep in mind that this was an audience composed of many experienced gardeners who are not wowed by any clump of posies.

What can be so attractive about a garden in winter? Fruits, foliage of evergreens, bark and even flowers are all part of making a winter garden beautiful.

Flowers in winter? Certainly! Several species of camellias, leather-leaf mahonia, winter jasmine, Algerian iris (Iris unguicularis), winter aconite, winter-sweet (Chimonanthes praecox), witch hazels and Magnolia stellata are some of the plants that will blossom in the North Carolina winter.

The winter-flowering cherry (Prunus subhirtella 'Autumnalis') blooms sporadically from November depending on the weather, with the peak of flowering in March or April. It is one of the best cherries to cut for winter forcing because of the light dormancy of the flowers.

Another winter-flowering tree is Prunus mume (mew-may). It is sometimes called Japanese apricot, flowering apricot or simply mume, but one is just as likely to hear it called by its botanical name. The Japanese consider it the finest of flowering trees, even over their beloved cherries. Depending on cultivar it will bloom from January to March.

Flowers are not necessarily the main contributors of color to the winter garden. Bright reds, yellow-green, and white come from the bark and stems of plants. Cornus alba 'Siberica' has one of the brightest red barks available. Cornus stolonifera 'Flaviramea' gives striking yellow-green stems. Rubus biflorus has chalk-white stems. The color diminishes as the wood gets older, so these shrubs are cut back severely each spring to induce a flush of new colorful branches.

Texture as well as color can make bark an important part of the winter landscape. Prunus serrula has limbs which look like polished mahogany. The flaking bark of crepe myrtle makes this plant important not only for its summer blooms. The river birch is popular in North Carolina for its peeling bark. 'Heritage' river birch has superior whitish bark. The flaking cinnamon-red bark of the paperbark maple (Acer griseum) makes this small tree more beautiful as it ages.

Evergreens provide blues and greens. Some evergreens take on a bronzy cast in winter. Some junipers become tinged with purple. Variegated forms of evergreens add yellow or white to the landscape. These may be used against dark backgrounds or to add extra color to an area.

Orange, red, gray, yellow, white, purple and blue can be found in the fruits of many plants. Hollies, wax myrtle, nandinas, aronia, Japanese barberry, red cedar, viburnums and beautyberry are a few plants whose fruits add interest to the winter garden.

Some fruits and berries attract birds to the winter garden. Birds bring color, song and liveliness to the garden in any season, but on gloomy winter days they can be especially cheering. A bird feeder and birdbath may lure more of these winged creatures to your area.

Winter-blooming shrubs are among the most fragrant of plants. Winter honeysuckle (Lonicera fragrantissima) is also called sweetbreath-of-spring although it may bloom as early as New Year's Day. The fragrantissima in its botanical name means "very fragrant." And very fragrant it is. The shrub's creamy small flowers are not showy, but their fragrance will let you know the shrub is nearby well before it is in sight.

Winter-sweet is appropriately named for its flowers are sweet. Witch hazels have a clean, spicy scent uniquely their own. The yellow flowers of the mahonias are quite fragrant also.

Orriss pointed out that a winter interest garden would be especially effective planted in view of a sunroom or solarium. Hospitals or nursing homes could brighten the landscape for their patients and residents who are unable to venture outside.

How much better it would make anyone feel to look out one morning at a garden glazed in frost or evergreens cloaked with snow; to see a bright red cardinal sitting on a limb of fat, gray dogwood buds or to enjoy the fragrance and delicate beauty of flowers in this harsh season.

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During the past months I've been corresponding with a rather fascinating person in Ohio sharing information and discussing sharing of plants from The NCSU Arboretum (now the JC Raulston Arboretum) for his garden. Not everyone shares the values of public gardens - read his rather incredible story in the following article.

16 ACRES OF FREEDOM FROM THE RAT RACE

Horticulturist toils 21 years and fights city hall for garden park in Strongsville . . . . By Tom Kaib

Henry A. Ross tells people to drop dead a lot.

This would seem strange for a mild mannered horticulturist but then your usual mild-mannered horticulturist isn't run into court every time he turns over a spade.

Henry Ross is or was. Eight times he's had to battle the City of Strongsville and/or the State of Ohio. Eight times he's won--preparing his own cases.

In the meantime he's taken 16 acres of blue and yellow clay, which once supported only blackberry brambles and weeds, and turned it into a magnificent botanical garden--by himself dawn to midnight seven days a week, over 21 years.

He thinks the trouble with Strongsville officials are over now, what with a $10-million lawsuit he has threatened them with if they ever again bother him or Gardenview Horticultural Park Inc.

When Henry A. Ross was growing up on Cleveland's East Side, he was too busy to realize he was "what we'd call poor today". He was a reader and a grower and beholder of things natural and beautiful.

At 8 he read of the magnificent public gardens of Europe and dreamed a dream. He read on and on so much so that when he landed at Ohio State University on the GI Bill, he stayed only 2 1/2 years to pick up his degree in horticulture "I had already read all the books. It was so easy."

Then the tall lean horticulturist came back to Cleveland looking for a place to build his dream. He found it in Strongsville and went to work. It was 1949.

"I envisioned 16 acres of beautiful gardens filled with peafowl, ornamental pheasants, exotic birds of all sorts, perhaps deer and raccoons. It was my intention to transform this barren wilderness into a magnificent public botanical garden park.

"I envisioned this paradise as being open free to anyone who wished to spend a few minutes an hour or a day away from the rat race of so-called civilization."

He borrowed the money to buy the land and worked it alone. He built a two-car garage for his equipment and tacked on a room in back to live in. He worked in Shaker Heights as a florist and still does a couple of days a week to support himself.

His nails are black with work, his face lined and he's as lean as he was 20 years ago. But Gardenview is blooming, gloriously. More than 500 varieties of flowering crabapple trees, 1,500 tuberous rooted begonias, thousands of daffodils, tulips and azaleas, a cactus collection, two lakes.

In 1960 when his 16 acres were about 50% developed, Ross realized that to assure Gardenview's perpetuation, it would be necessary to dedicate it legally to public park use.

He offered the park free to Strongsville.

Hey, Strongsville. Here's 16 acres of land. Frontage right on Pearl Road. Free!

Great, or some such, said Strongsville. We'll peddle it to the first land developer who comes along. Ought to be good for 38 houses.

And here's what we'll do for you. With the money we get from the sale, we'll build this new service garage we need and we'll name it the Henry Ross Service Garage as a memorial to you.

"Drop dead," said Ross.

"I really wanted to give the land to the city. But I put on the condition that it had to be forever maintained and utilized as a public botanical garden park and could not be converted to any other use.

"To enforce this, I wrote a forfeiture clause which provided that if any attempt was made to discontinue Gardenview, to convert it to another use or to sell it, it would revert to my heirs. But only after the city had the opportunity to remove anything and everything that it had put onto the property."

Ross repeated the offer to the city several times with the same answer: We'll be happy to take the land but with no conditions.

Finally, Ross created a nonprofit corporation, Gardenview Horticultural Park, Inc., and deeded his 16 acres to it.

He applied for a real estate tax exemption for Gardenview but was turned down by the Ohio Board of Tax Appeal. He believes this was due to opposition from Strongsville officials.

At any rate, he applied three years in a row and was turned down on an exemption which state law specifically provides for.

"It just goes to show how a person without money can be denied his rights."

But Ross's brother, a businessman in Detroit, came through with a gift to finance an appeal. Ross went to court. The court ruled that the refusal was improper and unjustified and ordered that the exemption be granted.

Fire one for Henry Ross's dream. And he'd have to fire seven more legal salvos through the years to keep Gardenview alive.

Like a year later when Strongsville installed sanitary sewers along Pearl Road. This is no park because we don't hold title to it. This is 38 building lots and we are assessing you $10,000 for this sewer.

"Drop dead," Ross told city officials. "Gardenview has 250 feet of frontage and is a park and I'll go to court rather than pay.

"They told me 'We know we are wrong and that we have no chance of winning but we are betting that you will not he able to muster the money needed to appeal this to the courts and as a result our decision will stand.'"

But Ross did muster the money and appeal. The court ruled the city officials were wrong and ordered that the assessment (really about $5,000 with $5,000 more in interest) be reduced to one sewer connection instead of 3 and should total just $700.

Fire two for Gardenview.

There were other battles and Ross through constant reading became a pretty fair country lawyer.

Through friends of Gardenview, his brother and foundations, Ross raised $13,000 to build a library and meeting room and a service building. He remodeled the two-car garage into the library-meeting room. Then for the service garage.

"When I informed the city officials that we intended to build a very attractive service building which would look like a modern, rough cedar-covered home they informed me that they would not allow us to build this building or any other. The local papers wrote that I was trying to build an ugly shed.

"My pleas for reconsideration went unheeded from spring through November of 1969. They would not issue a building permit.

"Then I came across a law of the State of Ohio which said agricultural buildings did not need approval.

"But no builder would touch the job without city approval. Finally a friend dug and poured the footer for me and I went to work myself."

Stop building, said the city.

"Drop dead," said Ross.

This time Ross was hauled into court on criminal charges-building without a permit.

The city wanted the court to rule on whether or not Ross was building.

"Sure I'm building" Ross freely admitted.

The court dismissed the charges.

The city appealed. The court of appeals ruled that the city had no right to prosecute Ross.

The next day the building inspector drove up to Gardenview. You can go down to city hall and get your building permit now, he said.

"Drop dead,' said Ross.

Henry Ross admits now that his original dream of a free botanical garden park was a "foolish pipe dream." But only the "free" part.

"I was under the mistaken impression that the general public in this country would have the same feeling towards botanical gardens which Europeans have. But I have learned that most of the people of this country are just too self-centered and materialistic."

Gardenview was open free between 1961 and 1969. Here's what happened.

"Visitors came by the hundreds of thousands. They trampled out the lawns, dug up and carried away plants, stole potted treasures from the greenhouse, pulled the tail feathers out of the peacocks and caused the death of a pair of black and white swans by feeding them pretzel sticks. On several occasions they broke open and stole money from the corn vending machines and the contribution box."

Ah the contribution box. It was Gardenview's only source of income during the free years.

On one Mother's Day weekend 10,000 people trampled through Gardenview . . . and left $9 in the box.

Get a levy on the ballot and we'll support it, hundreds of visitors told Ross. And he finally did get one on. It would have cost each family (not person) in Strongsville one cent a day to support Gardenview and give Ross four helpers. It was defeated.

That's when Ross changed the policy at Gardenview in the spring of 1969. It is now open free only to members--$5 a year per person or $10 per family. Non-members can enter for 75 cents for adults, 25 cents for children.

Attendance immediately plummeted to about one-tenth of the free volume. But vandalism and theft ceased completely.

"In talking to the present-day visitors, it is obvious that at long last Gardenview finally does have the kind of visitors who have toward it the same attitude that the Europeans have towards their botanical gardens," Ross said.

"In the years to come as all of the vacant land is filled to the saturation point with homes, businesses and industry the little bit of land which is set aside as botanical gardens will be so inadequate to cope with the hordes of people seeking relief from congestion that it will be absolutely essential to restrict the number of visitors if only from the standpoint of preventing these green islands from being trampled out.

"I am absolutely certain that it will be necessary to make an appointment far in advance for permission to visit a botanical garden and that there will be a very substantial admission fee in addition to the long wait.

"The people of this country will have only themselves to blame for this situation which they themselves have created. When they finally realize what has happened it will be too late to do anything about it. It will not be possible to create new open green spaces as there will be no spaces left.

"At this very time we stand on the threshold of creating our own future environment. If we lack the vision or capacity to see ahead, we will ultimately end up with planned congestion. We've got to set aside some space now as open green spaces so that the people of the future will have some place to escape to."

And he doesn't say it, but you know mild-mannered Henry Ross is thinking it.

"Without these green spaces, we might as well all drop dead."

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Once again The NCSU Arboretum (now the JC Raulston Arboretum) ends up in a national news media article - would you believe THE WALL STREET JOURNAL, no less!! (November 5, 1985). Congratulations Edith on the recognition of a mammoth job magnificently done with the perennial border. The whole country now knows about it. (Have all of you seen the concrete pig that took over when the flamingos flew south for the winter?)

THE FLAMINGO IN THE GARDEN -- By Allen Lacy

One of the most profoundly embarrassing experiences that anyone can have-especially someone like me, who's not very good at concealing his thoughts with a polite fib or a discreet silence - is to have someone else proudly show off something that's in flamboyant bad taste. Something, for example, like wooden or especially plastic pink flamingos as garden ornaments.

It was a torrid and sultry July day in Raleigh, N. C. At the repeated urging of a good many horticulturally minded friends from the area, I had finally worked in a visit to The North Carolina State University Arboretum where, I was told, I would find an extremely fine herbaceous perennial border designed by a young woman named Edith Eddleman, following the principles laid down by Gertrude Jekyll, the leading British garden theorist of the early 20th century. What's more, I had Ms. Eddleman, who serves as curator of the border, as a

guide. She had very graciously consented to drive over from her home in Durham, a trip of more than half an hour, to meet me in the arboretum's parking lot. We had exchanged pleasantries there, the usual bits of autobiography passing between us. Ms. Eddleman, I learned, had majored in Chinese history at the University of North Carolina at Greensboro, then earned her master's at Duke, in divinity.

Now, as we stood at one end of the border she had designed, she explained how the color scheme began with pastel tones, moved into warmer parts of the spectrum, and then, way in the distance, shifted into pastel blues and lavenders-pure Jekyllism. I hoped she did not divine what I was thinking as I looked at the object immediately before my eyes-a pink wooden flamingo, high on a stake, as if frozen in its flight in front of a clump of tall ornamental grass. Perhaps, I thought, someone who didn't know any better had stuck it there - or someone with malicious intent. Ms. Eddleman hadn't seen it yet. When she did she would wade into the border with all the energy of Jesus going after the moneychangers, rip it from the ground, and throw it deep into the shrubbery until such time as it could be more properly disposed of - incinerated perhaps, as an affront to the dignity of a herbaceous border designed according to the principles of Gertrude Jekyll. Ms. Eddleman didn't see it. At least, she didn't wade in to remove it.

We began to walk down the slope alongside the perennial border. I forgot all about the flamingo, for the border was a wonder. I whipped out my notebook to record the things that pleased me, starting with several different kinds of hardy perennial verbenas, which I didn't even know existed.

I was surprised to learn that Joe-pye weed, the ordinary old Joe-pye weed of our late-summer roadsides and waste places, makes a fine plant in the border, tall and commanding at its very back. Ms. Eddleman obviously knew very well what she was doing, and she had a lot of taste, as well as a good eye.

We stopped for a moment, and there they were. Two flamingos. Plastic ones. "How do you like my flamingos?" she asked. Her flamingos: She acknowledged them.

I mumbled something and bent down to inspect a label on a lovely goldenrod, lemon yellow and only 15 inches high. We walked farther down the border. I found some blue perennial salvias that I decided I had to have as soon as possible. But my mind was on those flamingos. By then I expected the plastic gnome, the jockey, the plaster Madonna of the Blue Bathtub, but none of these things appeared. There was a sign: "Beware-Nymph and Satyr Crossing." There was also a blush on my face, and a broad smile on Edith Eddleman's. I came to a sudden realization that it made a considerable difference to me that Edith's plastic flamingos in this public garden weren't the simple expression of bad taste. She had transcended bad taste. She had thought the matter through. She had a lively sense of camp. And she had trapped me. I was a garden snob. The fact is that I hadn't given the plants in her garden a fraction of the attention they deserved, for brooding about those flamingos.

Edith Eddleman had some fun with me, and she set me thinking. The world is full of people who genuinely like plastic flamingos. Who knows but that on visiting that arboretum and finding them there they will go on to discover that they also like a herbaceous border a la Jekyll?

We gardeners are often a bit too serious about ourselves. There ought to be more of us with a sense of humor and play like Edith Eddleman's. Sometimes in midwinter when the arboretum is dull and lifeless, she goes out and spray-paints a long row of ornamental grasses in a spectrum of colors faithful to the dictates of Miss Jekyll.

1985 NATIONAL ARBORETUM PLANT EXPLORATION

IN THE REPUBLIC OF KOREA

PRELIMINARY REPORT

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3501 New York Avenue, N.E., Washington, DC 20002

The second year of a 5-year research program of plant exploration in the Republic of Korea commenced in August 1985 under the auspices of the Friends of the National Arboretum, Inc. (FONA). This year's trip was funded most generously by research grants from the Holly Society of America, Inc., Tom Dodd Nursery (Semmes, Alabama), R.J. Reynolds Industries (Winston-Salem, North Carolina), North Carolina State University (Raleigh) and the University of British Columbia Botanical Garden (Vancouver, B.C.). Several private individuals, namely, Mrs. W. C. Seipp, Mr. P. M. Sprey, Mr. Cornelius Bond, Mrs. J. P. Reath and Mrs. E. Linforth, also contributed generously to the success of the 1985 Korean Expedition. The expedition participants are deeply indebted to the above organizations, institutions and private individuals for their gracious support and dedication to the objectives of the U.S. National Arboretum. We are also most appreciative of Mr. Kim Un Cho (Seoul) for his ever friendly assistance and permitting us to use his facilities, and to Mr. C. Ferris Miller (Min Pyong-Gal) of Seoul and of the Chollipo Arboretum Foundation for his usual superlative hospitality and sharing of information and plant materials. The U.S. Agricultural Counselor, Mr. Daniel Conable and his staff, especially Mr. Ahn Kyoung Ho, at the U.S. Embassy in Seoul were always extremely friendly and helpful.

The principal participants on Korea 1985 were Dr. T. R. Dudley (NA), Mr. Barry Yinger (NA), Mr. Peter Wharton (UBC Botanical Garden), and Dr. J. C. Raulston (Dept. of Horticulture, NCSU). We were assisted in the field primarily by Chang Young June and his brother Chang Young Hun.

Because of the National Arboretum's long-standing commitment to conduct basic and hybridization research with Ilex, it was one of the priority genera on this expedition. In affirmative response to a Research Grant Proposal submitted by T.R. Dudley, the HSA Trustees awarded, at their 18 May 1985 meeting, Research Grant #P-31 to FONA in aid of the 1985 Botanical Expedition to Ihe Republic of Korea. The specific title of this grant is: 1985 Plant Exploration of the Southwest Coast and Offshore Islands of the Republic of Korea: for discovery, collecting, introduction and distribution of new and unique germplasm of Ilex species, variants and hybrids essential for on-going and future taxonomic, biosystematic research and hybridization programs. The principle investigator's specific commitments to the HSA are: (1) to provide a complete, illustrated account of the 1985 expedition and reports about the collections and research results for publication in the HSA Journal; and (2) to provide a full share of the Ilex germplasm to the HSA designated recipient - in this case, Dr. Willard T. Witte of the University of Tennessee, Knoxville. When all of the expedition products are returned to the United States, the HSA share of the resulting seed, cuttings, etc. will be sent to Dr. Witte, as specified in the HSA/FONA/Principle Investigator Memorandum of Understanding. Since the expedition's collecting books, herbarium specimens and the majority of the germplasm collections have not yet been returned from Korea, a fully detailed research report is not possible at this time. However, a few highlights extracted from my memory, personal field books and diary are presented in this preliminary report.

After a few days of organization in Seoul we went first to the Pyonsan Peninsula (35_ 40' N, 126_ 40' E, Chollapuk do Province), which juts out into the Yellow Sea on the southwest coast and has a maximum altitude of 500 meters. This Peninsula is one of the least disturbed coastal areas, although habitat destruction by man is proceeding at an alarming rate here as well as at many collecting sites on the southwest coast and offshore islands. On the Pyonsan Peninsula we documented wild-occurring I. cornuta Lindley & Paxton, and it also was cultivated in a few gardens. At this time of year, early August, fruit was not mature and it was too early to take cuttings. Accordingly, germplasm collections will be made in October, shortly before the team returns to the United States in November. The northernmost wild population of I. cornuta in Korea occurs on the Pyonsan Peninsula where it is designated as National Monument 122 and is surrounded by wire fencing. At most, there are about 20 small and depauperate, struggling plants, 0.5-1 meter tall and of unknown sex. The leaves of these plants were strongly spined representing the "typical" expression of the species. Twelve grouse were flushed at this enclosure. A short distance away at a lower altitude a solitary, 1-meter tall, 3-trunked (13-26 cm diam. each) male (old flowers were caught in a spider web) plant of I. cornuta was discovered. We were assured by the local farmer that this plant with entire to subentire leaves was wild. It resembles 'Burfordii' and probably represents the variant, I. cornuta var. fortunei (Lindley) Hu, S.-Y., which is well documented from several central and east coast provinces of China. At a different montane locality on the Pyonsan Peninsula we documented Ilex crenata Thunberg from its northernmost station in Korea. The approximately 100-plant population is designated National Monument 124. The plants were 0.5-1.3 meters tall and wide with flattish wide-spreading crowns. They could not be sexed because there was no evidence of fruit or remnant flowers, and we could not get into the wire enclosure. The few plants we could examine were very small-leaved and had a dense, "twiggy" habit, reminiscent of a very fine I. crenata variant collected a few years ago from Mt. Hall on Cheju Island by C. Ferris Miller.

We proceeded to Mokpo (34_ 50' N, 126_ 30' E, Chollanam do Province) near the southern tip of Korea, arriving during a typhoon. This interesting port city is the jumping-off point of the ferries for the more than 300 offshore islands in the Yellow Sea. A long ferry ride, taking nearly a day, brought us to Taehuksan Island (34_ 40' N, 125_ 30' E), the largest of the Huksan group. There in a shop we found an immense 2-meter tall, single-trunked (15 cm diam.) tubbed Korean bonsai of I. x wandoensis, hybrid nov. in ed. We were told that the plant was originally collected in the wild on a mountain above the village of Ye-ri in Taehuksan. We found another bonsai only 0.5 meter tall of this hybrid in the local restaurant that we frequented. The presence of wild-occurring I. x wandoensis on Taehuksan would have represented a range extension of this natural hybrid, but its presence here in the wild was not confirmed by our team. I suspect that it was indeed a native plant of the island. There is no reason why I. x wandoensis in ed. could not have been indigenous to Taehuksan, although there is no direct evidence that I. cornuta, one of the parents, was native. However, Korean people have a great fondness for digging up unusual plants to use as bonsai subjects and in doing so native wild populations become, through the years or only after a short time, decimated and annihilated. This could easily have been the fate of I. x wandoensis in ed. and I. cornuta on Taehuksan. The other parent of I. x wandoensis in ed., I. integra Thunberg, is present in some abundance on Taehuksan, although only as sprout growth from cut trees. One seedling of I. integra was discovered.

From Taehuksan Island we journeyed by ferry for nearly another whole day, at the beginning of another typhoon, to Sohuksan (34_ 05' N, 125_ 10' E), the outermost Korean island in the Yellow Sea. Sohuksan is a botanical diamond and has the richest and most intact flora of any area visited. It is a spectacular island whose cliffs and escarpments rise sheer from the sea. The Sohuksan mountain at 620 meters elevation is the highest peak of the southwest coast and offshore islands. Sohuksan had never before been explored by western botanists, and to our present knowledge has not been visited by any Korean (there are very few) or Japanese botanists. Approximately one half of Sohuksan fortunately is still relatively undisturbed. On the very steep and hazardous terrain there are many large and mature populations of rare, threatened and endangered woody plants. A large number of "giant" or record trees of many genera and species were discovered, and I. integra was no exception.

The remaining mature vegetation of Sohuksan is, however, in great danger because the decline of fishing has forced the local people to press up the mountain slopes to clear-cut the forest and harvest the medicinal bark of Machilus thunbergii Siebold & Zuccarini (such harvesting, of course, kills the trees). The villagers naively hope that when the forests are clear-cut and disturbed, the Machilus will

regenerate. These people do not understand that clear-cutting the ancient forests at the mid and upper elevations will absolutely destroy the natural habitat of the indigenous wood dove which is the sole vector for distributing the seed of Machilus.

The majestic trees of I. integra on Sohuksan were truly amazing: 10-25 meters in height with trunks 0.7 to 2 meters in diameter! This species was evident locally at several sites on the island from 50 to 200 meters elevation - this zone also supported disgusting terrestrial leeches. Our host and previous chief of the village we stayed in told us that they used I. integra to make birdlime to snare birds and rodents. A number of large trees of I. integra were cropped with stumped branches and crowns; these trees wese sprouting back very well and were fruiting. This practice was obviously in equilibrium with nature. However, we quickly discovered that the villagers were doing a terrible thing. Many of the largest I. integra were being killed outright by the locals who were totally girdling the trees at their bases. For example on our second trip back to Sohuksan in September we spotted in the dense forest a mammoth and very heavily fruited I. integra. Upon arriving at its base we were stunned to find that it had been freshly girdled, perhaps the day before we returned. Unfortunately, the trunk was unclimbable and the lowest branches were 5 meters above the ground, and we could not collect herbarium specimens or seed. Invariably, the ancient trees, 250-350 or more years old, of I. integra that had been girdled were females in fruit. The villager's logic is impeccable: the female trees are the first to go because they produce the seed which gives rise to new plants. Never before have I seen such a dramatic, systematic and all-out campaign to destroy totally a single species. There is no question in my mind that the mature I. integra on Sohuksan represent the largest and oldest Ilex in Korea, if not in all of Asia.

Obviously, the I. integra population on Sohuksan should be designated a National Monument, as are I. crenata and I. cornuta on the Pyonsan Peninsula. The villagers, however, are adamant in their simplistic view that even though they are destroying the forest, the forest will always be there. And who is to know? Sohuksan is very remote and no Korean botanist has ever been there.

A large quantity of seed of I. integra from several trees, including a "megafruited" one, was collected during our August and September visits. Unfortunately, even in September the growth was too soft to take cuttings.

Upon returning in August from Sohuksan (4 days collecting in rain) via Taehuksan, in yet another typhoon, we went to Seoul for a brief R & R. R & R involved taking care of collections made to date, cleaning seed, putting cuttings in Kim Un Cho's greenhouse, packing and sending herbarium specimens to the U.S., conferring with Embassy officials, planning the next trip, and a little sightseeing but always plant-oriented. For example, the first live plant I have ever seen of I. nemotei Makino, a rare deciduous Japanese taxon, was in the Kwanak Arboretum of the National University near Seoul.

Back in the field: this time to the Naejangsan Mountain National Park (35_ 30' N, 126_ 50' E, Chollapuk do Province). Naejangsan is a sacred mountain about 40 km from the seacoast, and is especially noted for the autumn colouration. This beautiful region is preserved and has a very rich flora, much of which can be reached by using the cable car running up to just below the summit ridges of over 700 meters. The first holly observed was a fine-textured, very spiny I. cornuta planted on the grounds of the Naejangsan Tourist Hotel. On the grounds of a famous Buddhist Temple nestled at the base of the mountain we found I. cornuta, I. crenata and I. crenata 'Convexa'. The steep, treacherous and fantastically beautiful slopes, escarpments and dense forests of Naejangsan yielded many wonderful plants. On a mountain ridge at 680 meters elevation (very near the cable car terminal) we discovered our first mature I. macropoda Miquel f. macropoda and f. pseudomacropoda (Loesener) Hara. These plants were 7-15 meters tall, 7-15-trunked at the base, and displayed excellent fruit throughout the 7-17-meter crown spread. Further exploration of several sites on Naejangsan indicated that I. macropoda was sporadic to relatively common from 300 to 700 meters elevation. At a famous site called Saranguidari Bridge (Sa Lang Dari) we were awed by a remarkable, architecturally perfect male plant of I. macropoda growing singly on a steep talus slope in full sun. This plant was about 15 meters tall, 17-trunked at the base (each was 3-4 decimeters in diameter) and had a crown diameter of close to 17 meters. Surely, I. macropoda must be one of the largest growing of all deciduous Ilex. The fruit of I. macropoda at these elevations on Naejangsan Mountain had turned red and we feverishly collected it in large quantity. Fortunately, since Naejangsan is a protected and guarded National Park where cutting in the forest is prohibited, the perpetuity of the flora is guaranteed. Ilex macropoda here will not suffer the illogical and ignoble fate of extinction which faces I. integra on Sohuksan. It was with mixed feelings that we had to leave the great treasury of plants on Naejangsan, but on the other hand it was a delight to escape from the diet of mushrooms which were the basis for every single meal! This area was going to be revisited in October to collect more seed.

It was imperative to explore on Wando Island (34_ 20' N, 126_ 50' E; Chollanam do Province) at the southern tip of the Korean mainland. This was where C. Ferris Miller about 8 years ago discovered a large population of the naturally occurring hybrid between I. cornuta and I. integra, later to be known as I. x wandoensis hybrida nova. I have not yet officially published the name I. x wandoensis in ed. for this beautiful and very polymorphic hybrid. It will be published soon with the appropriate detailed description and required documentation now that the essential information has been accumulated in the field. We went to the precise locality where Ferris Miller discovered it and where Barry Yinger had visited with Mr. Miller in 1980. To our absolute dismay and disappointment we could not find any plants of I. x wandoensis in ed., but we did find a great many holes dug on the steep hillsides. In their enthusiasm to provide plants for bonsai, Korean entrepreneurs had annihilated the entire original population! However, a fair number of plants dug from the wild were found in gardens on Wando. A native grove of I. integra had some plants that were 10 meters tall and wide with trunks 0.7 and 1.3 meters in diameter. A few short, 3-meter tall single-trunked I. macropoda were a]so observed. The Ilex planted in the Hwa Hong schoolyard were well documented earlier by Ferris Miller; possibly the most spectacular plant of I. x wandoensis in ed. ever seen by anyone is cultivated at this school. It is about 10 meters tall with very dense dark foliage to the base and has been trimmed precisely to 3 flat sides giving it a true "pyramid" shape. This female in heavy fruit was originally dug in the wild. The label on this schoolyard specimen unfortunately

identifies it as I. cornuta. Several other male and female plants of I. x wandoensis in ed. were present on the school grounds as well as "true" I. cornuta, I. integra and I. crenata. The return visit to Wando in October will emphasize seed and cutting collections from this tree and the others located in several gardens and in the wild.

At a different locality on Wando (Taeshin Ri) we discovered a remnant nonfruiting wild population of I. x wandoensis, in deep shade. The hillsides all around were pocked with holes where this Ilex had once existed. Actually the hybrid was fairly evident in cultivation on Wando, and in front of a bank we spotted, in the first week of September, a very early-ripening, small-leaved expression, a variant of the hybrid that I had not seen before. Ilex integra occurred at several wild localities on Wando, but mostly as second-growth sprouts which will develop into reproducible trees if left alone. Because of earlier collections made by Miller and Yinger we know that I. cornuta was also native to Wando.

The small islet, Chudo, in Wando harbor is protected as a nature preserve. Ilex integra is present there and one tree was 15 meters tall with a trunk diameter of nearly a meter. Chudo also sported another Ilex, possibly I. rotunda Thunberg or a natural hybrid of I. integra and I. rotunda, however, the final identification must wait for further study of the collections and herbarium specimens collected previously. Although I. x wandoensis in ed. was found in the wild in September we did not find any wild fruiting specimens at that time. We hope the return trip in October may yield some fruit on wild plants. At any rate, seeds and cuttings of all phenotypic expressions, either in the wild or in cultivation, will be collected.

The next exploration was on the much larger island of Chindo (34_ 30' N, 126_ 15' E, Chollanam do Province), due west of Wando with the Haenam Peninsula intervening. Much more time could and probably should be spent on Chindo but we did locate I. crenata in the hills and cultivated I. x wandoensis in ed. The owner of a cultivated plant assured us that the I. x wandoensis in ed. had been dug from a mountain on Chindo about 15 years ago. This proves fairly conclusively that I. x wandoensis in ed. was a native plant of Chindo as well as of Wando. In an elementary school yard there was a beautiful small-leaved heavily fruiting I. integra which had been dug from the wild about 30 years ago. At the very southern tip of Chindo there is a heavily forested mountain which is maintained and guarded by the oldest Buddhist temple on Chindo, l000 years old. After securing from the priest at the temple permission to collect, we entered the very dense and undisturbed forest and discovered many exciting plants not seen before. Ilex integra was also there as multiple-stemmed trees, and the species was found at several other sites on Chindo. Ilex crenata 'Convexa', I. integra dug from Wando and a variegated I. crenata were observed in a nursery on the outskirts ot the city of Haenam. Other nurseries on the way to Kwangju were cultivating I. crenata in various forms, including 'Convexa', I. cornuta and var. fortunei, and I. integra. ln Kwangju City one of the commonest evergreen plants used in landscaping was I. crenata.

On the Taean Peninsula (36_ 40' N, 126_15' E, Chungchongnam do Province) the highlights were several visits to Chollipo Arboretum where we were greeted, entertained and toured by C. Ferris Miller. The Chollipo collection of Ilex amassed by Ferris from all over the world is indeed very impressive and exciting. His own collections made in the wild from all over Korea are intriguing and demonstrate his commitment to Ilex and to conservation of Korean indigenous plants (a list is appended).

The woodlands of Chollipo contain I. macropoda. At Chollipo we were honored to help celebrate the 40th anniversary of Ferris's arrival in Korea. We briefly explored Amyon Island at the southern end of the Taean Peninsula, where we found I. macropoda.

All too soon we had to return to Seoul to clean and process seed and plants, and to see Mr. Wharton and Dr. Raulston off at the airport as they were returning to North America in mid-September. Mr. Yinger and I and three Korean assistants proceeded back for more seed collecting in Mokpo, Taehuksan and Sohuksan, hoping that more seed would be mature, as indeed it was. After two more weeks in the field we returned to Seoul where we feverishly cleaned and packed seed and plants for me to hand-carry to the U.S. when I returned at the beginning of October. I had planned to stay collecting in Korea until the beginning of November, but after two months of grueling mountain climbing my back forced me to return. However, I am absolutely confident that Mr. Yinger and the Korean assistants will have successfully fulfilled the objectives of the 1985 expedition, especially the documentation, collecting and introduction to the U.S. of unique germplasm of Korean Ilex. Further articles will describe the last month in the field and present the scientific research report. TO BE CONTINUED.

BOOK NEWS:

I was recently introduced to an organization which publishes a delightful newsletter which will be of interest to those Friends with the fatal conifer passion disease. The Dwarf Conifer Society of Cincinnati is "an organization made up of individuals whose interests include growing and propagating dwarf conifers and companion plants". They publish a newsletter four times a year with a wide variety of information in it (and it is published on schedule for those of you who enjoy that strange feature). Membership is very reasonable at $5.00 for a year (single, $10 for family) - contact: The Dwarf Conifer Society of Cincinnati, 6852 Beechmont Ave., Cincinnati, Ohio 45230.

Though not a book - still a superb source of information on unusual plants that I am happy to promote - I highly recommend that local plantsmen join and support the newly formed Piedmont Chapter of the American Rock Garden Society. They began the organization last fall and I have not had a newsletter out to publicize their several meetings which have occurred this winter. The next meeting is May 17 - an annual meeting and picnic with officer elections and planning for the coming year. If you want a group that focuses on plants, and how to grow the choice ones successfully - you can't do any better than this group. For information on joining or attending the next meeting contact one of the three members of the organizing committee: Edith Boyer 933-9619, Nancy Goodwin 732-7787, or Sandra Ladendorf 942-1734. My thanks to this group for beginning this new group which will add so much to knowledge and awareness of plants in this area - congratulations!

Many of you have met Larry Hatch through tours of the arboretum, or in lectures to the Friends, or enjoyed his rock garden and juniper collection at the arboretum, or read his articles in the newsletter - but most of you are not aware of his level of expertise as one of the top ornamental plant taxonomy authorities in the U. S. No small accomplishment while still a graduate student! He has just published a comprehensive REFERENCE GUIDE TO ORNAMENTAL PLANT CULTIVARS which is the finest publication of its kind in existence. By ordering a copy, you can not only get an incomparable range of information on varieties and sources of plants - but support the educational program of a remarkable young talent who will benefit American horticulture immeasurably in the decades ahead. Congratulations, Larry. Superb work!!

REFERENCE GUIDE TO ORNAMENTAL PLANT CULTIVARS

by Laurence C. Hatch

The Reference Guide to Ornamental Plant Cultivars is part of a new database and information service on cultivars of ornamental garden plants. If you have been frustrated by outdated reference books or had trouble finding a source for a rare plant, the Reference Guide may be your answer. The Reference Guide is already in use by arboreta, botanical gardens, universities, nurserymen, landscape designers, and collectors around the country. This unique book is for anyone interested in the newest and best ornamental plants. Here are a few of the Reference Guide's features:

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* mail order nursery sources for cultivars

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NEW CATALOGS AND PLANT SOURCES OF INTEREST

I was recently shown a remarkable seed catalog of perennial and rock garden plants. What astounded me was the comment in the catalog "Fall Supplement 1985 - 1,700 new items" - this is a supplement to our spring general seed list! With the amazing variety of choice items in the supplement, I can't imagine how the general list could be better. Some examples of seed available: 85 campanulas, 20 Carex, 47 Gentians, 29 Iris, 49 Primula, 55 Sedum, and 11 Trilliums. Although most items are herbaceous perennials; there are a few fine woody materials as well, e. g. Abies homolepis, 12 Clematis, 7 Hebe, Hydrangea petiolaris, Pieris, 37 Rhododendron, and 12 Vaccinium. Most seeds are $1-2.50 per packet. Two things do bother me about the listings - selling seed of named cultivars which will not come true to the clonal material and selling seed of endangered species such as terrestrial orchids. The seed list is $1.00 and a retail plant list (which I've not yet seen) is also available for the same price from: Maver Rare Perennial Nursery, P. O. Box 18754, Seattle, WA 98118 (206-725-9823). The nursery is located at 3245 S. Juneau, Seattle, WA.

SOME NEW PLANTS RECEIVED IN THE NCSU Arboretum (now the JC Raulston Arboretum)

Nolina erumpens Lone Star Growers, Inc. 11/7

Agave stricta Lone Star Growers, Inc. 11/7

Agave neomexicana Lone Star Growers, Inc. 11/7

Agave havardiana Lone Star Growers, Inc. 11/7

Hesperaloe funifera Lone Star Growers, Inc. 11/17

Yucca filifera Lone Star Growers, Inc. 11/7

Yucca retusa Lone Star Growers, Inc. 11/7

Yucca constricta Lone Star Growers, Inc. 11/7

Yucca thompsoniana Lone Star Growers, Inc. 11/7

Dasylirion leiophyllum Lone Star Growers, Inc. 11/7

Dasylirion longissima Lone Star Growers, Inc. 11/7

Ilex ambigua Salter Tree Farm 1/9

Acer barbatum Salter Tree Farm 1/9

Ulmus floridana Salter Tree Farm 1/9

Aronia pumila Salter Tree Farm 1/9

Sapindus marginatus Salter Tree Farm 1/9

Lagerstroemia 'Powhatan' Auburn University 1/14

Lagerstroemia 'Christmas Time' Auburn University 1/14

Lagerstroemia 'Weeping White' Auburn University l/14

Lagerstroemia 'Potomac' Auburn University 1/14

Lagerstroemia 'Mission' Auburn University 1/14

Lagerstroemia 'Regal Red' Auburn University 1/14

Lagerstroemia 'Byer's Red' Auburn University 1/14

Lagerstroemia 'William Toovey' Auburn University 1/14

Lagerstroemia 'Hardy Lavender' Auburn University 1/14

Lagerstroemia 'Byer's Wonderful White' Auburn University 1/14

Lagerstroemia 'Country Red' Auburn University 1/14

Nandina domestica 'Fire Power' Cottage Hill Nursery,

Irvington, Ala. 1/12

Narcissus 'Ambergate' The Daffodil Mart 1/14

Narcissus 'February Gold' The Daffodil Mart 1/14

Narcissus 'Louise de Coligny' The Daffodil Mart 1/14

Narcissus 'Canarybird' The Daffodil Mart 1/14

Narcissus 'Green Island' The Daffodil Mart 1/14

Narcissus 'Actaea' The Daffodil Mart 1/14

Narcissus 'Unique' The Daffodil Mart 1/14

Narcissus 'Ceylon' The Daffodil Mart 1/14

Narcissus 'Trevithian' The Daffodil Mart 1/14

Narcissus 'Sweetness' The Daffodil Mart 1/14

Narcissus 'Mt. Hood' The Daffodil Mart 1/14

Narcissus 'Tahiti' The Daffodil Mart 1/14

Narcissus 'Peeping Tom' The Daffodil Mart l/14

Narcissus 'Ice Follies' The Daffodil Mart l/14

Narcissus 'Suzy' The Daffodil Mart 1/14

Narcissus 'Stainless' The Daffodil Mart 1/14

Narcissus 'Lemon Glow' The Daffodil Mart l/l4

Narcissus 'Waterperry' The Daffodil Mart 1/14

Narcissus 'Salmon Trout' The Daffodil Mart 1/14

Narcissus 'Tresamble' The Daffodil Mart 1/14

Narcissus 'Thalia' The Daffodil Mart 1/14

Narcissus 'Unsurpassable' The Daffodil Mart 1/14

Narcissus 'Jumblie' The Daffodil Mart 1/14

Narcissus 'Sugarbush' The Daffodil Mart 1/14

Narcissus 'Erlicheer' The Daffodil Mart 1/14

Narcissus 'Geranium' The Daffodil Mart 1/14

Magnolia denudata Beijing Botanical Garden 1/14

Calycanthus floridus 'Elizabeth' Dr. Dirr, Univ. of Ga 1/18

Magnolia grandiflora 'Bracken's Brown Beauty' Dr. Dirr,

Univ. of Ga 1/18

Acer pubinerve Grafted scion from McDonald - collected Asian Valley UBC 1/18

Ilex NA 28207 (ciliospinosa X (cornuta X pernyi)) female

Nat. Arb. 2/10

Ilex NA 28211 (pernyi X latifolia) female Nat. Arb. 2/10

Ilex NA 28297 ((aquifolium X cornuta) X integra) female

Nat. Arb. 2/10

Ilex NA 31372 (integra X altaclerensis) female Nat. Arb. 2/10

Ilex NA 28273 (integra X aquifolium) female Nat. Arb. 2/10

Ilex NA 28274 (integra X aquifolium) male Nat. Arb. 2/10

Ilex NA 28269 (integra X aquifolium) female Nat. Arb. 2/10

Ilex NA 28337 ((cornuta X pernyi) X latifolia) male

Nat. Arb. 2/10

Ilex NA 28214 (pernyi X integra) female Nat. Arb 2/10

Ilex NA 28279 (integra X aquifolium) female Nat. Arb. 2/10

Ilex NA 28255 ((aquifolium X cornuta) X integra) female

Nat. Arb. 2/10

Ilex NA 28388 ((cornuta X pernyi) X perado) male

Nat. Arb. 2/10

Ilex NA 23221 (pernyi X altaclerensis) female Nat. Arb. 2/10

Ilex NA 37181-1 through 7 cornuta seedlings (exceptional hardiness-Korea) Nat. Arb. 2/10

Prunus 'White Fountain' Wayside Gardens 2/25

Potentilla 'Abbotswood Silver' Wayside Gardens 2/25

Agapanthus 'Bressingham Blue' Wayside Gardens 2/25

Campsis X 'Crimson Trumpet' Wayside Gardens 2/25

Populus simonii 'fastigata' Syracuse via Hatch 2/25

Lagerstroemia indica 'Centennial Spirit' OSU 3/7

Lagerstroemia indica 'Prairie Lace' OSU 3/7

Pinckneya pubens 'Off-White' Univ of Ga 3/25

Pinckneya pubens 'Rose pink' Univ of Ga 3/25

Magnolia 'Royal Flush' Gossler Farms 3/25

Magnolia soulangeana 'Amabilis' Gossler Farms 3/25

Magnolia wilsoni 'Bovee' Gossler Farms 3/25

Actinidia kolomikta Gossler Farms 3/25

Hamamelis vernalis 'Christmas Cheer' Gossler Farms 3/25

Eucryphia nymans var. nymansay Gossler Farms 3/25

Eucryphia intermedia Gossler Farms 3/25

Sibiraea laevigata MA#275-83 The Morton Arboretum 3/25

Narcissus 'unknown cv. - white with double orange crown'

Bob Wilder 3/25

Iris sibirica 'unknown cv. - light blue' Bob Wilder 3/25