

JC Raulston Arboretum

Friends of the Arboretum Newsletter

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J. C. Raulston

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Notes from the Arboretum

Again too long an interval between newsletters - but one can take refuge in the fact the interval was reduced by 4 months from the last issue (statistics can be used to manipulate and prove anything). The last year has been an incredibly busy but very good time in the life of the arboretum. You've heard many of the details in Cat's quarterly updates with stories of the many people who support us in so many ways, awards, events, etc. In many ways it has been a period (particularly for me) of finally ending the sabbatic leave of '88 that you've read about in endless stories in the last 5 newsletters. We've been working hard in the nursery out-of-sight of visitors - "housecleaning" in finally biting the bullet and discarding plants which have lost their labels, overgrown plants, etc. - and are finally at the stage of having new, fresh, known plants in much smaller quantities. When fall planting comes and all the older plants move to the arboretum, and our members October plant distribution clears out extras - we'll be at the best greenhouse and nursery situation in at least a decade.

In the arboretum itself, the plantings again are at their best state ever we believe. In addition to the long-standing support of our university staff at the farm - Newell Hancock, Paul Lineberger, and Clifton Ryan - and our innumerable and wonderful volunteers - we've been particularly blessed this year with our summer student helpers. We've had such good ones over the years - but none any better than Leslie Booker and Mike Riley. I can barely make work lists as fast as they zip through them. As in the nursery, one of the major goals has been to improve the curation of the collection - and we've finally clenched our jaw and decided to just remove many of the unknowns (treasures though they surely are) - Mike's a terror with a chainsaw and a hit list! Surprisingly - they are rarely missed once taken out.

We were blessed with a mild fall and winter, one of the most beautiful springs ever, and relatively even moisture all the way back to last summer - resulting in fewer than normal losses and plants growing amazingly fast. Last fall we removed much of the conifer collection in the northeast section of the east arboretum - and Kim Tripp has begun the re-installation process with dozens of new conifers now in place along with companion plantings of many *Acer* taxa. A special theme in one area is a "blue garden" inspired by the magnificent one at Lotusland in California. In September we will plant the new winter garden nearby (where the grasses and yuccas once reigned) with the many plants stockpiled in the nursery for that purpose. Later in the winter the crepe myrtle peninsula will be removed as the plants installed in the 70's are overgrown and superceded by newer and better cultivars - and the babies waiting in the nursery will be installed.

We've had a remarkable propagation season and have both the best selection and the largest number of plants ever ready for our summer nurserymen distribution in Asheville in August - and the best selection of plants for our members distribution later in the fall. And we're hard at work already on August '93. As the plants in the arboretum age, it becomes easier and easier to find ever finer plants to obtain adequate propagation wood to build up for distribution.

Another major "behind-the-scenes" long-term task that has hovered over us as our ultimate frustration - is the enormous "Chronicles Project". Three years ago we announced a bound and indexed volume of all the past newsletter - and many of you have ordered it and patiently waited for its delivery. This story could take a newsletter to explain. Lost issues, retyping most issues as many came before computer storage, crashing of storage disks requiring retyping, volunteers, formatting, etc. It has become the ultimate albatross about the arboretum neck and we all agonize over it daily. The good news is that all issues are finally typed and stored (with backups!), and now formatted for final proofing and indexing. The end finally appears in sight and we hope to have it in the hands of those who have ordered it before Christmas (we hope, we hope).

The biggest challenge facing all of us at the arboretum is our success - services provided result in more requests for increased service. Almost monthly we have more visitors with more questions and needs, more phone calls, more letters, more nurserymen requests for plants; we're publishing more, attending more meetings, doing more formal research and accomplishing more. At the same time we face the new challenges of the fund-raising campaign to support the development of better facilities and ensure the future of the arboretum - and with the success of that we now move into work with architects, road planning, permits, coordination with varying agencies, and the million hidden activities associated with all that. (Then there are small things like "real life" - i.e. teaching. This spring involved teaching 3 nights a week in 3 cities across N. C. with 12,000 miles of driving to reach the 150 professionals taking that class.)

So it's a really good time in the arboretum with the garden - we're so proud of what is happening and very deeply appreciative of the innumerable people and organizations who support us in so many ways. Enjoy the plants.

Now to the newsletter. I think a blockage fear in getting this issue out has been the reaction of people to the European sabbatic travelogue. It has been the most popular writing I've ever done - and now that it is finished I fear a return to more "hard core" plant news will disappoint many. Future travel tales are planned - hopefully the Mexico exploration, the Pacific Northwest, etc. But warnings are due - you've got a lot of plant news ahead here. Do hope you enjoy it.

VARIATIONS ON A THEME - WHAT DO YOU CALL A COLLECTION OF TREES?

The July 1992 American Horticulturist printed a compilation kept for many years by good friend Warren Roberts, superintendent of the wonderful Davis Arboretum of the University of California. Over the years he has kept a record of the varied and inventive ways people spell the name of the institution in correspondence (something I wish I had done as I could add many more to this list I'm sure). At this point he has 74 variations on the term ARBORETUM. (A tape of the ways people say it would also be a revelation!)

Abaretum Arabatum Arbeterium Arboretum Arborietum Arboutiem Arvoretum

Abattorium Arbaritum Arbitrarium Arboreteum Arborium Arbretum Barbaratom

Abboretum Arbaterium Arboertum Arboretium Arborptum Arbrierum Barberetum

Aboretum Arbatoreum Arbonetum Arboretom Arborteum Arbrutorium Barbouretum

Abortium Arbatorium Arbor Dep't Arboretor Arbortium Arburetum Darboretum

Abortum Arberarium Arboraetum Arboretun Arbortreeum Ardoietum Herborium

Arboretum Arberation Arborarium Arboreture Arborutum Arobetum Orabatum

Abureetum Arberatum Arborateum Arboretus Arboterium Aroboretum Rborretam

Adboretum Arberedum Arboratum Arboretwon Arbotetum Arobretum

AirBoretum Arberetum Arbordetum Arboreum Arboteum Artoretum

Airboretum Arberitum Arboreatum Arboriatorum Arbouretum Arvaritum

As Thomas Jefferson said: "I have nothing but contempt for a person who uses only one way to spell a word."

INTIMATE TALES FROM AN EXOTIC BED

A feature begun in the last newsletter with the concept of moving around the arboretum to different beds and covering all the plants in that given area that are often overlooked by visitors - to show what hidden worlds there are to explore in every bed in the arboretum by those willing to search them and do some background reading and research. The second bed selected for discussion is at the front of the farm office/classroom building beside Beryl Road. It is the "peninsula" around the official university sign for the Unit #4 research farm. On our arboretum mapping system, workers know it by the personal name of S10.

The largest plant in the bed is a 40 year old hybrid holly which existed from plantings in the '50's long before the arboretum existed and like most plants from that era, we have no idea of the specific cultivar name. There were many holly cultivars in the plantings made as an early attempt at an arboretum for the university - and no records or maps from that era exist to even indicate what range of cultivars

were planted. Unlike botanical species where keys exist to sort out the various species, cultivars of horticultural plants rarely have keys or taxonomic characteristics to easily sort them out. Botanical taxonomists run for cover when confronted with the impossible task - and even horticultural professionals are stymied when confronted with "lost-name" plants unless the cultivar is quite distinctive.

This point was well made when we hosted the national meeting of the holly society several years ago. I eagerly tied sheets of paper with pens on all the unknown hollies we had inherited and asked the assembled passionate authorities of the genus *Ilex* to identify them for us. Perhaps 2 of the 40 we asked about had any takers who would assign a name. Unknown plants drive curators and visitors wild (and the invariable law of any public garden is that the one plant you are most interested in during your visit will be unlabeled) and there is a constant battle of upgrading the curation of all collections. A recent article by Scott Medbury in *The Public Garden* (from AABGA) on curation suggested "chainsaw upgrading" - and this summer we have adopted this policy on a grand scale through the arboretum with the removal of many fine but unknown plants. It is likely this holly will meet this fate (or be tree-spade dug and moved to campus) as we have 4 of this cultivar this size on the property - occupying space that several dozen choice known plants could occupy.

Everything else in the bed is of more recent origin with most coming in during the last 5-6 years. The next largest plant is the Chinese tree sumac, *Rhus chinensis*, which put on flushes of 5-7' per year when young, now slowed down to 2-3' a year. A spectacular species of sumac which can achieve a size of 30' with a 2' diameter trunk with age - native over a wide range of eastern Asia from Korea to Malaysia and introduced to cultivation in 1737. This native habitat range indicates considerable ecotypic variation in hardiness and performance must exist - but which little research has been conducted on at present. We have 3 trees at various locations in the arboretum - with widely variable characteristics considering the small population. If one is to grow this species it would certainly be best to use the named cultivar, 'September Beauty', developed by Dr. Orton of Rutgers University. This cultivar blooms in September with spectacular 2' wide flower panicles of white, followed by excellent orange-red fall color. It is located in the west arboretum at the south side in the contorted plants collection (by chance, not contorted). The species is propagated by seed; and the cultivar by root cuttings taken in January-March.

Two other sumacs exist in the planting - first the eastern U. S. native shrub, *Rhus aromatica*, "fragrant sumac". Generally a small spreading shrub reaching 5-8' at times with trifoliolate leaves and yellowish flowers in spring. A number of fine cultivars exist and those plants are widely used in the upper-midwest U. S. for commercial landscaping. Fall color is variable among seedlings and would be another characteristic to select for. A second rarity is the small-leaf Texas sumac, *Rhus microphylla* which came to us several years ago from Shannon Smith at Lone Star Nurseries near San Antonio, TX. Its presence remains a surprise to me as it comes from "dry, rocky hillsides or gravelly mesas at altitudes of 2,000-6,000 ft. in west Texas, New Mexico, and Mexican states as far west as Baja California." With such native habitat adaptation, it should have long ago either root rotted in summer or frozen in winter - another reason for planting diverse materials in trials to test such hypotheses. In the wild it reaches 15' in height but has remained about 2-3' high with us for some years now. Propagated by seed.

Several other trees are included in the planting with the showiest the National Arboretum hybrid magnolia, *Magnolia* X 'Galaxy'. This tree is one of the half dozen we most recommend to commercial growers from the over 150 magnolia cultivars in our collection. Structurally it is an outstanding small shade tree to 30' with naturally straight trunk (rare in cutting produced magnolias) and formal symmetrical shape (much like a Bradford pear as much as I hate to admit it). As a youngster it can grow 5-7' a year and is spectacular in bloom with large pink-purple flowers a bit later than most deciduous magnolias to help miss the frosts. It was a 1963 cross between *M. liliiflora* X *M. sprengeri* 'Diva' and is adapted for use in zones 5-9.

David's or the Chinese Peach, *Prunus davidiana* was introduced from China by Abbe David in 1865 and has its moment in very early spring when covered by abundant white flowers as the earliest of the flowering peaches. It has been used in fruit breeding, but the flowers are not "competitive" with other species used for ornamental purposes and is probably never grown for that purpose. But little else is in bloom when it makes its show and we appreciate that contribution.

The last of the deciduous trees in the bed is a fine seedling of the "Chinese" dogwood, *Cornus kousa*, resulting from a collection made during the arboretum's 1985 expedition to Korea with the National Arboretum. A very familiar plant in the landscape industry today with the showy pointed-bract flowers appearing after the native flowering dogwood has finished.

Several conifers add winter interest to the bed with the largest a 12' plant of the blue-grey Baker's Cypress, *Cupressus bakeri*, native to northern California and southern Oregon. One of the best adapted of western conifers in our trials and we have 5 specimens of various ages throughout the arboretum. Rare in commercial nursery trade but young, inexpensive plants are always sold by ForestFarm Nursery (where we got ours). Propagated only by seed. Increasing shade problems in this bed threaten this sun-requiring species and we will probably remove it in the next year or two as other plantings elsewhere can continue its representation.

There are two golden-foliage *Chamaecyparis* selections in the bed representing two fine species. *Chamaecyparis pisifera* is the more vigorous growing species and this unknown cultivar plant is one of numerous golden-foliaged selections readily available in commercial commerce. Very tough and durable in our climate and a good choice as conifers go. The smaller plant is *C. obtusa* 'Confucious' - a beautiful selection which came from Duncan & Davies Nursery in New Zealand. With golden-foliage conifers it is very important that they be planted where they receive direct sun to obtain the brightest foliage color; in shade the gold may fade to insignificance. Both plants are propagated by hardwood cuttings under mist in winter.

Another slow-growing conifer is *Thuja plicata* 'Cuphea' - located on the north side of the large holly. The "western red cedar" has been another of the finest species from the west coast for our conditions (most root rot in our hot, wet summer soils). A number of different cultivars exist and several are planted around the arboretum. This is perhaps the most common of "dwarf" selections of the species in commercial trade with dense slow growth and white to gold new growth. It originated at Rogers and Sons Nursery in Southampton, England about 1930. Our experience with plantings at a variety of sites in the arboretum has shown it requires winter shade here as it will sun-scorch badly when planted where it has bright sun during extreme cold. Propagated by hardwood cuttings under mist in winter.

And one groundcover conifer finishes out the conifer picture - *Juniperus horizontalis* 'Silver Sheen' (again now beginning to be shaded out as the canopy of the bed increases). This has proven to be one of the best of the groundcover junipers with low silvery-blue foliage. It appeared some years ago during the research Mr. Larry Hatch did in assembling the largest collection of cultivars of this species in existence. Our plant came from the University of Tennessee Arboretum and we have promoted it to the nursery industry where it is now beginning to appear from some growers. Propagation is by cuttings at most any time of year when mature wood is available.

The most common of the deciduous shrubs in the planting are two colored-foliage cultivars of spirea. This group of dwarf shrubs has become very popular in recent years for their compact growth (with no shearing required), colorful foliage, and long-flowering season. *Spirea X bumalda* 'Goldflame' has pink flowers and bright gold foliage which tends to fade to green in our summer heat. 'Limemound' is a branch mutation from 'Goldflame' selected and introduced by Monrovia Nursery and is notable for its pale lime-colored foliage in spring which maintains a good color through the summer. The two forms work well in combination with the 'Confucious' cypress discussed above. Both spireas are easily propagated by softwood cuttings under mist in summer.

The arboretum is always promoting winter interest plants and the best of these in this area is the 9' specimen of witch hazel, *Hamamelis X intermedia* 'Primavera'. One of the most widely grown of cultivars and like many, originating in the Kalmthout Arboretum in Belgium and first promoted through the Dutch nursery industry. An extremely vigorous and floriferous cultivar with pale yellow flowers and (I'm told) intensely fragrant. This year with the mild winter providing little cold to break dormancy of flower buds it did not flower until March - but normally it shows off in February. Propagated by side-veener grafting on seedling understock in winter.

The most showy of the deciduous shrubs is the 8' tall and 12' wide plant of *Weigela coreenis* which is covered in bright pink flowers each May - often at peak for graduation exercises held for our horticultural students in this area. One of those overlooked plants as it is fast, easy, tough, cheap, showy - who wants such a thing when you can struggle with weak, expensive plants that have far more "status" in the one-upmanship battles? A Korean species introduced to commerce by Camellia Forest Nursery in Chapel Hill and a delight for a sunny place in the garden (needs room). Very easy from softwood cuttings in summer and fast growing.

Then for the refined and classic garden - the bed offers the very elegant form of Japanese maple, *Acer palmatum* 'Red Filigree Lace'. This is one of the most delicately cut-leaf forms of the innumerable cultivars of this species - with leaflets so thin and fine one wonders how it can photosynthesize fast enough to provide the relatively rapid growth that the cultivar has. I remember being shown one of the first 5 plants in existence by Jean Iseli in Oregon in the early '80's - brand new and very, very "hot" - plants were valued at \$5,000 apiece at that time. It is a reflection of the propagator's art and our wonderful nursery industry that within 5 years one could buy a fine plant for \$25 - and probably less today for a young plant. Now available from N. C. growers and "findable" with a bit of effort - and a most beautiful specimen for any garden.

We finish with 3 bulb crops of great diversity in look and bloom. The late summer bloom of the foot-high spikes of lavender colored flowers of the Korean bulb, *Scilla scillioides*, always surprises everyone - scillas are supposed to bloom in spring.

One of the many items collected in Korea in 1985 which has proved to be very successful in our area - well adapted to our wet, hot soils to the point of actually seeding around in the garden. There is a spring flush of foliage which dies to the ground, and flower spikes emerge in August and September. It has done well both in this bed, and in the lath house. It is now offered by several mail-order nurseries.

The huge (to 10" diameter) deep red blossoms of 'Red Lion' amaryllis (*Hippeastrum* hybrid) in May (and sporadically through this summer to our surprise) are always a surprise to people who have read the garden books that assure us that the plant is only hardy in Florida and California. We have planted a wide variety of hybrid cultivars shared from Dr. Gus DeHertogh's flowerbulb research program and they are increasingly spectacular each spring. We have them in sun and shade, wet and dry - and all seem to do well.

Most familiar are the daffodils which are now planted throughout the arboretum - here represented by 'Rafael' and the very common 'Unsurpassable'. I can never go by this bed but remember one of the "invisible stories" which exist throughout the arboretum. Some years ago when these daffodils were planted we used one of my class labs to plant the bulbs. I had gone throughout the arboretum and placed some thousands of bulbs at correct spacing intervals - and then in class took students through leaving individuals or groups at various beds as necessary to plant - with an estimate that if each student would plant a mere 25-40 bulbs we could get the whole job done in a few minutes. I demonstrated the planting technique and set them to their task as the last of the day - and they could go home when finished. Later in the evening after class when walking by this particular bed I noticed that the bark mulch was largely undisturbed except for an area about a foot in diameter. Upon investigation I found that one individual solved the major problem of a whole 15 minutes of commitment by carefully gathering up all the bulbs, digging one little hole and burying them all together in a single pile. Just one of the varied joyful experiences of teaching - and one of the diverse stories behind plants throughout the arboretum. More stories next time from another exotic bed.

EVERGREEN VINES FOR USE IN THE SOUTHEASTERN UNITED STATES

Original version written for 1992 Southern Nurserymen's Association Research Workers Proceedings

Vines have many valuable design uses in contemporary landscapes from groundcovers, to trellis and arbor coverage, to softening of wood and stone walls, to patio standards for pot culture. Vines are generically easy to propagate by softwood cuttings and grow rapidly in commercial culture - with control of the rampant growth to avoid entanglement the only major production problem. Southern climates potentially allow a wider array of evergreen species for year-round interest than have been used in traditional northern markets. Planting multiple vines in varied genera together for multi-season interest is a practice in its infancy in the landscape field.

As in most areas of plant useage, there are far more potential species for use than are normally found in commercial channels. Carolina jessamine, *Gelsemium sempervirens*, and English Ivy, *Hedera helix*, likely make up over 95% of the current evergreen vine market in USDA hardiness zones 7-9 in the southeastern U. S. Many others remain to be exploited for production and use. During the past 15 years a wide array of evergreen vines have been grown and evaluated at The NCSU Arboretum (now the JC Raulston Arboretum), and others observed in travels to other gardens and nurseries. The following listing briefly describes 47 evergreen vines which have potential for use in the southeastern U. S. Unless mentioned otherwise - all are useful in zones 7-9. Those currently growing in The NCSU Arboretum (now the JC Raulston Arboretum) collection are indicated by an asterisk (*) and locations are usually described.

- *Akebia quinata* 'Shirobana' ('Alba')* - "White-Flowered Chocolate Vine" [Lardizabalaceae]- The species is a vigorous deciduous vine with 5-leaflet compound foliage, purple flowers and fruit introduced from eastern Asia by Fortune in 1845. Climbs by twining stems. This Japanese cultivar has white fragrant flowers and white fruit, and is more evergreen to semi-evergreen in zones 8-9 than the other species and cultivars. Blooms early in spring with very showy ornamental flowers and is much admired by visitors. (Located on the second post on the left hand side of the arbor going into the visitor center).
- *Bignonia (Anisostichus) capreolata* * - "Cross Vine" [Bignoniaceae] - Native throughout the southeastern U. S. and introduced to Europe in 1653. Has 2-leaflet compound foliage with yellowish orange tubular flowers with darker orange-red exterior. Climbs by twining leaf tendrils and will cling to wood surfaces. Rarely grown in the south, though native through much the same range of *Gelsemium* and as showy when in flower. I first heard of the plant when new to North Carolina through a search Brookside Gardens was making to add it to their collections. It was a good reflection of the position of native plants at that time that they had to go to England to purchase a native plant to Virginia since no U. S. growers were producing it - a situation that thankfully has since changed. (A hundred foot run of plants is located on the east fence of the arboretum and makes a stunning display each spring).

A very beautiful deep red-flowered selection, 'Atrosanguinea'* was found many years ago by Mrs. Henry and grew at the Henry Foundation in Philadelphia - eventually entering commercial trade. (Located on the trellis past the nandinas in the east arboretum in the sweetgum collection). In 1991 on a visit to the San Antonio, TX area - plantsman extraordinaire, Scott Ogden shared cuttings of a tangerine-flowered selection in his garden which he indicated had been distributed by the original Ohio-based Wayside Gardens mail-order nursery in the early 1950's (which they now have no record of upon checking for me recently). It was planted on the vine arbor at the volunteers patio outside the arboretum office and was stunning in its first flowering display this spring - wanted by all visitors. We've propagated many cuttings for distribution (as have nurserymen - it will enter the trade again quickly) and will put it out with the name 'Tangerine Beauty'. A yellow-flowered selection has recently been reported from Texas and supposedly is on the way to me - eager to see it; and would eventually would like to grow all 4 color forms together in a mosaic on a totem trellis.

- *Clematis armandii* - "Armand's Clematis" [Ranunculaceae] - Native to central and west China and introduced by Wilson in 1900. Has 3-leaflet compound foliage with fragrant creamy-white flowers in early spring. There are pink ('Apple Blossom'* and 'Hendersoni Rubra') and white ('Snowdrift') cultivars. Climbs by twining growth and a vigorous and spectacular plant when well-established. Will periodically be cold-injured in zone 7, but hardy enough to be of good practical use in that zone. Best used where it will have winter shade to prevent sun scorch on bright, bitter cold days. (Located on the fence to the left of the entrance to the visitor center).
- *Clematis cirrhosa* *- "Winter Clematis" [Ranunculaceae] - Native to southern Europe and Asia Minor and introduced in 1596. Variable foliage ranging from simple to compound with 3 to 6 leaflets and whitish-yellow flowers in midwinter. Climbs by twining stems. Has grown well in Edith Eddleman's garden in recent years but likely will receive some damage in more severe winters; dependable in zones 8-9. *C. cirrhosa* var. *balearica* is a botanical variety from the Balearic Isles with midwinter yellow flowers and reddish purple spots on the interior.

An English cultivar, 'Freckles', received the Royal Horticultural Society Award of Merit in 1989 and was recently introduced to U. S. commerce in the 1990 Thompson & Morgan "private collection" speciality plant catalog. They describe it as follows: "distinctive flowers are bell-shaped creamy-white on the inside, the cream is almost covered with deep red speckles which turn reddish-purple as they mature." (In regards to that offering - I love catalogs like that which indicate the plant is hardy in zone 4 if you grow it in a conservatory greenhouse! Why don't they just go all the way to zone 1? No light in winter?) 'Wisley Cream' is another English cultivar which has unspotted creamy white flowers.

- *Clematis finetiana* - No Common Name [Ranunculaceae] - Native to central and west China and introduced by Wilson in 1908 - closely related to *C. armandii* and very similar but with smaller white fragrant flowers. Not yet tried but should be useful in zones 8-9 and possibly 7.
- *Clematis meyeniana* - No Common Name [Ranunculaceae] - A very wide climatic range in its native habitat from China, Japan, Taiwan and Phillipines would seem to indicate provenance would be very important in hardiness and adaptation - but has not been studied. Though cultivated since 1821, still a very rare species. Reported much like *C. armandii* with white flowers in spring. We originally got a plant from the UBC Botanical Garden which grew in The NCSU Arboretum (now the JC Raulston Arboretum) for several years without blooming - but it was eventually lost in a severe winter - likely a zone 8-9 plant unless from northern provenance.
- *Clematis uncinata* - No Common Name [Ranunculaceae] - Native to western China; discovered by Henry in 1884 and introduced by Wilson in 1901. Dark green compound leaves with large fragrant white flowers in summer. Not seen, but native habitat indicates it should be useful throughout zones 7-9.
- *Decumaria sinensis* - "Chinese Climbing Evergreen Hydrangea" [Hydrangeaceae] - Asian counterpart to our native *D. barbara*; native to central China and introduced by Wilson in 1908. Foliage is simple with obovate shape; intensely fragrant green and white flowers are borne in profusion in late spring. Climbs by aerial rootlets on wood or stone. Seen in Italy and California, and sold commercially in England - I continue attempts to add to our collection for trial - should be hardy in zones 7-9.
- *Gelsemium rankanii** - "Autumn-Flowering Jessamine" [Loganiaceae] - A little-known southeastern species related to the popular "Carolina Jessamine" below which was introduced to commercial trade by Woodlander's Nursery of Aiken, S. C. in the early 1980's. It differs from *G. sempervirens* by flowering in autumn as well as in spring, and in having non-fragrant yellow flowers. Climbs by twining stems. An outstanding plant which has enjoyed considerable growth in commercial success in recent years. It has considerable potential for use as a hanging basket interior plant with a very long bloom season in greenhouse conditions. (Located in the west arboretum in the deciduous holly collection on the left hand side of the first pathway to the right).
- *Gelsemium sempervirens** - "Carolina Jessamine" [Loganiaceae] - The most widely grown evergreen vine in the southeastern U. S. and extremely popular in nursery trade. Native to the southeast (Virginia to Guatemala) and the state flower of South Carolina. Entire simple leaves with bright yellow fragrant flowers in early spring. Climbs by twining stems. The double-flowered form, 'Pride of Augusta', has long been in commercial culture. (Both forms are located across the pathway from each other in the east arboretum past the crepe myrtle collection and before the viburnum cove).

Woodlander's Nursery of Aiken, S. C. introduced a beautiful pale primrose yellow-flowered selection* in 1991 which attracted great attention this spring when it bloomed for the first time. Designers liked the less strident color - and it would be interesting to plant the normal and pale forms together for contrast. (Located on the trellis of the volunteers patio outside the arboretum office).

- *Hedera colchica** - "Persian Ivy" [Araliaceae] - A strong growing vine with the largest leaves of any ivy in the genus, native to the Caucasus and introduced to cultivation in 1850. Makes an excellent groundcover and like all *Hedera* grows on wood and stone with aerial rootlets. (Two extensive colonies - one under the large white oak in the Southall Garden; and under the oaks and hollies north of the winter garden). A cultivar, '*H. colchica* 'Dentata Variegata'', is spectacular with showy golden variegated foliage and other cultivars exist. (Located in the lath house - but now cut back severely for propagation as a 1993 distribution by the arboretum).
- *Hedera helix** - "English Ivy" [Araliaceae] - Probably the most important groundcover for shady areas, and grown world-wide on walls and fences. Native from southern Europe and northern Africa to the Middle East and cultivated since antiquity. Innumerable cultivars exist of widely varying characteristics. Not all cultivars will grow on walls with aerial rootlets. Detailed cultivar information is available from American Ivy Society, P. O. Box 520, West Carrollton, OH 45449-0520 (513-434-7069). (Collection of many cultivars located in the west arboretum along the holly hedge at the south edge).
- *Hedera nepalensis** - "Himalayan Ivy" [Araliaceae] - A rare vine native to the Himalayas introduced to cultivation in 1880. Distinctly different foliage with long, lance-shaped leaves to 7" with wavy margins, and showy yellow to orange fruit on adult flowering branches. Excellent in Raleigh and will be widely distributed by The NCSU Arboretum (now the JC Raulston Arboretum) in 1992. (Located in the lath house).
- *Hedera pastuchowii** - No Common Name [Araliaceae] - Introduced to cultivation from Iran in 1972 by Roy Lancaster and has been hardy in The NCSU Arboretum (now the JC Raulston Arboretum) for the last decade. Attractive but not a distinctively different ivy to a casual observer. (Located behind the early/late border under the purple-foliaged *Prunus X blieriana* tree).
- *Hedera rhombea** - "Korean Ivy" [Araliaceae] - Native to Japan and Korea; dark green roughly triangular leaves. Attractive, hardy and well adapted to southern areas. A variegated cultivar is sold in England. (Located on the north outside wall of the Japanese garden).
- *Holboellia coriacea*, *fargesii**, and *latifolia** - No Common Name [Lardizabalaceae] - Native to China and the Himalayas with various species introduction from 1840 to the 1900's. Leaves are compound with 3 to 7 stalked leaflets. Plants are dioecious, with small but attractive greenish-white flowers in spring followed by large fleshy fruit in autumn if both sexes are present and pollinated. Climbs by twining stems. Virtually unknown in commercial culture but vigorous and attractive vines worthy of production. (Located in the lath house and the volunteers patio trellis).
- *Kadsura japonica* - "Magnolia Vine" [Schisandraceae] - Native to Japan, China and Taiwan and introduced to western cultivation in 1860. Dark green oval to lanceolate leaves and small creamy white flowers similar to small magnolia blooms in spring followed by red fruit in autumn. Climbs by twining stems. Three Japanese cultivars were received from Brookside Gardens, Wheaton, MD in the early 1980's which have become beautiful plants with ornamental character worthy of commercial use. These include 'Shiromi'* - a white-fruited form (at the southwest corner of the volunteers patio), 'Fukurin'* - strongly white/gold variegated and very showy, and

'Chirimen'* - more subtly variegated with white flecks and streaks (both on the posts of the visitor center in the White Garden). Good commercial potential in zones 8-9, and likely hobbyist use in zone 7.

- *Lonicera henryi** - "Henry's Honeysuckle" [Caprifoliaceae] - Native to western China and introduced by Wilson in 1908. Slender-pointed foliage with fine hairs on leaves and young stems and yellow fading to red flowers in early summer. Climbs by twining stems. Rarely seen but of good potential. (Located in the west arboretum near the autumn-flowering golden rain tree).
- *Lonicera sempervirens** - "Evergreen Honeysuckle" [Caprifoliaceae] - Native throughout the southeastern U. S. and introduced to Europe as an ornamental as early as 1656. Spring flowering with orange-scarlet flowers. Climbs by twining stems. Though not common, it is produced in quantity and available with hunting. Several useful forms exist including a botanical form, *L. sempervirens* f. *sulphurea* * which is yellow flowered (both located on trellises in the Southall Garden). 'Cedar Lane'* is a showy coral red selection from Cedar Lanes Nursery in Georgia (located on the volunteers patio trellis), and a variety of "local" selections of individual nurserymen and gardens. (Allen Bush at Holbrook Farms Nursery is also reported to have a very fine selection).
- *Millettia reticulata* *- "Evergreen Wisteria" [Leguminosae] - Native to China and grown commercially in southern California (and shipped to the southeast) but seldom produced in the southeast industry - possibly because it is somewhat more difficult from cuttings than many other vines. I first "saw" it to the point of it registering and impressing me on a visit to the Atlanta Botanical Garden in 1990. (Which incidentally has a superb vine collection and a really beautiful original design arbor to display vines effectively - a must see if your are in Atlanta). The compound foliage superficially resembles wisteria with thicker texture, darker green color and rounded leaflet tips. Purple flowers are borne sporadically through the summer. *Millettia* differs from closely related *Wisteria* in the dehiscence characteristics of the seed pods and in having branched racemes of flowers. (Located on the volunteers patio trellis).
- *Pileostegia viburnoides* *- No Common Name [Hydrangeaceae] - Native to India and south China and introduced by Wilson in 1908. A slow-growing shrubby "vine" which climbs wood and stone walls by aerial roots with much the same character as *Hydrangea anomala* ssp. *petiolaris*. Creamy white flowers in terminal panicles in mid-summer. Would be a beautiful and choice collector's plant well adapted in zones 8-9, but growth rate is too slow when young to be profitable for major commercial impact. Our plant on the outside of the visitor center as you enter the White Garden is between the wall and the first planter (never noticed by anyone until this report I'm sure) - and has grown only about a foot and a half in the last 8 years (please don't take cuttings with this slow growth rate).
- *Rubus henryi* - "Henry's Raspberry" [Rosaceae] - Native to central and west China and introduced by Wilson in 1908. Leaves are dark green and deeply 3-lobed with white pubescence on the underneath side. Flowers are pink and are produced through the summer followed by edible black fruit. "Climbing" is through long irregular scandent growth which can reach 20' with support. It root suckers and would probably best be used in confined areas or pots for control in the garden.
- *Rubus parkeri* - "Parker's Raspberry" [Rosaceae] - Native to central China and introduced by Wilson in 1907. Leaves are oblong-lanceolate with wavy toothed margins and have densely reddish brown pubescence beneath. Small white flowers are produced in summer followed by black fruit. Growth and spread are as above, though stems are reported to be biennial and will likely need frequent pruning maintenance.
- *Smilax* sp.* (*aurifolia* ?) - "Evergreen Smilax" [Smilacaceae] - Native to the southeastern U. S. and a somewhat important local "status symbol" plant in the Raleigh area (similar to the use of boxwood in Virginia) with it trained across the top railing of porches or over doorway arches where the branches can reach 25' in length. It cannot be propagated by stem cuttings and seed are difficult resulting in a shortage of plants as they are available only through division of established clumps. Very beautiful plant and highly desired in spite of quite expensive retail prices, but not a commercial mass-market selection.
- *Stauntonia hexaphylla** - No Common Name [Lardizabalaceae] - Native to Japan, Korea and Taiwan and introduced to western cultivation in 1874. A vigorous, coarse textured plant with compound leaves of 3-7 stalked leaflets. Flowers are whitish tinged with lavender and appear in spring. Fruit are reported to be purple and egg-shaped but in a decade have never appeared on our plants in Raleigh. Climbs by twining stems. A rare Japanese cultivar, *S. hexaphylla* 'Cartwheel', with white variegated foliage was introduced to the U. S. by Brookside Gardens, Wheaton, MD but has not appeared particularly attractive in our trials. (Both forms located in the lath house).
- *Trachelospermum asiaticum* - "Japanese Star Jasmine" [Apocynaceae] - Native to Japan and Korea and often grown in the deep south as a groundcover as well as for trellises. Often confused with the following species but has smaller foliage, yellowish white flowers and is more cold hardy. Climbs by twining stems. There are a large number of cultivar selections in Japan which are at times available from U. S. specialists. We've planted them many times in the arboretum - but they are perhaps the most susceptible to rabbit grazing of any plant tried over the years - and rarely last long with tiny leafless stubs sticking out of the ground.
- *Trachelospermum jasminoides* - "Confederate Jasmine" [Apocynaceae] - Native to central and south China and Taiwan and introduced by Fortune in 1844. One of the most common landscape plants in zone 9 where it is used as a groundcover. In contrast to the above species, it has larger and coarser foliage and white flowers. In the severe winter of 1985 both species were severely damaged in areas where they had been commonly used. Symmes Nursery found a selection with superior hardiness that was uninjured that year and it has been introduced under the name of 'Madison'*. (Located on the volunteer patio trellis - and as an ironic counterpart to the above notice about rabbits - we nearly lost a beautiful plant last week when a dog chasing a rabbit frantically dug out the entire bed trying to get to it hiding in a drainage pipe. The rabbit escaped through the other end of the pipe we are sure - but soil and a large assortment of plants were scattered over a 15' radius on the patio. With pruning and replanting - it appears 'Madison' is going to survive).

A wider spectrum of evergreen vines are available for commercial production and use in the southeastern U. S. than are currently used. Of the 47 taxa described above, the following 11 are potentially the most "commercial" for potential production expansion: *Akebia quinata* 'Shirobana', *Bignonia capreolata* (tangerine selection), *Clematis armandii* 'Apple Blossom', *Clematis cirrhosa*, *Gelsemium rankanii*, *Gelsemium sempervirens* (pale yellow selection), *Hedera colchica* 'Dentata Variegata', *Hedera nepalensis*, *Kadsura japonica* 'Fukurin', *Lonicera sempervirens* 'Jane Symmes', and *Trachelospermum jasminoides* 'Madison'. With hunting through the many plant specialists favored by those who follow The NCSU Arboretum (now the JC Raulston Arboretum) proceedings closely - many more are available for trial and use by fevered garden hobbyists.

AN OVERVIEW OF "ANISE TREES" (*ILLICIUM*)

Original version written for 1991 Southern Nurserymen's Association Research Workers Proceedings

About 40 species of *Illicium* (anise tree) in the Illiciaceae (or Magnoliaceae) family exist as broadleaf evergreen shrubs or trees native to temperate and subtropical regions of southeast Asia and the southeastern United States and West Indies (2,4, 8, 9). The strong aromatic fragrance of the leaves supposedly "allures" and "entices" one, attributes that became translated into the Latinized name *Illicium* (1, 2, 3, 7, 8, 9). The aromatic fragrance is often cited as a "strong anise" odor (1, 2, 9), but not all species have an anise aroma (3). The genus is underutilized as one of superior ornamental landscape plants (1) noted for their aromatic, glossy, evergreen foliage, showy flowers, hardiness, and lack of serious pest problems (1, 2, 3, 6, 9). The species are reported to prefer moist, well-drained soils with high organic matter (2, 6), but all are growing well in heavy clay soils at The NCSU Arboretum (now the JC Raulston Arboretum). The species are reported as shade tolerant (2, 6) and a common industry perception exists that only *I. parviflorum* is sun tolerant. However, once established, all will grow well in full sun with more compact growth and more profuse flowering than in shade. All are easily propagated from cuttings under mist at most any time of year when mature wood is available. Native species are reported easy from seed with no special treatment required (2) . No serious biological problems commonly exist.

Perhaps the largest collection of *Illicium* taxa in the U. S. (12 forms) is under evaluation in The NCSU Arboretum (now the JC Raulston Arboretum) for cultural and ornamental characteristics in USDA zone 7. The following list summarizes taxa in U. S. cultivation and their ornamental attributes. Invalid synonyms are presented in parentheses. Plants in The NCSU Arboretum (now the JC Raulston Arboretum) collection are followed by an asterisk (*). The accompanying table provides a quick overview of some identification characteristics.

- *Illicium anisatum* (*I. japonicum*, *I. religiosum*) * - Anise Tree. A 6-25' shrub/tree native to China, Japan, Korea, Ryukyus and Taiwan with medium-textured, broadleaf leaves with an anise aroma when crushed. The mid-spring flowers are showy, whitish with a creamy-yellow hue as they mature, 1-2 inches in diameter, with 17-24 petaloid segments. Most plants currently sold in commercial trade in the southeast U. S. under this name are actually *I. parviflorum* with which it is often confused. (1,3, 7). Possibly the least hardy of the five species discussed here with probable adaptability to USDA zones 7-9 with periodic injury in severe atypical winters of zone 7.
- *Illicium anisatum* 'Pink Stars' * - A seedling variant with increased anthocyanin pigment in the plant - first noted and commented on at The NCSU Arboretum (now the JC Raulston Arboretum) by Mike Dirr on a visit several years ago. New shoot growth is crimson and fades to green. Flowers are pink in the bud stage, and gradually fade to white as the flower opens. This clone is being propagated and built up in numbers with the first distribution to occur at the NCAN plant distribution in Asheville, NC August 1992.
- *Illicium anisatum* 'Variegata' * - Two similar Japanese clones bear this name and both have irregular white stripes through the leaves. Small cuttings of these clones recently received from Japan do not yet show distinctive features to enable one to separate them.
- *Illicium floridanum* * - Florida Anise Tree. A 6-15' shrub/tree native to the Florida panhandle, southwest Georgia, and westward through Alabama, Mississippi and into Louisiana (5) ranging from 6-15' high. Leaves are pointed and lanceolate, heavy textured, often drooping, and bear a strong rank odor with a weak anise odor in the background. The late spring flowers are showy, maroon/purple, 1-2 inches wide, with 21-33 petaloid segments and the aroma of decaying fish. This species often reblooms in autumn following drought stress. Has withstood -10F in N. C. without injury and is probably adapted to USDA zone 6-9. Now available at most garden centers with increased industry interest and production in recent years.
- *Illicium floridanum* 'Alba' * - A chance seedling selected by Chris Early in the wild in Mississippi in 1982. Attractive clone with white flowers in contrast with the dark green foliage. Dirr (2) quotes a report that white and pink flowered forms are found intermixed with the red flowered type in the wild.
- *Illicium floridanum* 'Compactum' * - A clone listed by one southern nursery but observation at The NCSU Arboretum (now the JC Raulston Arboretum) shows no dramatic differences from the normal species in growth rate or size. The foliage does seem somewhat shorter and wider, and as the plant ages it does begin to seem more distinctly different.
- *Illicium floridanum* 'Halley's Comet' * - A chance seedling selected by John Allen Smith of Magnolia Nursery, Chunchula, AL in the wild near De Funiak Springs, FL, and formally named by the nursery in 1986 when Halley's Comet appeared. It is reported to have larger flowers, more flowers per inflorescence, and heavier summer and fall rebloom than typical for the species, but I have not been able to tell significant difference between the two in our arboretum plantings.
- *Illicium floridanum* (Unnamed Pink Selection) * - A chance seedling selected by Chuck Salter of Salter Tree Farm, Madison, FL in the wild in northwest Florida in 1987. First offered for sale by Woodlander's Nursery, Aiken, SC in 1991.
- *Illicium floridanum* (Unnamed Variegated Selection) - A chance selection made by Steve Riefler of Green Images Nursery, Christmas, FL in the wild in northwest Florida about 1984. In build-up stage at several nurseries, but not yet offered for sale. The variegation is reportedly a yellow random striping/banding on a green background.

- *Illicium henryi** - Henry's Anise Tree: A 6-20' shrub/tree from western China with glossy green leaves. The late spring flowers are showy with color ranging from pink to deep crimson in the wild, but only the pink form is in U. S. commerce at present, with 1/2 to 1 inch flowers with 10-14 segments. Very rare in cultivation in the U. S. and those in the southeast U. S. probably all originated from a plant brought to the U. S. in 1972 from Hillier's Nursery in England. Hardiness unknown - probably adapted to USDA zones 7-9. A beautiful, dense conical plant over 12' tall exists at Woodlander's Nursery in Aiken, SC.
- *Illicium mexicanum** - Mexico Anise Tree: A rare shrub native to Mexico. Those presently in southeast U. S. trade probably all originated from a single plant brought to this country by Harold Hopkins of Washington, DC and given to the U. S. National Arboretum. Woodlander's Nursery obtained cuttings from this plant and were the first to offer it for commercial sale. It is very similar in appearance to *I. floridanum*, and probably evolved as an ecotype variant of that species as did many other woody plants of southeastern America (e.g. *Cercis mexicana* as a variant of *Cercis canadensis*) - in fact, a published distribution map of *I. floridanum* (5) shows an isolated Mexico population. It is noted to flower almost continuously through the summer and into the fall in contrast to the more focused spring bloom period of *I. floridanum*.

The NCSU Arboretum (now the JC Raulston Arboretum) obtained wild-collected Mexican seed of this species in 1991 from Yucca Do and Peckerwood Gardens Nursery in Waller, TX and now has 45 seedlings for future observation on variability and performance. The seedlings are showing very marked variation in growth rate, foliage size, and flowers and we will continue to watch them to see if particularly distinctive forms show. The first plant to flower (at about 12 months age) had a showy deep red flower quite different than anything seen in other plants of this genus so far. An outstanding ornamental plant. Probable adaptability to USDA zones 7-9.

- *Illicium parviflorum** - Small-Flowered Anise: A north-central to central Florida (5) native shrub/tree 10-20' high with ascending obtuse foliage with a strong anise aroma. The early summer (June-July) flowers are small, inconspicuous, greenish-yellow, with 1/2 inch flowers of 12-15 segments and appear long after all other species flower. It is currently in rapid increase in popularity in the nursery trade as a replacement for "red-tip" photinia, *Photinia X fraseri* for use in hedges and screening and can be bought at most garden centers in the state now. It becomes large enough to limb up to form a small multitrunk tree in the landscape and works very well as a container-grown patio plant. It is often mistakenly sold as *I. anisatum* and has been published as being native to Japan (6). Probable adaptability to USDA zones 6-9.

Collections of the above plants are located in two areas in The NCSU Arboretum (now the JC Raulston Arboretum). A shade habitat planting is located in the bed beside the farm office/classroom building opposite the arboretum entrance arbor. The largest group is in the west arboretum in the last of the four long narrow beds which go off to the west of the open hillside lawn you look down in entering that section of the arboretum - this planting is located in full sun and comparisons of the two plantings will show the difference in sun/shade growth.

Use of *I. floridanum* and *I. parviflorum* is rapidly increasing in the southeast U. S. nursery trade with the discovery of greater hardiness than expected following the record winter of 1985 when many other broadleaved evergreen shrubs were severely injured or killed in the south. Both species are excellent ornamentals deserving of greater use, and new cultivars and other existing species also offer much potential for trial and production. There is great need for nurseries to correctly identify and name the plants they are offering to eliminate the widespread existing *I. anisatum* vs. *I. parviflorum* confusion which exists. *I. henryi* is probably the most beautiful species and needs much greater production and use - probably currently available only from Woodlander's Nursery.

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Table 1. Comparisons of *Illicium* species cultivated in the southeastern United States.

Species Foliage Flowers Fruits

Leaf Apex Shape Season (Raleigh, NC) Diameter

Number Lateral Veins Color Segment Number

Odor Petal Number Segment Length

Petal Length

I. anisatum Obtuse/Short-Acuminate Spring (April) 24-30 mm.

4-6 Pairs White to Yellowish 8 Segments

Anise Odor 17-24 Petals 12-15 mm.

11-23 mm. Long

I. floridanum Acuminate Spring (April) 26-36 mm.

6-10 Pairs Maroon (White, Pink*) 10-15 Segments

Rank, Weak Anise Odor 21-33 Petals 13-18 mm.

15-27 mm. Long

I. henryi Acuminate Spring (April) 24-40 mm.

5-8 Pairs Pink (Crimson*) (6-7) 8 Segments

Weak Anise Odor 10-14 Petals 12-20 mm.

6-10 mm. Long

I. mexicanum Acuminate Spring (April) to Fall Unknown

6-9 Pairs Maroon 19-21 Segments

Weak Anise Odor 24-33 Petals Unknown

15-20 mm. Long

I. parviflorum Obtuse Summer (June/July) 20-30 mm.

4-7 Pairs Dull Yellowish 10-13 Segments

Strong Anise Odor 12-15 Petals 10-15 mm.

* Other color form(s) existing within species or as selected cultivars.

AN OVERVIEW OF "GRAPE-HOLLIES" (*MAHONIA*)

Originally prepared for a display of plants presented by The NCSU Arboretum (now the JC Raulston Arboretum) for the North Carolina Association of Nurserymen short course in Winston-Salem, NC, January 1990

Mahonias and Barberries are closely related genera in the family. Mahonias have divided leaves and spineless stems, whereas (most) barberries have undivided leaves and spines on stems. The genus was named after the pioneer American horticulturist Bernard M'Mahon of Philadelphia (McMahon's American Gardener - the first garden encyclopedia published in America). Mahonias are yellow-flowered, broadleaved evergreen groundcovers, shrubs and small trees from North America (Mexico to Canada) and Eastern/Southeastern Asia with some 70-100 species ranging from 6" to 30' in height. Fruit are normally black with a bluish bloom. Nearly all mahonias prefer a semishaded area (winter shade particularly). The species with small, blue-green leaves come from desert regions and thrive in a well drained soil in full sun. The others (all of those commercially available in NC) prefer a moist, humus soil. A number of the Asiatic species will flower in mild areas during winter from October to March. Many have fragrant flowers.

Since most species have rarely been cultivated or compared in climatic trials - little real data exists on true hardiness zonation. KZ is used here to present the Krussman zone ratings. Like many European ratings they often reflect lack of summer heat which may give increased hardiness. The NCSU Arboretum (now the JC Raulston Arboretum) (Zone 7) successfully grows many plants commonly rated Z8-9 in Europe. The majority of Mahonias have been rated as Z9 by Krussman - many are likely more hardy than this. RZ is a Raulston zone estimate for NC. DZ is a Dirr zone rating based on the Arnold, not USDA, zone system. At this point The NCSU Arboretum (now the JC Raulston Arboretum) has one of the largest collections of Mahonia in North America, and possibly the only complete set of English hybrids.

The species are grown from depulped seed - in general 3-6 months cold stratification is required for most; sub-tropical species need no cold stratification; *M. aquifolium* is reported better with 4 months warm stratification followed by 4 months cold stratification. Named cultivars are propagated by leaf-bud cuttings using a leaf with a portion of the stem at the base of the leaf petiole to maximize the limited propagation wood normally available - thus each leaf can yield a new plant. It is important to realize mahonias have compound leaves, and pieces of leaves (i.e. leaflets) cannot be used for propagation - which beginners often mistakenly try. Mahonias often

available commercially in N. C. are highlighted in bold type. Mahonias in the collection of The NCSU Arboretum (now the JC Raulston Arboretum) are prefaced by an asterisk (*). Letters following the plant name in brackets refer to the source of information given at the bottom of the list.

- *M. acanthifolia* (HK) Nepal, KZ9, 10-15'. Spectacular but tender species.
- **M. aquifolium* (ADHKT) Western N. America, KZ5, DZ4-8, 3-6'. Widely grown, very hardy, excellent.
- *M. aquifolium* 'Apollo' (DK) Holland '73 - Low & broad, dense heads of golden color, good groundcover.
- *M. aquifolium* 'Atropurpureum' (DHK) Holland before '15 - Low & broad, bronzed in winter.
- **M. aquifolium* 'Compacta/Compactum' (ADT) 2-3', very glossy leaves, bronze winter color.
- *M. aquifolium* 'Donewell' (K) USA Cv. - Broad, arching.
- *M. aquifolium* 'Forescate' (K) Holland '75 - 3', many branched, large lf, bronzed in winter.
- *M. aquifolium* 'Golden Abundance' (D) - heavy flowering and fruiting, bright green foliage.
- *M. aquifolium* 'Gracilis' (T)
- *M. aquifolium* 'Heterophylla' (HK) - Also considered *M. toluacensis* or *M. X heterophylla*. 3'
- **M. aquifolium* 'King's Ransom' (D) (also considered *M. X wagneri* cv. - see below).
- *M. aquifolium* 'Mayhan' (AD) - glossy foliage and fewer leaflets on leaf, 2-3'.
- *M. aquifolium* 'Moseri' (DHT) - bronzy to orange red new foliage turning to dark green with age.
- **M. aquifolium* 'Orange Flame' (Orangee Flame) (DK) Ohio '65 - Low & broad, orange new growth. Susceptible to rust & powdery mildew.
- *M. aquifolium* 'Smaragd' (Emerald) (D) glossy emerald green leaves, bronzy purple in winter.
- *M. aquifolium* 'Vicarii' (T)
- *M. aquifolium* 'Woodland King' (A)
- *M. aquifolium* 'Woodland Queen' (A)
- *M. aquifolium* X *pinnata* (H)
- *M. aquifolium* X *repens* 'Rotundifolia' (H)
- *M. arguta* (K) Mexico, KZ9, 3-5'.
- **M. bealei* (ADHKT) China 1845, KZ6, DZ6-9, 3-6'(12'). Most common species in NC - great plant.
- *M. bealei* X *napaulensis* (H)
- *M. californica* (T) California, 6-10'
- * *M. chochoa* (no reference) Mexico. To 15' with fragrant winter flowers.
- * *M. confusa* (no reference) China, RZ7, 3'. First seen in China; doing well at NCSU - early fall flowering.
- *M. dictyota* (KT) Arizona, California, KZ9, 3-6'.
- *M. eutriphylla* (HK) Mexico, KZ9, 1'.
- *M. fendleri* (V)
- **M. fortunei* (ADHKT) W. China 1846, KZ8, DZ8, 3-5'. Coastal use only - handsome small plant.
- *M. fremontii* (AHVKT) SW US 1895, KZ9, 3-9'.
- * *M. gracilis* (KT) Mexico 1900, KZ9, 3-5'. Reported to go to 10' and handsome multistem small tree.
- *M. gracilis* 'Compacta' (T) (material offered under this name is probably cv. of *M. aquifolium*).
- * *M. haematocarpa* (HVK) Texas, Colo., New Mex. to Calif., KZ9, 5-9'.
- *M. higginsiae* (T) (also listed as *Berberis higginsiae*). S. Calif & Baja.
- * *M. japonica* (ADHKT) Japan, KZ7, DZ6-8,3-9'. (a debate if it exists in US - very confused with *bealei*).
- *M. japonica* 'Hiemalis' (K) England '75, KZ8, 5'.
- *M. japonica* X *napaulensis* (H)
- * *M. lancefolia* (no reference) - Mexico. Reportedly with huge foliage and flowering racemes - very spectacular.
- * *M. lomarifolia* (AHKT) China, Yunnan, Burma '34, KZ9, RZ8, 10-20'. Spectacular plant - coast only.
- *M. magnifica* (K) India - not yet cultivated.
- * *M. mariei* (no reference) - China. Large type with foliage rosette to 4', showy flowers. RZ7?
- *M. napaulensis* (HK) Nepal 1850, KZ9, 4-6'.
- * *M. napaulensis* 'Maharajah' (Bean's Manual) - India. Books say not hardy, but at NCSU now 3 years.
- * *M. nervosa* (ADHKT) Western N. America 1826, KZ6, DZ5, less than 1'.
- *M. nevinii* (AHKT) California, KZ9, 2-7'.
- *M. pinnata* (HKT) California to Mexico 1819, KZ9, 1-3'(10').
- *M. piperiana* (KT) California, Ore., KZ7, 1-6'. ("Similiar but somewhat superior plant to *M. aquifolium*").
- *M. pumila* (HKT) Ore.-Calif., KZ9, 1'.
- * *M. repens* (ADHKVT) West. N. Amer. 1822, KZ6, DZ5, 1-3'.
- *M. repens* 'Rotundifolia' (K) France cv. 1875, new growth yellowish to pink, abundant flowers.
- *M. schiedeana* (Bean's Manual) Mexico '38, 7-15'
- *M. siamensis* (K) Siam, Burma '31, KZ10, 12' - "most attractive sp. of the entire genus", rare in cultiv.
- *M. sonnei* (K) California, KZ9, 1'.
- *M. swaseyi* (AHKV) Texas '07, KZ9, 3-5'. Spectacular plants in wild in Texas - need cv. selections.
- **M. trifoliolata* (HKVT) Texas, New Mexico to Mexico 1839, KZ9, 3-7'.
- *M. trifoliolata glauca* (H)

- M. wilcoxii (V)
- M. X 'Aldenhamensis' (H) - (M. pinnata X M. aquifolium).
- * M. X 'Arthur Menzies' (AD) - (M. bealei X M. lomarifolia). Seattle '61, DZ7-9, RZ6, 6-9'. Magnificent!
- M. X 'Golden Abundance' (A) (listed above as M. aquifolium cultivar rather than hybrid)
- M. X media - (M. japonica X M. lomarifolia crosses). DZ8-9, RZ6-7. All excellent & needing production.
- * M. X media 'Buckland' (DHK) Developed by Lionel Fortescue, England '71.
- * M. X media 'Charity' (ADHK) Chance seedling Windsor Great Park, England '55, KZ9/RZ6, 6-15'.
- * M. X media 'Faith' (DK) Seedling of 'Charity' from Windsor Great Park '72.
- * M. X media 'Hope' (DK) Seedling of 'Charity' from Windsor Great park '66.
- * M. X media 'Lionel Fortescue' (DK) Developed by Lionel Fortescue, England '71.
- * M. X media 'Winter Sun' (DHK) Developed in Ireland '70.
- M. X 'Skylark' (A)
- M. X wagneri (AHK) (M. aquifolium X M. pinnata) 1863, KZ8, 7'
- M. X wagneri 'Fireflame' (K) Holland D'55/I'65, somewhat susceptible to powdery mildew.
- * M. X wagneri 'King's Ransom' (K) USA, 4-5'.
- M. X wagneri 'Moseri' (K) France 1895, 4'.
- M. X wagneri 'Pinnata' (K) '30, no fruit.
- M. X wagneri 'Undulata' (K) Ireland '30, (also considered M. aquifolium 'Undulata').
- M. X wagneri 'Vicaryi' (K) England '31, 3'.
- X Mahoberberis - Bigeneric hybrids between Mahonia and Berberis species.
- X Mahoberberis aquicandidula (M. aquifolium X B. candidula) Org. Sweden 1943. DZ5-6.
- * X Mahoberberis aquisargentii (M. aquifolium X B. sargentiana) Org. Sweden 1948. DZ6.
- * X Mahoberberis miethkiana (M. aquifolium X B. sargentiana) Org. USA 1940.
- * X Mahoberberis neubertii (M. aquifolium X B. vulgaris) Org. France 1854. DZ6.

A - Commercial Sources are listed in Anderson Horticultural Library Source List of Plants and Seeds - a 214 p. book listing sources of 45,000 different ornamental plants. \$29.95 from Andersen Hort. Library, Minnesota Landscape Arboretum, 3675 Arboretum Drive, Box 39, Chanhassen, MN 55317.

D - Discussed in "Manual of Woody Landscape Plants" by Dr. Michael Dirr.

H - Discussed in "Hilliers Manual of Trees & Shrubs".

T - Discussed in "Hortus Third".

V - Discussed in "Trees, Shrubs & Woody Vines of the Southwest" by Robert Vines.

PLANTS DISTRIBUTED TO NCAN NURSERYMEN

NCAN Short Course and Trade Fair - Asheville, NC - August 24-25, 1991

(Most members who comprise the Friends of The NCSU Arboretum (now the JC Raulston Arboretum) are not in the professional nursery/landscape trade, but are serious gardeners or people who want to support the continuation of the arboretum as a state resource. Beyond the arboretum use as a university teaching resource and display garden for the public, there is also the very important outreach to the commercial industry. Each year plants are taken to the North Carolina Association of Nurserymen's meeting for display, and thousands of plants are also propagated for free distribution as an incentive to try to encourage nurserymen to grow some new crops. To allow our "Friends" to have a feel for this outreach, I am again as for many years, including here the information on plants distributed at the 1991 meeting as these may be plants which will appear in garden centers for the public in the future - and of course many of the extras from this distribution end up in the autumn members plant giveaway so many of these are now in your gardens under trial. Note - the supply of plants distributed at the meeting has been exhausted and these plants are no longer available by request.)

Each year a selection of plants from The NCSU Arboretum (now the JC Raulston Arboretum) is made for propagation and distribution to N. C. nurserymen at the summer short course as a means of spreading new or uncommon plants through the state for further observation and perhaps commercial production. This program has been underway since 1980 and ca. 50,000 plants of 240 different species and cultivars have been given to growers since its inception. Selection of plants is based on plant ability to be propagated when the Department of Horticultural Science propagation benches are empty, size of stock plants in the arboretum adequate to allow taking of 200-300 cuttings, and absence in the existing commercial industry. Plants will vary in commercial potential with some having great potential - others merely curiosities for adaptation study or hobbyist collector-type items.

These plants provided for growers represent just a sample of the 5,000 species and cultivars presently growing in The NCSU Arboretum (now the JC Raulston Arboretum). Commercial growers are most welcome at any time to come to the arboretum to collect (under our supervision) propagation material to provide stock plants for their operations. We do request for nurserymen collecting plants from the

arboretum for the first time, an appointment be made (call 919-515-3132) to coordinate which materials may be collected and our general guidelines for collection procedures. Dozens of growers now gather many hundreds of thousands of cuttings annually in this manner.

SPECIAL 1991 NOTE: Some of the most important and innovative work with woody plants in the U.S. today is being done by John Fairey and Carl Schoenfeld of Yucca Do Nursery (Excellent mail order catalog from: FM 359, P. O. Box 655, Waller, TX 77484 [409-826-6363]) with over 30 seed collecting expeditions to the mountains of Mexico to preserve very rapidly disappearing germ plasm and to introduce new species to cultivation. They have been exceptionally generous in sharing this rare and precious seed with The NCSU Arboretum (now the JC Raulston Arboretum) and 5 of our 26 plants being distributed this year have come from their efforts. We have grown over 7,000 plants from their seed this year alone for distribution across the country for further testing of climatic adaptability of these exceptionally rare plants. With the usual financial stress of small nursery businesses and the high cost of their collection activities (over \$1,000 per trip) - any contributions to their program either as gifts or in purchases of plants from them would help them in the most important preservation and introduction work they are doing so magnificently. We are extremely grateful to them for their very active support of our trial and evaluation program.

(We also very much appreciate the long, diligent efforts of a whole team of Friends of The NCSU Arboretum (now the JC Raulston Arboretum) volunteers who spent a week individually labeling and bagging the 5,200 plants in this distribution).

1. *Abutilon* sp. - Orange-Flowered "Hardy" Flowering Maple (Malvaceae). "Flowering Maples" are herbaceous flowering plants so named because the foliage often closely resembles that of maple trees. Most come from South America and the ones in current commercial use would be considered as annual bedding plants in N. C. due to lack of cold hardiness. The unnamed cultivar being distributed was discovered as a persistent hardy perennial on an estate garden on Long Island, New York. It was brought to a garden in the Richmond, VA area where Darrin Duling grew it for several years and eventually gave it to us for trial. It will be handled as a herbaceous perennial reaching 6' in height by autumn and in bloom for 5 to 6 months each summer with orangish-red flowers. We do not know how far west in North Carolina it will be dependably hardy and are distributing plants for growers to experiment with. Abutilons are extremely easy to root from softwood cuttings and at the beginning a grower might want to carry a plant through winter indoors until more is known (and particularly so on these young plants being distributed so close to fall). Mulching of the crowns after plants die down in autumn will probably be helpful in increasing potential range for use. (Located in the arboretum mixed border).
2. *Alnus nepalensis* D. Don. - Nepal Alder (Betulaceae). There are about 35 species of Alders from around the world - generally tolerant of poorly drained and wet, marshy sites; easy to propagate from seed or cuttings; fast-growing; with interesting and attractive winter catkin flowers and cones; and they fix nitrogen in the roots thus "providing" their own fertilizer in a sense. Nepal Alder was discovered in 1880 in the Himalayas, Nepal and Yunnan, China and is considered one of the most beautiful in flower (which occurs in fall rather than winter as do most species). It is reported as a 25-35' tree with dark grey bark hardy to zone 7 (note - zone in Krussman; the U.S. adaptation may be different than Europe). These plants were grown from seed provided by Professor Pan Zhigang of the Beijing Botanic Garden, Beijing, China (NCSU 90/0168). Probably the best commercial use is for flood plains, water edges, etc. where few other broad-leaved woody plants grow well - although it will also make a fine specimen in open lawn areas. (Still in our nursery).
3. *Angelica gigas* - Giant Wild Parsnip (Umbelliferae). The genus is a group of about 50 species of herbs native to the North Hemisphere. Seed for this Korean plant (recently introduced by Barry Yinger) came from the Arnold Arboretum. It is grown as an annual/biennial and once established with annual seeding it can make a spectacular show with enormous stalks of flowers and seed-heads like giant candelabra reaching up to 6' in height. The seed heads can be collected and dried for flower arrangements. The small seedlings provided should be planted out in the garden where they will overwinter and received the chilling necessary to expand and bloom next summer. Best in shade in the Piedmont; fine in sun in the mountains. Propagated only by seed. (Located in the perennial border).
4. *Aspidistra elatior* Ker-Gawl. 'Asahi' - 'Asahi' Cast Iron Plant (Liliaceae). The cast iron plant is well known horticulturally - grown as a 1-2' tall groundcover in zones 7-9 and as an extraordinarily tough interior plant tolerant of very low light and drought stress. This cultivar was obtained on the arboretum's 1985 expedition to Korea and has taken 5 years to build enough plants for distribution. Originally we had the name of 'Akebono' (under which it was distributed to a number of recipients) - and only a few weeks before the NCAN show did we determine the true name to be 'Asahi'. It is white variegated but differs from the common variegated form by having pure white tips which gradually fade back to solid green about a third down the leaf (see photo on display). These divisions do not show the variegation which appears later on more established plants. Plants are easily propagated at any time of year by division of clumps with each leaf having a section of stem with roots attached. It will generally produce 3-5 divisions per year from a single crown. (Located in the arboretum lath house).
5. *Buddleia davidii* Franch. 'Pink Delight' - 'Pink Delight' Butterfly Bush (Loganiaceae). The butterfly bushes are well-known as summer flowering deciduous shrubs. Gert Fortgens, the director of the noted Boskoop Nursery Crops Experiment Station in Holland - indicated that this recently developed Dutch cultivar was the finest one and subsequently it has become the most widely produced cultivar in Europe. It has true deep pink flowers (even in our heat) with panicles 12-15" long, long grey leaves, compact growth habit but likely to 5-7' eventually, and is extremely free flowering. Very easy from softwood cuttings all summer. Adapted for use throughout N. C. (Located on the west side of the entrance road to the arboretum parking lot - growing through the rail fence).
6. *Buxus sempervirens* L. 'Graham Blandy' - 'Graham Blandy' Boxwood (Buxaceae). There are innumerable cultivars of this fine broadleaved evergreen shrub with infinitely variable characteristics. This cultivar recently originated at the Graham Blandy Farm (University of Virginia State Arboretum) in Boyce, VA. It is the most tightly fastigate cultivar in existence. Plants can be 8' tall and 1'

- in diameter. We have had up to 2' of growth per year. As with most tightly fastigate plants, in areas with snow and ice, it should be spiral string-wrapped in winter to prevent branches from pulling out of the tight form. Cuttings can be easily rooted at most any time of year. (Located on either side of the akebia arbor at the entrance to the arboretum visitor center).
7. *Camellia japonica* L. - Hardy Korean Camellia (Theaceae). In 1985 the U. S. National Arboretum and the Morris Arboretum traveled to the northernmost range of this species in Korea to collect germ plasm with greater hardiness than any currently in cultivation. The cuttings being distributed are from our 20 seedlings now 2-3' in height and beginning to bloom with single red flowers. They will likely be dependably hardy to at least -15F and offer potential for flowering camellias for western N. C. Propagated at any time of year when mature wood is available. (Located to the northwest of the Unit 4 farm office/classroom building; to the right as you enter the Southall Garden).
 8. *Carpinus* sp. (El Ciego, Mexico) - Mexican Ironwood (Carpinaceae). One of the Mexico seed collection plants from Yucca Do Nursery mentioned at the beginning. Taxonomic verification is still in process but it seems likely this will be a new species in cultivation for the first time. We are distributing it with hopes of eventual feedback on adaptation throughout the varied climatic regions of N.C. All Ironwood trees are handsome small deciduous trees with beautiful trunks and make excellent landscape plants. Normally grown from seed (cold stratify) - but on young plants softwood cuttings can also be rooted (as we've done with some of these to multiply our seed population). (Still in nursery; not planted out in the arboretum).
 9. *Cercis mexicana* [or *C. canadensis* var. *mexicana* (Rose) Hopkins] - Mexican Redbud (Leguminosae). An outstanding small flowering tree in our trials with small, glossy foliage with undulating margins on the leaves. First introduced to commercial culture in the eastern United States by Stephen Burns of Vine and Branch Nursery and slowly becoming known and used. A magnificent plant! Plants being distributed are from Yucca Do Nursery seed collected in Mexico. Juvenile seedling plants do not have the glossy foliage but acquire it as they age. When young this species can be propagated from softwood cuttings; adult wood is usually handled by budding (with some difficulty). (Two plants are on display in the arboretum - one to the left of the entrance of the visitor center near the 'Ruby Glow' witch hazel; and one in the west arboretum to the northeast of the leyland cypress circle in the redbud collection).
 10. Plant eliminated with too limited numbers available to distribute from poor propagation results - next year!
 11. *Clethra alnifolia* L. 'Hummingbird' - 'Hummingbird' Summersweet Clethra (Clethraceae). A seedling variant of this excellent deciduous native plant found by Fred Galle on the banks of Hummingbird Lake (whence its name) at Callaway Gardens in Georgia. The plant is compact, maturing at 3-4' in height, extremely free and long-flowering with white fragrant flowers. Extremely easy from softwood cuttings (we went from one quart to 600 plants in one year!). It is already entering the trade and will become a popular and useful plant. (And it will quickly be overproduced within 4 years due to its ease of propagation and rapid growth). (Still in nursery - not planted out in arboretum).
 12. *Cornus florida* var. *pringlei* (also listed as *C. pringlei* and *C. uncinata*) - Mexican Flowering Dogwood (Cornaceae). Another of the Yucca Do Nursery Mexican collections. This ecotype of our native flowering dogwood differs from our familiar form in having bracts on the inflorescence which do not detach from each other at the tip as the bracts expand - resulting in remarkable balloon-like flowers. Being distributed for adaptation trial - with the expectation that our northern photoperiod differences may likely cause it to grow too late in fall for proper hardiness acclimation (though it grows in as cold areas in the mountains of Mexico at high elevation) with resulting winter kill. But we won't know until we test it - and if successful it would be a beautiful and unusual addition to our flowering tree list. Seed (cold stratification) or softwood cuttings. (Still in nursery - not planted out in arboretum).
 13. *Cryptomeria fortunei* - Chinese Cryptomeria (Taxodiaceae). Most references list only one species in this conifer genus (and many cultivars - which the arboretum is heavily working with). Seed for our distribution plants of this second rare species comes from the Beijing Botanic Garden. We have grown it for a number of years and our plants are now 10' tall and distinctly different from *C. japonica* in having softly pendulous branchlets with a different visual texture to the plants. It should grow throughout N. C. Propagated by hardwood cuttings. (Located in the *Cryptomeria* grove in the east arboretum near the dwarf loblolly pines and magnolia collection).
 14. *Euonymus japonica* Thunb. 'Chollipo' - 'Chollipo' Japanese Euonymus (Celastraceae). Another plant from the 1985 Korean expedition collected at the internationally noted Chollipo Arboretum (from whence the name) developed over the last 30 years by Mr. Ferris Miller. This cultivar is quite vigorous in growth and has strongly upright to fastigate growth (8' tall X 2' wide) with white-variegated foliage. Easy from cuttings at any time of year. (Located in the winter garden).
 15. *Glyptostrobus lineatus* (Poir.) Druce- Canton Water Pine or Chinese Swamp Cypress (Taxodiaceae). A rare monotypic genus of deciduous conifer (the Asian equivalent of our Bald Cypress) native to Canton, China. Not necessarily a handsome landscape plant but one with an interesting exotic appearance from its lacy summer foliage. Will be hardy throughout N. C. - use as you would a bald cypress (sunny sites - either wet or dry). Seed or softwood cuttings in early summer. The plants are from seed distributed by the Beijing Botanic Garden in China. (Two trees are located in the arboretum - the oldest now over 20' tall is on the north side of the visitor center in the white garden; and one in the far southwest corner of the west arboretum in the deciduous conifer collection).
 16. *Hypericum forrestii* (Chitt.) N. Robson - Forrest's St. Johnswort (Guttiferae or Hypericaceae). There are innumerable species and hybrids of St. Johnswort of easy culture with bright yellow flowers in summer on evergreen or deciduous shrubs. This species was introduced by noted plantsman George Forrest in 1906 from S. W. China and Burma. It is rare in cultivation and was given to us by Charles Cresson of Pennsylvania with the recommendation that it was one of the most attractive forms for potential growth. It is noted for good fall color of the foliage. Krussman says quite winter hardy (zone 5). Easy and fast from softwood cuttings. (Still in nursery - not planted out in arboretum).
 17. *Ilex* X 'Mary Nell' - 'Mary Nell' Holly (Aquifoliaceae). An outstanding holly introduction from the noted Tom Dodd Nursery in Alabama resulting from a tri-species series of crosses of [(cornuta X pernyi) X latifolia]. It has broad lustrous and dark green

- foliage with fine-toothed margins and grows upright in a loose columnar form. Very easy from semi-hardwood to hardwood cuttings. (Two plants 6-8' plants are located in the west arboretum - one at the far southwest corner across the walkway from the *Abelia* collection; and the other one underneath the large Chinese wingnut tree at the southeast end of the *Callicarpa* and *Illicium* island bed).
18. *Lilium groanei* - ? Lily (Liliaceae). Each year we must have at least one totally mysterious and unknown plant to confuse recipients with. This is it this year. It has somehow slipped through the cracks and I can find neither any record of who it came from or how we got the seed - nor any reference to it as an existing species in any of my books. It will be a herbaceous perennial, but with unknown hardiness, color, size, shape of flower, or any other characteristic. Plant it in a well-drained soil with some organic matter. Truly a "discovery" plant for trial! (Sorry). (And it is really gone as we gave away all our plants and won't even see it bloom ourselves - truly a mystery!).
 19. *Lagerstroemia fauriei* Koehne. 'Fantasy' - 'Fantasy' Japanese Crepe Myrtle (Lythraceae). This species of crepe myrtle was introduced from Japan by Dr. John Creech of the U. S. National Arboretum in the 1950's and has been the basis of hybridization of the many new cultivars released by the late Dr. Donald Egolf (now continuing under the new National Arboretum ornamentals breeder, Dr. Randy Johnson, formerly of NCSU). Five of the original introduction seedlings were planted at the NCSU research farm in an area which has now become the arboretum and these have developed into magnificent specimens. This individual is the tallest (50') and has the most desirable upright tree-form growth with good white flowers and spectacular red and white bark. It is likely the largest *L. fauriei* in the U.S. today with a trunk diameter in excess of three feet. This will be the first pure species cultivar released. For maximum hardiness it should be grown "hard" in fall with no water or fertilizer. Not as easy in propagation as most *L. indica* cultivars, but softwood cuttings from young vigorous plants root with moderate ease in summer. (Located in the west arboretum on the first walkway to the right - about halfway down the walk on the right. The bark in summer is so spectacular it is hard to miss!).
 20. *Mahonia gracilis* (Benth.) Fedde. - "The Graceful Mahonia" (Berberidaceae). A rare broadleaved evergreen shrub closely related to *M. aquifolium* which was discovered in Mexico in 1900. It is rare in cultivation, but older plants in Texas indicate it is likely hardy to zone 6 and will reach 7-9' high in landscapes with beautiful form and texture. Seed for the plants from this distribution again came from the Yucca Do Nursery from cultivated plants in Texas. Seed with cold stratification or will likely go from semi-hardwood cuttings. Can be grown in full sun or partial shade and likely better in well-drained soils in the hotter portions of the state. (Located in the planter bed directly to the west of the Japanese Garden in the west arboretum).
 21. *Ophiopogon jaburan* (Siebold) Lodd. 'Variegata' - Variegated Giant Monkeygrass (Liliaceae). Another collection from Seoul, Korea in 1985. Very handsome large (to 1') broadleaved evergreen groundcover with white variegated foliage and white summer flowers followed by blue fruit. It is much slower in propagation than the Liriopes and has taken us 6 years to get enough for distribution - but very handsome when established in plantings. Propagated by clump division. (Located in the lath house).
 22. *Pachysandra terminalis* Siebold & Zucc. 'Green Sheen' - 'Green Sheen' Japanese Spurge (Buxaceae). Certainly the most widely grown of broadleaved evergreen groundcovers in northern gardens. This new cultivar was selected and introduced by the Dale Chapman Nursery in Hampton, CT as a form with distinctive shiny, lustrous foliage. A very handsome plant. It is not patented and is currently selling for three times the price of the species in New England where it is now being grown on a limited basis. Easy from cuttings at any time of year. Best in shade on moist, well-drained soils. (Located in the bed on the east side of the Unit #4 farm office/classroom building across from the parking lot).
 23. *Philadelphus* sp. (El Butano, Mexico) - Mexican Mockorange (Rosaceae). Like the *Carpinus* (#8 above), another recently discovered plant which is likely a new species to cultivation from the Mexican collections of Yucca Do Nursery. They describe it as a particularly beautiful deciduous shrub species in the woodlands of the Mexican mountains with large, fragrant white flowers. Being distributed for adaptation trials and further observation. Very easy from softwood cuttings. For full sun. Hardiness unknown. (Still in nursery - not yet planted out in arboretum).
 24. *Poncirus trifoliata* (L.) Raf. 'Flying Dragon' - 'Flying Dragon' or Contorted Hardy Orange (Rutaceae). A multiseason interest plant with white fragrant flowers in spring, dark green foliage in summer, yellow orange-like fruit in autumn and the contorted stems and curved thorns make a dramatic display during the winter months. This Japanese cultivar was selected for its corkscrew, twisted thorns and stems. A deciduous shrub reaching 10' in height and it would be the ultimate barrier hedge material which no one would penetrate. It makes a spectacular specimen plant and we are also promoting it as a cut branch item for the florist/decorator trade. Easy from softwood cuttings and exceptionally tough and durable in the landscape. Will grow anywhere in N. C. - best in sun. (Two plants are on display in the arboretum - one in the west arboretum in the center of the south bed next to the Nellie Stevens holly hedge in the contorted plants collection; and the other recently moved one in the winter garden in the east arboretum).
 25. *Rhododendron* (Azalea) X 'Wolfpack Red' - 'Wolfpack Red' Azalea (Ericaceae). When the many cultivars of broadleaved evergreen azalea were being released from the NCSU breeding program of Dr. Fred Cochran, this one somehow got somewhat lost in the shuffle and has rarely been produced in commercial trade. This is unfortunate as it is truly an outstanding azalea cultivar with the most brilliant and truest "red" of any azalea I've seen with a vibrant color which stands out from a hundred yards away. The name is perhaps somewhat unfortunate with too much of a football rah-rah concept (will a UNC or Clemson fan really put one in their gardens?) - but a fine plant needing production and use. Easy from cuttings most of the year. Typical azalea culture. (Located in the bed at the front of the display lath house on the right [north] side).
 26. *Ulmus* X *elegantissima* Horwood 'Jacqueline Hillier' - 'Jacqueline Hillier' Dwarf Elm (Ulmaceae). A dwarf, shrubby deciduous elm found as a natural hybrid (*U. glabra* X *plottii*) in Birmingham, England and named in honor of Harold Hillier's (Hillier's Arboretum and manual of plants fame) mother. Excellent small specimen, rock garden plant, or bonsai material for production. Very easy and

fast from softwood cuttings. Sun or partial shade with maximum height of 4'? (Located in the planter on the west side of the Japanese Garden in the west arboretum).

27. *Weigela coreenis* Thunb.- Japanese Weigela (Caprifoliaceae). A spectacular deciduous shrub to 8' in diameter (reported to 15' in wild) with showy bright pink to rosy red flowers in late spring. Introduced from Japan in 1850 but rarely seen or grown. Every year it attracts much attention when in bloom at the arboretum (usually at peak for graduation day). Very easy from softwood cuttings and rapid growing. (Located near Beryl Road at the front of the lawn in front of the Unit #4 office/ classroom building - in the bed with the official university sign along the road).

BOOKS NEWS

Concerning the New RHS Dictionary of Gardening (Contributed by Allen Lacy)

"One of the first signs of seriousness in a truly passionate gardener is getting picky about names. Common names have their beauty and their poetry, but the same common name may be used for more than one kind of plant, and the same kind of plant may have several common names. Northerners and many Southerners call members of the genus *Narcissus* "daffodils," but in some parts of the south "jonquil" is used for the whole genus, not just the species *N. jonquilla*. In Middle Tennessee, I have heard daffodils called "buttercups". Common names also vary from one living language to another. Some of the Hardy Cyclamens are called "sowbread" in English, and Alpenveilchen ("Alpine Violets") in German. The answer to these ambiguities is obviously to insist on scientific, botanical, or Latin names, to take our stand for the sensible views of the 18th century Swedish botanist, Carolus Linnaeus. In his system of binomial nomenclature, there were some clear principles; the same kind of plant should always have the same name, and the same name should not be used for more than one kind of plant.

And so, serious gardeners take on the task of memorizing, one or two at a time, binomial names. Montauk daisy becomes *Chrysanthemum nipponicum*, and sweet autumn clematis becomes *Clematis paniculata*.

So far, so good, except that the scientific names turn out not to have the eternal fixity we had hoped for when we memorized them. *Clematis paniculata* no longer applies to the Asian vine that we grown in our gardens, the one that has naturalized itself in waste places all over the eastern seaboard, pleasing the eye with its foam of small white flowers and the sweet scent its common name promises. There is still a *C. paniculata*, but it's now a New Zealand species few people grow. Sweet autumn clematis is now *C. maximowicziana*. So we learn the new name, knowing that nursery catalogs may or may not follow suit. Then we learn - as I have just learned - that *C. maximowicziana* has just bitten the dust. It is now *C. terniflora*. And as for the Montauk daisy, the entire genus *Chrysanthemum* has been blown to smithereens, divided into around a dozen new genera. That daisy is now *Nipponanthemum nipponicum*.

Such news brings gardeners to just one conclusion: someone has been committing the sin of taxonomy, and we gardeners must pay the wages of this sin. Taxonomists, of course, can't help it. What may seem to many gardeners arbitrary and capricious name changes are really the product of understandable and reasonable rules. One rule is that the first properly published name for a given species of plant is the valid name, even if a name given later has come into widespread use. If I get a plant that comes to me as *Heptacodium jasminoides*, and it turns out that it was first described under the name *H. micranoides*, that earlier name is the right one. Other name changes follow when one genus splits into several, each with its name, or when two or more genera are reduced to one.

What makes these name changes so infuriating is the fact that there has been, increasingly, no standard reference book to consult in order to sort everything out. For all its 1200 pages, Hortus Third, published in 1976, is badly out of date, as name changes have accumulated and proliferated. There is not even a hint in it of the seismic instability of the genus *Chrysanthemum*. And it is clearly understood; there will be no Hortus Fourth.

All of the above is preamble to high praise for the publication, in April 1992, by Macmillan in Great Britain and The Stockton Press in the U. S., of the massive 4-volume reference set, The New Royal Horticultural Society Dictionary of Gardening. Edited by Mark Griffiths, using very advanced computer technology that generally keeps taxonomy up to date almost to the time the set of books was printed in Mexico, this reference work is indispensable for anyone who wants to get as many names right as possible.

It is, furthermore, more horticultural in its scope and contents than Hortus Third. It pays much greater attention to cultivars of both woody and herbaceous plants. It give much information about the needs and requirements of particular plants in a garden setting. It contains intelligent and thought-provoking essays on such matters as garden history, garden design, ethnobotany, and plant conservation. And it takes gardening in the United States very seriously, despite its British origins. Many of the consultants who worked on the dictionary are Americans. They made a huge contribution, and the dictionary shows not a scintilla of the frequent assumption in many British books that advice about gardening in Britain is universal, crossing the Atlantic Ocean with no need for modification.

This dictionary is not inexpensive, by any reckoning, as it carries a price tag of \$795. The sum sounds formidable, even forbidding, but in terms of the information found in its several thousand pages it is almost a bargain, as it contains in one handy place material that otherwise would have to be looked for in hundreds of articles in journals. I have had my set of books for under two months now, and I have used them every single day. I also camped in the reference library of Stockton State College, where I teach, until I persuaded a librarian to open a pretty meager purse and shake loose funds to acquire this dictionary for use by students, faculty, and the community.

The New RHS Dictionary of Gardening is not perfect, of course, but little in this world reaches perfection, and I can settle for very good indeed. Nitpickers will find nits to pick here. Where, for example, is the genus *Heptacodium*? Why, among the asarums or wild gingers, is *Asarum splendens*, an Asian species with surpassingly lovely pewter-mottled leathern foliage, omitted? The discussion of hardiness and of the zones used in the United States is fine as far as it goes, but it does not approach the question of summer-hardiness in the southeastern and southern United States - a question on which Dr. J. C. Raulston has spoken eloquently and extensively.

One fact remains, however. This new reference work is going to be a handy and much-used tool by English-speaking gardeners wherever they live and till the earth."

Major treasures such as the RHS Dictionary of Gardening discussed by Allen Lacy above come rarely in the publishing field. Another monumental event in my book use life occurred recently with an updated version of the classic Hillier Manual of Trees and Shrubs - one of two books I would grab (Dirr's Manual the other of course) if I knew I were to be suddenly transported and deposited in isolation in the ultimate temperate zone collection of trees and shrubs for the rest of my life (sigh - what a wonderful threat!). Hillier's Manual is a outgrowth of the passion of Mr. Harold Hillier (and earlier generations of the family as well) and Hillier's Nursery in England for collection of both wild species and cultivars of woody plants from all over the world. At one time it was in essence a nursery catalog - listing over 10,000 plants that the nursery offered for sale. Modern economics have markedly trimmed those numbers at the nursery - but the book has continued an essential reference tool to serious plantsmen. I use the book almost daily and have literally worn 2 previous copies to shreds.

This new 6th edition is changed in format with a considerably larger size which "feels and lays" well in the hand and on the desk - and has expanded with over 1,000 new entries. As Allen mentioned above, nothing is perfect - and I could go through probably 250 shrubs and trees in The NCSU Arboretum (now the JC Raulston Arboretum) which are not mentioned here - but then they shouldn't be with their recent introduction to cultivation from various countries of the world, or of new local or American cultivars which take time to migrate eastward. Reference literature evolves. The 704 page book is published by David and Charles (ISBN 0-7153-9942-X) and can be ordered by most bookstores - or is in stock through Capability's Books. Price is about \$45-50. A word of caution - there are several versions of Hillier's Manuals offered from English press - a "connoisseur" version, and a "color dictionary" version. In my mind both are lesser books with massive numbers of the plants eliminated from coverage to provide a bit more glitz and color to the consumer - at greater price. If you want information - get the real thing.

Speaking of Capability's - a catalog of "Summer Joys" received this week from them (2379 Highway 46, Deer Park, WI 54007; 1-800-247-8154) well illustrates the amazing flood of horticultural books now appearing in the marketplace. The following are all new books listed for the first time in their catalog. What a contrast to a decade ago when I hunted for something new to buy!

- Trellising - Rhonda Hunt. \$14.95.
- Perennials - 2 vols. by Phillips and Rix. \$50 (wonderful with 2,500 color photographs).
- Perennial Gardens - A Practical Guide to Home Landscaping -John Williamson. \$16.95.
- Large-Leaved Perennials - Myles Challis. \$24.95.
- The Natural Shade Garden - Ken Druse. \$40.00.
- Stonescaping - Jan Kowalczewski. \$17.95.
- The Backyard Landscaper - Ireland-Gannon Associates. \$12.95.
- How to Build Outdoor Structures - Morgan & Engler. \$19.95.
- The Tropical Garden - Wm. Warren. \$55.
- The Wild Gardener - The Life and Selected Writings of Eloise Butler - Martha Hellander. \$19.95.
- Gardening in Deer Country - Karen Jescavage-Bernard. \$6.95.
- Please Don't Eat My Garden - Nancy McCord. \$9.95.
- Moments of Japanese Garden Art - 3 Vols. at \$41.95@.
- The Gardens of England nad Wales - \$10.
- Over the Hills from Broadway: Images of Cotswold Gardens - David Wheeler & Simon Dorrell. \$40.
- The New Englishwoman's Garden - Lees-Milne & Verey. \$22.95.
- The Essential Pruning Companion - John Malins. \$29.95.
- The Complete Book of Plant Propagation -Clarke & Toogood. \$17.95.
- The Greenhouse & Nursery Handbook: A Complete Guide to Growing & Selling Ornamental Container Plants - Francis Jozwik. \$59.95.
- The Complete Guide to Conservatory Plants - Ann Bonar. \$35.95.
- The Flower Arranger's Encyclopedia of Preserving and Drying. Maureen Foster. \$14.95.
- A Passion for Daylilies - Sydney Eddison. \$22.
- Hardy Ferns - Michael Jefferson-Brown. \$24.95.
- A Guide to Orchids of the World - Hodgson, Paine & Anderson. \$45.
- Rhododendron Portraits - D. M. van Gelderen & J. R. P. van Hoey Smith. \$75.
- The Genus Hosta - W. George Schmid. \$59.95.
- Hostas - Sandra Bond. \$24.95.
- Ornamental Grasses, Bamboos, Rushes, and Sedges - Nigel Taylor. \$24.95.
- Creative Garden Settings - Webersinn & Keen. \$14.95.

- Simple Garden Projects - David Stevens. \$19.95.
- Paths, Patios & Paving. Roger Sweetinburgh. \$5.95.
- Speciality Gardens - Theodore James. \$45.
- The Compact Garden: Discovering the Pleasures of Planting a Small Space - Brian Fawcett.
- Small Period Gardens - Roy Strong. \$29.95.
- The Exuberant Garden and the Controlling Hand - William Frederick. \$50.
- The Gardener's Palette: The Complete Guide to Selecting Plants by Color - Dale & Gunnell. \$25.
- Seeds of Woody Plants - James & Cheryl Young. \$49.95
- The Complete Guide to Pruning & Training Plants - David Joyce & Christopher Brickell. \$30.
- Gardens of Florences - Mary Jane Pool. \$45.
- Gardens of Provence - Louisa Jones. \$50.
- Good Gardens Guide 1992 (English) - \$24.95.
- Beyond Flowers: Collecting and Arranging Natural Objects - Gerd Verschoor. \$55.
- The Floral Home - Leslie Geddes-Brown. \$35.
- The Pleasure of Fresh Flowers: Selecting and Arranging - Charles Martin Fitch. \$39.95.
- Taylor's Guide to Gardening in the South - \$18.95.
- Taylor's Guide to Gardening in the Southwest and Southern California - \$18.95.
- Shade and Color with Water-Conserving Plants - James Walters & Balbir Backhaus. \$39.95.
- The Complete Geranium: Cultivation, Cooking and Crafts - Susan Conder. \$18.
- Ivies - Jane Fearnley-Whittingstall. \$35.
- The Cultivation of Ferns - Andrew McHugh. \$55.
- Alliums: The Ornamental Onions - Dillys Davies. \$29.95.
- Iris of China - James Waddick & Zhao Yu-tang. \$27.95.
- Success with Rhododendrons & Azaleas - H. Edward Reiley. \$29.95
- The Yew Tree: A Thousand Whispers - Hal Hartzell, Jr. \$22.95.
- Growing Alpines in Raised Beds, Troughs and Tufa - Duncan Lowe. \$39.95.
- Alpines: Step-to-Step to Growing Success - Mary Robinson. \$15.95.
- Bonsai - Susan M. Bachenheimer Resnick. \$35.
- Indoor Bonsai - John Ainsworth. \$8.95
- Popular Bonsai - Dave Pike. \$29.95.
- Gardening With Friends - George Schenk. \$19.95.
- The Unofficial Gardener's Handbook - Shelley Goldbloom. \$7.
- Gertrude Jekyll - Sally Festing. \$25.
- Village Show - Ursula Buchan. \$17.95.
- Complete Book of Herbs - Geraldene Holt. \$35.
- RHS Dictionary of Gardening - 4 Vols. \$795.
- Garden Shrubs & Their Histories - Alice M. Coats. \$40.
- Trees for Shelter and Shade for Memory and Magic - Charles Fenyvesi. \$14.95.
- The Folklore of Trees & Shrubs - Laura Martin. \$24.95.
- Growing Trees on the Great Plains - Margaret Brazell. \$14.95.
- Gardening for a Greener Plant: A Chemical-Free Approach. Jonathan Erickson. \$13.95.
- Rodale's All-New Encyclopedia of Organic Gardening - \$29.95.
- The Gardener's Eye and Other Essays - Allen Lacy. \$21.95
- Roses: An Illustrated Encyclopedia & Grower's Handbook of Species Roses, Old Roses & Modern Roses, Shrub Roses & Climbers (Whew!) - Peter Beales. \$60.
- The Old Rose Advisor - Brent C. Dickerson. \$69.95.
- Landscaping With Antique Roses - Liz Druitt & G. Michael Shoup. \$34.95.
- Using Herbs in the Landscape - Debra Kirkpatrick. \$16.95.
- Summer Herbal Delights - N. Richardson. \$9.95.
- Herbal Wreaths - Carol Taylor. \$12.95
- The Earth Shall Blossom: Shaker Herbs & Gardening. Beale & Boswell. \$18.95.
- Herb Companion Wishbook & Resource Guide - Bobbi A. McRae. \$16.95.

So, for only \$3,131.85 you can pick up some of the horticultural books published in the last few months (many others also new from other publishers and regional availability). In my continuing wonder of "how do people manage to actually write a book?" - it is beginning to appear I may shortly be the only gardener to handle a hoe who hasn't written a book! Sigh!

Newly engraved on the outside wall of the recently completed state education building in Raleigh: "Learning in old age is writing in sand, but learning in youth is engraved in stone." Ancient Arabian Proverb. (True - but frightening what our culture and TV is engraving in the minds of our youth today.)

Shared by a member of my Asheville class this spring is a quote from *The Once and Future King* by T. H. White: "The best thing for being sad," replied Merlyn, beginning to puff and blow, "is to learn something. That is the only thing that never fails. You may grow old and trembling in your anatomies, you may lie awake at night listening to the disorder of your veins, you may miss your only love, you may see the world about you devastated by evil lunatics, or know your honour trampled in the sewers of baser minds. There is only one thing for it then - to learn. Learn why the world wags and what wags it. That is the only thing which the mind can never exhaust, never alienate, never be tortured by, never fear or distrust, and never dream of regretting. Look at what a lot of things there are to learn - pure science, the only purity there is. You can learn astronomy in a lifetime, natural history in three, literature in six. And then, after you have exhausted a milliard lifetimes in biology and medicine and theocriticism and geography and history and economics - why, you can start to make a cartwheel out of the appropriate wood, or spend fifty years learning to begin to learn to beat your adversary at fencing. After that you can start again on mathematics until it is time to learn to plough."

Admittedly my attention for the last six months has been diverted from horticultural reading with something of a blitzkrieg passion for fiction all of a sudden - it has been the season of many, thousand-page plus paperbacks of Mitchener and others, many collections of short stories, and perhaps most enjoyed - the 5 tidbits of Tom Robbins which Cat introduced me to. Unfortunately that discovery was like most of my reading - I discover an author I like and then devour them quickly (took two weeks) and then I have to suffer knowing there are no more at least till the next one is written. Robbins books - *Jitterbug Perfume*, *Another Roadside Attraction*, *Even Cowgirls Get The Blues*, *Still Life With Woodpecker*, and *Skinny Legs and All* - are most certainly not to every taste and would likely offend or upset many - but there are wonderful tidbits of philosophy and images along the way.

A few quotes from *Jitterbug Perfume* (the most "horticultural" of the series with beets as something of an ongoing theme - to really stretch a point) - "The difference between love and logic is that in the eyes of a lover, a toad can be a prince, whereas in the analysis of a logistician, the lover would have to prove that the toad was a prince, an enterprise destined to dull the shine of many a passion." "Our individuality is all, all, that we have. There are those who barter it for security, those who repress it for what they believe is the betterment of the whole society, but blessed in the twinkle of the morning star is the one who nurtures it and rides it, in grace and love and wit, from peculiar station to peculiar station along life's bittersweet route." And finally, "There is a long-standing argument about whether perfuming is a science or an art. The argument is irrelevant, for at the higher levels, science and art are the same. There is a point where high science transcends the technologic and enters the poetic; there is a point where high art transcends technique and enters the poetic."

PLANT SOURCES NEWS

The following is an updated and greatly expanded version of source guides which have appeared in past issues of the newsletter. We are particularly proud of the North Carolina Grown listing published by The NCSU Arboretum (now the JC Raulston Arboretum) (bold type below) and are very appreciative of the excellent sales which are occurring.

North Carolina Grown is a book of mail order nursery sources in North Carolina for 7,600 species and cultivars of ornamental plants. Send \$6.00 check payable to "The N. C. Agricultural Foundation"; mail to: Source Guide, The NCSU Arboretum (now the JC Raulston Arboretum), Box 7609, NCSU, Raleigh, NC 27695-7609

U. S. SOURCES

- Andersen Horticultural Library's Source List of Plants and Seeds is a 214 page book of commercial sources for 45,000 different ornamental plants. It is available for \$29.95 from: Andersen Horticultural Library, Minnesota Landscape Arboretum, 3675 Arboretum Drive, Box 39, Chanhassen, MN 55317.
- Hortus Source List is a book of nursery sources for 2,000 species and 8,000 cultivars of ornamental plants. Send \$11.50 check or money order payable to "Cornell University" to: Hortus Source List, L. H. Bailey Hortorium, 462 Mann Library, Cornell University, Ithaca, NY 14853.
- Combined Rose List. Beverly R. Dobson & Peter Schneider, PO Box 16035, Rocky River, OH 44116. Sources for 7,500 roses from 171 nurseries.
- Fruit, Berry and Nut Inventory. Seed Saver Publications, Route 3, Box 239, Decorah, Iowa 52101. Sources of all fruits, nuts and berries from 248 U. S. mail-order nurseries.
- Nursery Sources, Native Plants and Wild Flowers. New England Wild Flower Society, Garden in the Woods, Hemenway Rd., Framingham, MA 01701. Over 200 native plants from 100 nurseries.
- Perennials: A Nursery Source Manual. Brooklyn Botanic Garden, 1000 Washington Ave., Brooklyn, NY 11225-1099. Sources of 4,000 perennials from 320 nurseries.
- Eureka Hemerocallis - 1992 National Daylily Locator. Ken & Kay Gregory. 34,775 price comparisons on 9,160 hemerocallis cultivars listed in 68 grower catalogs. 192 p. \$14.50 from Capability's Books, 2379 Highway 46, Deer Park, WI 54007 (1-800-247-8154).

CANADIAN SOURCES

- The Canadian Plant Sourcebook lists more than 10,000 hardy plants available at 80 nurseries across Canada. It is available for \$13 + \$2 shipping from: A&P Ashley, 93 Fentiman Avenue, Ottawa, ON, Canada K1S 0T7.

ENGLISH SOURCES

- The Plant Finder - 1992 Edition lists more than 55,000 plants available from over 500 specialist nurseries. It is available for 11.50 pounds ("all overseas customers must supply a cheque in UK Sterling negotiable at a UK Bank or a Sterling Eurocheque.") from: The Hardy Plant Society, Worcester WR2 4BR England.
- The Vegetable Finder. HDRA, Ryton-on-Dunmore, Coventry CV8 3LG, England. Sources of 2,000 different vegetable seeds from 36 suppliers.

FRENCH SOURCES

- Ou Trouver la Plante (1992). A. Perriere, Hachette, 79 Bd. St. Germain, Paris 75006. Sources of over 10,000 plants from 200 French nurseries. Divided into categories of conifers, trees, shrubs, roses, perennials and fruit.

GERMAN SOURCES

- Pflanzen-Einkaufsführer (1990). Anne & Walter Erhardt. Verlag Eugen Ulmer, PO Box 70 05 61, D-7000 Stuttgart 70, Germany. Sources of over 14,000 plants available in German nurseries.

SWISS SOURCES

- Der Stauden Finder. Balz Schneider, Im Veltin 38, CH-8709 Meilen, Switzerland. Sources of 5,000 herbaceous perennials from 40 Swiss nurseries.

PLANTS RECEIVED BY THE NCSU Arboretum (now the JC Raulston Arboretum) - JANUARY - DECEMBER 1991

- 91/0001 - Gaultheria procumbens (Sel.) - Laurel Springs Nursery - Hendersonville, NC - 1 gal - 01/02.
- 91/0002 - Kalmia latifolia 'Minuet' - Laurel Springs Nursery - Hendersonville, NC - 1 gal - 01/02.
- 91/0003 - Kalmia latifolia 'Pequoit' - Laurel Springs Nursery - Hendersonville, NC - 1 gal - 01/02.
- 91/0004 - Kalmia latifolia 'Sarah' - Laurel Springs Nursery - Hendersonville, NC - 1 gal - 01/02.
- 91/0005 - Vaccinium crassifolium - Laurel Springs Nursery - Hendersonville, NC - 1 qt. - 01/02.
- 91/0006 - Ilex sp. (T28M-09S-121790) - Yucca Do Nursery - Waller, TX - Seed - 01/09.
- 91/0007 - Michella sp. (T28M-13S-121790) - Yucca Do Nursery - Waller, TX - Seed - 01/09.
- 91/0008 - Osmanthus salicifolia (T28M-28S-121890) - Yucca Do Nursery - Waller, TX - Seed - 01/09.
- 91/0009 - Aristolochia tomentosa (#13) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0010 - Asclepias purpureascens (#17) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0011 - Baptisia australis var. minor (#25) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0012 - Baptisia lactea (#26) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0013 - Baptisia leucophaea (#28) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0014 - Berchemia scandens (#31) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0015 - Ceanothus americanus var. pitcheri (#43) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0016 - Hamamelis vernalis (#91) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0017 - Liatris punctata var. nebraskana (#112) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0018 - Liatris squarrulosa (#115) - Rivendell Botanic Gardens - Beardstown, IL - Seed - 01/18.
- 91/0019 - Arctostaphylos bakeri ssp. sublaevis (#24) - UC Davis Arb. - Davis, CA - Seed 01/18.
- 91/0020 - Arctostaphylos manzanita (#25) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0021 - Berberis fremontii (#166) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0022 - Berberis higginsiae (#167) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0023 - Berberis nevinii (#168) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0024 - Berberis pinnata ssp. insularis (#169) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0025 - Brodiaea elegans (#107) - UC Davis Arb. - Davis, CA - 01/18.
- 91/0026 - Brodiaea leptandra (#108) - UC Davis Arb. - Davis, CA - 01/18.
- 91/0027 - Brodiaea stellaris (#109) - UC Davis Arb. - Davis, CA - 01/18.
- 91/0028 - Callitris preissii (#149) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0029 - Callitris propinqua (#151) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0030 - Ceanothus integerrimus (#72) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0031 - Ceanothus thrysiflorus (#74) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0032 - Cupressus glabra (#2) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0033 - Cupressus macnabiana (#3) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0034 - Cupressus sargentii (#4) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0035 - Garrya wrightii (#37) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0036 - Heteromeles arbutifolia (#78) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0037 - Heteromeles arbutifolia var. cerina (Yellow-berried) (#229) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0038 - Pinus muricata (#6) - UC Davis Arb. - Davis, CA - Seed - 01/18.

- 91/0039 - *Triteleia bridgesii* (#134) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0040 - *Triteleia hyacinthina* (#135) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0041 - *Triteleia laxa* (#136) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0042 - *Triteleia peduncularis* (#138) - UC Davis Arb. - Davis, CA - Seed - 01/18.
- 91/0043 - *Aphananthe aspera* (NEKG#191) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0044 - *Betula chinensis* (NEKG#045) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0045 - *Betula costata* ((NEKG#075) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0046 - *Betula ermani* Chamisso (NEKG#094) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0047 - *Betula schmidtii* (NEKG#157) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0048 - *Carpinus cordata* (NEKG#084) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0049 - *Carpinus turczaninowii* (NEKG#089) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0050 - *Iris uniflora* var. *carinata* (NEKG#071) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0051 - *Neolitsia sericea* (NEKG#184) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0052 - *Philadelphus schrenkii* (NEKG#080) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0053 - *Sapium japonicum* (NEKG#153) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0054 - *Spirea miyabei* (NEKG#162) - Morris Arboretum - Philadelphia, PA - Seed - 01/19.
- 91/0055 - *Ilex rubra* (T29M-9S-010591) - Yucca Do Nursery - Waller, TX - Seed - 01/20.
- 91/0056 - *Staphylea pringlei* (T29M-10S-010591) - Yucca Do Nursery - Waller, TX - Seed - 01/20.
- 91/0057 - *Cotoneaster* sp. (1,800M - Mt. Olympos, Greece - collected by Wolfgang Kletzing, West Germany) - Holden Arboretum - Mentor, OH - Seed - 01/24.
- 91/0058 - *Quercus coccifera* (400M - Delphi, Greece - collected by Wolfgang Kletzing, West Germany) - Holden Arboretum - Mentor, OH - Seed - 01/24.
- 91/0059 - *Angelica gigas* - Arnold Arboretum - Jamaica Plain, MA - Seed - 01/27.
- 91/0060 - *Camellia sinensis* - Arnold Arboretum - Jamaica Plain, MA - Qt. - 01/27.
- 91/0061 - *Cyclocarya paliurus* - Arnold Arboretum - Jamaica Plain, MA - Seedlings (3) - 01/27.
- 91/0062 - *Decussocarpus rospiglossy* - Arnold Arboretum - Jamaica Plain, MA - Gallon/2' - 01/27.
- 91/0063 - *Keteleeria evelyniana* - Arnold Arboretum - Jamaica Plain, MA - Gallon - 01/27.
- 91/0064 - *Lespedeza davidii* - Arnold Arboretum - Jamaica Plain, MA - Qt. - 01/27.
- 91/0065 - *Ophiopogon chekangensis* - Arnold Arboretum - Jamaica Plain, MA - Liners - 01/27.
- 91/0066 - *Styrax dasyantha* - Arnold Arboretum - Jamaica Plain, MA - Qt. - 01/27.
- 91/0067 - *Torreya californica* - Arnold Arboretum - Jamaica Plain, MA - Liner - 01/27.
- 91/0068 - *Torreya grandis* - Arnold Arboretum - Jamaica Plain, MA - Liner - 01/27.
- 91/0069 - *Torreya grandis* 'Merrill' - Arnold Arboretum - Jamaica Plain, MA - Liner - 01/27.
- 91/0070 - *Torreya grandis* 'XH1FE' - Arnold Arboretum - Jamaica Plain, MA - Liner - 01/27.
- 91/0071 - *Cercidiphyllum japonicum* 'Heronwood Globe' - Heronwood Nursery - Kingston, WA - Qt. - 01/27.
- 91/0072 - *Carpinus* sp. (El Cielo, Mexico - T26M-64S-101390) - Yucca Do Nursery - Waller, TX - Seed - 01/28.
- 91/0073 - *Garrya* sp. (T24M-24S-100890) - Yucca Do Nursery - Waller, TX - Seed - 01/28.
- 91/0074 - *Garrya* sp. (T26M-04S-100790) - Yucca Do Nursery - Waller, TX - Seed - 01/28.
- 91/0075 - *Aralia mandshurica* (#0515) - American Rock Garden Society (ARGS) 1990 Seed Exchange - Seed - 02/01.
- 91/0076 - *Croton alabamensis* (#1323) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0077 - *Daphne giraldii* (#1411) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0078 - *Daphne oleoides* (#1416) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0079 - *Erythronium dens-canis* (#1987) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0080 - *Iris subbiflora* (#2739) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0081 - *Leucojum nicaeense* (#2852) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0082 - *Leucojum roseum* (#2853) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0083 - *Leucojum tricophyllum* (#2854) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0084 - *Lavandula rediviva* (#2885) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0085 - *Magnolia asheii* (#3098) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0086 - *Narcissus cantabricus* (#3249) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0087 - *Narcissus papyraceus* (Algeria) (#3254) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0088 - *Narcissus serotinus* (Spain) (#3259) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0089 - *Paeonia mascula* ssp. *arietina* (#3408) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0090 - *Prunus nipponica kurilensis* (#3980) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0091 - *Prunus sargentii* (#3982) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0092 - *Sarcococca confusa* (#4258) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0093 - *Scilla litardierei* (#4395) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0094 - *Scilla ramburei* (#4400) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0095 - *Shortia uniflora* (#4510) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0096 - *Sisyrinchium boreale* (#4600) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0097 - *Sisyrinchium cuspidatum* (#4604) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0098 - *Sisyrinchium demissum* (#4605) - ARGS 1990 Seed Exchange - Seed - 02/01.

- 91/0099 - *Sisyrinchium juncifolium* (#4612) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0100 - *Sisyrinchium nudicaule* (#4618) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0101 - *Sorbus reducta* (#4656) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0102 - *Thermopsis lupinoides* (#4768) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0103 - *Zepharanthes atamasco* (#5103) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0104 - *Zepharanthes flavissimum* (#5104) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0105 - *Zepharanthes mesochloa* (#5106) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0106 - *Zepharanthes minima* (#5107) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0107 - *Zepharanthes* sp.? (#5109) - ARGS 1990 Seed Exchange - Seed - 02/01.
- 91/0108 - *Acer trautvetteri* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0109 - *Aronia prunifolia* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0110 - *Clethra barbinervis* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0111 - *Cotula coronopifolia* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0112 - *Daphne oleoides* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0113 - *Daphne sericea* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0114 - *Eryngium bourgatii* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0115 - *Eryngium giganteum* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0116 - *Genista aetnensis* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0117 - *Genista aspalathoides* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0118 - *Genista tenera* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0119 - *Hydrangea sargentiana* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0120 - *Iberis pruitii* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0121 - *Sisyrinchium convolutum* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0122 - *Sisyrinchium montanum* var. *crebrum* - Wisley Gardens - Woking, England - Seed - 02/04.
- 91/0123 - *Taiwania cryptomerioides* (Ta-Shui-Shan, Taiwan, 1800 M, 200-500 yr old native trees) - Duffield Lot #396) - J. W. Duffield - Shelton, WA - Seed - 02/08.
- 91/0124 - *Aucuba japonica* 'Albo-Fructosa' (Form #1) - Wolf Branch Nurseries - Greeneville, TN - Gallon - 02/09.
- 91/0125 - *Aucuba japonica* 'Albo-Fructosa' (Form #2) - Wolf Branch Nurseries - Greeneville, TN - Gallon - 02/09.
- 91/0126 - *Ilex cornuta* 'Cajun Gold' - Wolf Branch Nurseries - Greeneville, TN - Liners - 02/09.
- 91/0127 - *Ilex verticillata* 'Stoplight' - Wolf Branch Nurseries - Greeneville, TN - Gallon - 02/09.
- 91/0128 - *Ilex* X 'Edward J. Stevens' - Wolf Branch Nurseries - Greeneville, TN - Gallon - 02/09.
- 91/0129 - *Nandina domestica* 'Towne & Country' - Wolf Branch Nurseries - Greeneville, TN - Gallons - 02/09.
- 91/0130 - *Abies nordmanniana* (20 yr. old dwarf seedling) - Herman Schmidt - Durham, NC - 3' B&B - 02/10.
- 91/0131 - *Calluna vulgaris* 'Blazeaway' - Lakeview Nursery - Spruce Pine, NC - B&B specimen - 02/11.
- 91/0132 - *Prunus fremontii* (CA Hwy 74 S of Palm Springs) - Bruce Mowrey - Bakersfield, CA - Seedlings - 02/11.
- 91/0133 - *Morus* sp. "Dwarf, Thread-Leaf" - Siskiyou Rare Plant Nursery - Medford, Or - Liner - 02/18.
- 91/0134 - *Hibiscus syriacus* 'Meehanii' - Nursery Stock Research Station - Boskoop, Holland - Liners - 02/18.
- 91/0135 - *Buddleia davidii* 'Pink Delight' - Nursery Stock Research Station - Boskoop, Holland - Liners - 02/18.
- 91/0136 - *Viburnum plicatum tomentosum* 'Watnabe' - Nursery Stock Res. Station - Boskoop, Holland - Liners - 02/18.
- 91/0137 - *Picea glauca* 'Rainbow's End' - Iseli Nursery - Boring, OR - Gallon - 02/18.
- 91/0138 - *Juniperus virginiana* (Weeping Selection) - Morris Kline - PA - Scion wood - 02/18.
- 91/0139 - *Abies nordmanniana*-dwarf from witches broom found by Talon Bucholz-first round prop., small grafted plant, received 3/7/91 from Talon Bucholz, Bucholz & Bucholz, OR.
- 91/0140 - *Callistemon subulatus* (#139) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0141 - *Carpinus laxiflora* (#61) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0142 - *Cupressus stephensonii* (#87) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0143 - *Kalmia microphylla* (#19) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0144 - *Magnolia salicifolia* (#131) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0145 - *Magnolia sieboldiana* (#132) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0146 - *Magnolia sinensis* (#133) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0147 - *Magnolia wilsonii* (#135) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0148 - *Pittosporum glabratum* (#155) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0149 - *Sarcococca orientalis* (#65) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0150 - *Tsuga chinensis* var. *formosana* (#154) - Washington Park Arboretum - Seattle, WA - Seed - 03/11.
- 91/0151 - *Abies amabilis* - Hoyt Arboretum - Portland, OR - Seed - 03/19.
- 91/0152 - *Abies cephalonica* - Hoyt Arboretum - Portland, OR - Seed - 03/19.
- 91/0153 - *Abies pinsapo* - Hoyt Arboretum - Portland, OR - Seed - 03/19.
- 91/0154 - *Acer davidii* - Hoyt Arboretum - Portland, OR - Seed - 03/19.
- 91/0155 - *Cephalotaxus fortunei* - Hoyt Arboretum - Portland, OR - Seed - 03/19.
- 91/0156 - *Stewartia koreana* - Hoyt Arboretum - Portland, OR - Seed - 03/19.
- 91/0157 - *Halesia diptera* var. *magniflora* (90-061) - Scott Arboretum (Salter Tree Farm)- Swarthmore, PA - 3' - 03/20.
- 91/0158 - *Acer platanoides* 'Crystal Norway' - Bailey Nurseries - St. Paul, MN - 7' Whip - 03/26.

- 91/0159 - Acer platanoides 'Oregon Pride' - Bailey Nurseries - St. Paul, MN - 7' Whip - 03/26.
- 91/0160 - Gleditsia triacanthos 'Summerlace' - Bailey Nurseries - St. Paul, MN - 6' Whip - 03/26.
- 91/0161 - Pyrus X 'Angel Wing' - Bailey Nurseries - St. Paul, MN - 4' Whip - 03/26.
- 91/0162 - Sorbus hupensis 'Coral Fire' - Bailey Nurseries - St. Paul, MN - 6' Whip - 03/26.
- 91/0163 - Ulmus X 'Cathedral' - Bailey Nurseries - St. Paul, MN - 6' Whip - 03/26.
- 91/0164 - Persea yunnanensis (#1374-38; Original plant from Arnold Arboretum 1938 grown from wild collected seed in China by Yu; collector #7835) - Univ. of WA Arboretum - Seattle, WA - 1' - 3/28.
- 91/0165 - Stewartia sinensis (HA88-1001:NA60693) - Holden Arboretum - Mentor, OH - 2' - 04/02.
- 91/0166 - Buxus sinensis (HA88-1008:NA60705) - Holden Arboretum - Mentor, OH - 2" - 04/02.
- 91/0167 - Hosta plantaginea (HA88-1010:NA60712) - Holden Arboretum - Mentor, OH - Plants - 04/02.
- 91/0168 - Castanea sequinii (HA88-1017:NA60721) - Holden Arboretum - Mentor, OH - 2' - 04/02.
- 91/0169 - Arisaema consanguineum (HA88-1026:NA60660) - Holden Arboretum - Mentor, OH - Corms - 04/02.
- 91/0170 - Gardneria nutans (HA88-1033:NA60660) - Holden Arboretum - Mentor, OH - 2" - 04/02.
- 91/0171 - Clerodendrum cyrtophyllum (HA88-1036:NA60674) - Holden Arboretum - Mentor, OH - 2' - 04/02.
- 91/0172 - Meliosma veitchiorum (HA88-1043:NA60683) - Holden Arboretum - Mentor, OH - 4" - 04/02.
- 91/0173 - Viburnum sympodiale (HA88-1046:NA60686) - Holden Arboretum - Mentor, OH - 6" - 04/02.
- 91/0174 - Acer mandshuricum (#4) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0175 - Acer pseudo-sieboldianum (#10) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0176 - Acer tschonoskii var. rubripes (#14) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0177 - Acer ukurunduense (#15) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0178 - Caulophyllum robustum (#39) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0179 - Dendropanax morbifera (#34) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0180 - Edgeworthia papyrifera (#216) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0181 - Elaeocarpus sylvestris (#83) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0182 - Euonymus macropterus (#60) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0183 - Ficus erecta (#139) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0184 - Ilex poneantha (#25) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0185 - Iris nertschinskia (#98) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0186 - Picrasma quassioides (#205) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0187 - Pittosporum sahnianum (#148) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0188 - Prunus takesimensis (#166) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0189 - Rhamnus yoshinoi (#158) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0190 - Raphiolepis umbellata var. liukiensis (#169) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0191 - Sinojackia xylocarpa (#211) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0192 - Zanthoxylum coreanum (#182) - Chollipo Arboretum - Chollipo, Korea - Seed - 04/08.
- 91/0193 - Citrus tachibana (#150) - Hiroshima Botanical Garden - Hiroshima, Japan - Seed - 04/17.
- 91/0194 - Magnolia obovata (#111) - Hiroshima Botanical Garden - Hiroshima, Japan - Seed - 04/17.
- 91/0195 - Michelia compressa (#112) - Hiroshima Botanical Garden - Hiroshima, Japan - Seed - 04/17.
- 91/0196 - Myrica rubra (#114) - Hiroshima Botanical Garden - Hiroshima, Japan - Seed - 04/17.
- 91/0197 - Schisandra repanda (#163) - Hiroshima Botanical Garden - Hiroshima, Japan - Seed - 04/17.
- 91/0198 - Symplocos chinensis var. leucocarpa f. pilosa (#172) - Hiroshima B. G. - Hiroshima, Japan - Seed - 04/17.
- 91/0199 - Symplocos coreana (#173) - Hiroshima Botanical Garden - Hiroshima, Japan - Seed - 04/17.
- 91/0200 - Acer negundo 'Sensation' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0201 - Acer nigrum 'Greencolumn' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0202 - Acer rubrum 'Autumn Blaze' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0203 - Acer saccharum 'Sweet Shadow' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0204 - Acer saccharum 'Skinner's Cutleaf' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0205 - Acer saccharum 'Commemoration' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0206 - Acer saccharum 'Legacy' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0207 - Malus X 'Dobloons' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0208 - Malus X 'Louisa' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0209 - Malus X 'Pink Princess' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0210 - Quercus robur 'Skyrocket' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0211 - Prunus X 'Snow Goose' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0212 - Prunus X 'Tai Haku' - Schmidt Nursery - Boring, OR - 6' BR - 04/17.
- 91/0213 - Cercis racemosa - Hidden Hollow Nursery - Belvidere, TN - 4'BR - 04/18.
- 91/0214 - Amsonia elliptica (3) (NA60250) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0215 - Arisaema fargesii (2) (NA49024) - U. S. National Arboretum - Washington, DC - Bulbs - 04/19.
- 91/0216 - Aristolochia manchuriensis (NEKG36) (NA61640) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0217 - Callicarpa bodinieri (#49 NA62444) - U. S. National Arboretum - Washington, DC - Qt. - 04/19.
- 91/0218 - Celastrus angulatus (2) (NA60696) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0219 - Clematis patens (NA55257-C) - U. S. National Arboretum - Washington, DC - 3" - 04/19.

- 91/0220 - Clerodendron cyrtophyllum Turcz. (NA60674) - U. S. National Arboretum - Washington, DC - Qt. - 04/19.
- 91/0221 - Daphniphyllum glaucescens (NA60667) - U. S. National Arboretum - Washington, DC - Qt.- 04/19.
- 91/0222 - Deutzia glomeriflora (NA61506) - U. S. National Arboretum - Washington, DC - Qt. - 04/19.
- 91/0223 - Diosporum sp. (NA62486) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0224 - Emmenopterys henryi (NA60687) - U. S. National Arboretum - Washington, DC - Qt. - 04/19.
- 91/0225 - Gymnocladus chinensis (NA59201) - U. S. National Arboretum - Washington, DC - 3Gallon- 04/19.
- 91/0226 - Hinobambusa tranquilans (NA56970) - U. S. National Arboretum - Washington, DC - 2 gal - 04/19.
- 91/0227 - Ilex wilsonii (3) (NA60679) - U. S. National Arboretum - Washington, DC - 3Qt. - 04/19.
- 91/0228 - Incarvillea sinensis (NA60285) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0229 - Koelreuteria rigida (NA62458-Dudley 31) - U. S. National Arboretum - Washington, DC - Qt. - 04/19.
- 91/0230 - Liriope sp. (NA54659-D) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0231 - Lonicera tragophylla (#51 NA62459) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0232 - Ophiopogon jaburan (NA54659) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0233 - Pyrrosia hastata (NA45508-D) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0234 - Pyrrosia lingua 'Mitsude' (NA39409) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0235 - Reineckia carnea (Var. Selection) (NA40046) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0236 - Rubus rosaefolius (Dudley/China 22- NA62469) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0237 - Saruma henryi (NA49482) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0238 - Schizophragma corylifolium (NA60701) - U. S. National Arboretum - Washington, DC - 3" - 04/19.
- 91/0239 - Acer mono - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0240 - Acer nikoense (graft on A. Saccharinum) - New London Nursery - Lincoln University, PA - 1' - 4/20.
- 91/0241 - Cornus florida 'Hohman's Golden' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0242 - Cornus kousa 'Big Apple' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0243 - Cornus kousa 'Blue Shadow' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0244 - Cornus kousa 'Gay Head' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0245 - Cornus kousa 'Julian' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0246 - Cornus kousa 'Snow Bird' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0247 - Cornus kousa 'Square Dance' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0248 - Cornus kousa 'Steeple' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0249 - Corylus avellana 'Pendula' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0250 - Distylium micinoides - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0251 - Fraxinus excelsior 'Aurea' - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0252 - Hamamelis mollis 'Early Bright' - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0253 - Ilex verticillata 'Scarlett O'Hara' (Syn. Millcreek) - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0254 - Magnolia ? - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0255 - Oxydendron arboreum 'Oconee Ripple' - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0256 - Oxydendron arboreum 'Oconee Ruffle' - New London Nursery - Lincoln University, PA - Qt. - 4/20.
- 91/0257 - Rhododendron 'Tsuneshige Rokiyo' (Syn. 'Shige') - New London Nursery - Lincoln Univ., PA - Qt. - 4/20.
- 91/0258 - Sorbus rufoferiginea 'Longwood Sunset' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0259 - Taxodium ascendens 'Prairie Sentinel' - New London Nursery - Lincoln University, PA - Graft - 4/20.
- 91/0260 - Calycanthus 'Edith ?' - Scott Arboretum - Swarthmore, PA - 4" - 05/07.
- 91/0261 - Dalbergia benthami (#81) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0262 - Dalbergia mimosoides (#82) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0263 - Daphniphyllum calycinum (#189) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0264 - Dendropanax chevalieri (#177) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0265 - Glochidium wilsonii (#57) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0266 - Magnolia foveolata (#92) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0267 - Michelia maudiae (#369) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0268 - Michelia platypetala (#94) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0269 - Styrax confusus (#149) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0270 - Styrax odoratissima (#432) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0271 - Ternstroemia kwangtungensis (#232) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0272 - Tutcheria microcarpa (#234) - Shanghai Botanic Garden - Shanghai, China - Seed - 05/08.
- 91/0273 - Eryngium giganteum 'Miss Willmote's Ghost' - Univ. of Reading Bot. Garden - Reading - Seed - 05/10.
- 91/0274 - Pistachia lentiscus (ARA500) - Univ. of Reading Bot. Garden - Reading, England - Seed - 05/10.
- 91/0275 - Juniperus phoenicea (CUP450) - Univ. of Reading Bot. Garden - Reading, England - Seed - 05/10.
- 91/0276 - Campanula takesmana - Huntington Bot. Garden - Pasadena, CA - Qt. - 05/13.
- 91/0277 - Crinum pedunculatum - Huntington Bot. Garden - Pasadena, CA - Division - 05/13.
- 91/0278 - Teucrium chamadrys - Huntington Bot. Garden - Pasadena, CA - Liner - 05/13.
- 91/0279 - Camellia japonica 'Unryu' - Nuccio's Camellias - ?, CA - Gallon - 05/13.
- 91/0280 - Gardenia jasminoides (Sp. - Single flowered) - Nuccio's Camellias - ?, CA - Gallon - 05/13.
- 91/0281 - Rhododendron (Azalea) 'Chinpu' - Nuccio's Camellias - ?, CA - Gallon - 05/13.

- 91/0282 - Rhododendron (Azalea) 'Hakuturu' - Nuccio's Camellias - ?, CA - Gallon - 05/13.
- 91/0283 - Rhododendron (Azalea) 'Variegated Ruffled Giant' - Nuccio's Camellias - ?, CA - Gallon - 05/13.
- 91/0284 - Aspidistra elatior 'Milky Way' - U. Cal. Davis Arboretum - Davis, CA - Gallon - 05/15.
- 91/0285 - Asclepias cordifolia (A89-593) - U. Cal. Davis Arboretum - Davis, CA - Liner - 05/15.
- 91/0286 - Buxus balearica - U. Cal. Davis Arboretum - Davis, CA - Liner - 05/15.
- 91/0287 - Campanula punctata - U. Cal. Davis Arboretum - Davis, CA - Qt. - 05/15.
- 91/0288 - Cercis griffithii - U. Cal. Davis Arboretum - Davis, CA - Seed - 05/15.
- 91/0289 - Callistemon sp. (Mauve-Pink) - U. Cal. Davis Arboretum - Davis, CA - Seed - 05/15.
- 91/0290 - Heteromeles arbutifolia var. cerina - U. Cal. Davis Arboretum - Davis, CA - Liner - 05/15.
- 91/0291 - X Leelenzia ranchorum (Chiranthodendron pentadactylon X Fremontodendron 'California Glory') - U. Cal. Davis Arboretum - Davis, CA - Rooted cutting - 05/15.
- 91/0292 - Cedrela sinensis 'Flamingo' - Sonoma Hort. Nursery - Sonoma, CA - Gallon - 05/16.
- 91/0293 - Deutzia sp. 'Pinkaloo' - Western Hills Nursery - Occidental, CA - Gallon - 05/16.
- 91/0294 - Hydrangea Unk. Sp. (Lacecap) - Western Hills Nursery - Occidental, CA - Gallon - 05/16.
- 91/0295 - Indigofera amblyantha - Western Hills Nursery - Occidental, CA - Qt. - 05/16.
- 91/0296 - Mahonia nevenii - Western Hills Nursery - Occidental, CA - Gallon - 05/16.
- 91/0297 - Robinia pseudoacacia 'Tortuosa' - Western Hills Nursery - Occidental, CA - Gallon - 05/16.
- 91/0298 - Sisyinchium bellum 'Variegata' - Western Hills Nursery - Occidental, CA - Qt. - 05/16.
- 91/0299 - Stachyurus himalaicus - Western Hills Nursery - Occidental, CA - Gallon - 05/16.
- 91/0300 - Viburnum 'Domotoi' (japonicum?) - Western Hills Nursery - Occidental, CA - Gallon - 05/16.
- 91/0301 - Bletilla striata 'Alba' - Peters & Wilson Nursery - Millbrae, CA - Gallon - 05/18.
- 91/0302 - Armeria maritima 'Leuchean' - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0303 - Carex buchanii - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0304 - Dianthus X 'Goblin' - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0305 - Festuca cinera 'Elijah Blue' - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0306 - Hedysarum X 'T&M Mix' - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0307 - Hipocrepis comosa - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0308 - Mertensia virginica - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0309 - Mimulus tilingii - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0310 - Oenothera stricta 'Sulphurea' - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0311 - Orostachys japonicus erubescens - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0312 - Penstemon glaber - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0313 - Phyteuma schenckeri - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0314 - Sedum album - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0315 - Sedum athoum - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0316 - Sedum japonicum - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0317 - Sedum sexangularum - Tony Avent - Raleigh, NC - Liner - 05/19.
- 91/0318 - Phlox subulata 'Millstream Daphne' - Wayside Gardens - Hodges, SC - 3" pot - 05/19.
- 91/0319 - Phlox subulata 'Scarlet Flame' - Wayside Gardens - Hodges, SC - 3" pot - 05/19.
- 91/0320 - Carex siderostica 'Variegata' - Doug Ruhren - Durham, NC - Division - 05/19.
- 91/0321 - Rhododendron X 'Crete' - Boesker ???? - Gallon - 05/19.
- 91/0322 - Alstromeria sp. (83.0785) - UC Berkeley Bot. Garden - Berkeley, CA - Seed - 05/20.
- 91/0323 - Austrocedrus chilensis (49.367) - UC Berkeley Bot. Garden - Berkeley, CA - Cuttings - 05/20.
- 91/0324 - Clarkia (Chilean) - UC Berkeley Bot. Garden - Berkeley, CA - Seed - 05/20.
- 91/0325 - Cryptocarya alba - UC Berkeley Bot. Garden - Berkeley, CA - Seed - 05/20.
- 91/0326 - Fuchsia campos-portoi (80.525) - UC Berkeley Bot. Garden - Berkeley, CA - Divisions - 05/20.
- 91/0327 - Lobelia tupa - UC Berkeley Bot. Garden - Berkeley, CA - Plant - 05/20.
- 91/0328 - Pasithea caerulea (83.0266) - UC Berkeley Bot. Garden - Berkeley, CA - Seed - 05/20.
- 91/0329 - Solenomellis peduncularis - UC Berkeley Bot. Garden - Berkeley, CA - Seed - 05/20.
- 91/0330 - Vestia lycoides (Chile) - UC Berkeley Bot. Garden - Berkeley, CA - Seed - 05/20.
- 91/0331 - Arbutus andrachne (90-030S) - Saratoga Hort. Foundation - San Martin, CA - 4 Liners - 05/20
- 91/0332 - Arbutus X andrachnoides - Saratoga Hort. Foundation - San Martin, CA - 4 Liners - 05/20.
- 91/0333 - Buddlea japonica (90-223S) - Saratoga Hort. Foundation - San Martin, CA - 2 Liners - 05/20.
- 91/0334 - Bupleurum fruticosum (90-042S) - Saratoga Hort. Foundation - San Martin, CA - 2 Liners - 05/20.
- 91/0335 - Bauhinia forficata - San Marcos Nursery, Santa Barbara, CA - Liner - 05/21.
- 91/0336 - Abies durangensis (AA620-893) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0337 - Buckleya distichophylla (AA45-873) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0338 - Diervilla rivularis (AA134-88) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0339 - Hydrangea paniculata (AA86-0912) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0340 - Ilex collina (86-1044) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0341 - Ilex sp. (AA899-883) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0342 - Ilex sp. (AA900-883) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.

- 91/0343 - *Itea chinensis* (AA917-893) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0344 - *Itea yunnanensis* (AA432-903) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0345 - *Pinus arizonica* (AA622-893) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0346 - *Pseudolarix amabilis* (AA059-893) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0347 - *Pseudotsuga flahaultii* (AA623-893) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0348 - *Rhododendron polylepis* (AA 907-883) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0349 - *Styrax shiraiana* (AA455-89) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0350 - *Vitis coignetiae* (AA86-1141) - Arnold Arboretum - Jamaica Plain, MA - Liner - 06/06.
- 91/0351 - *Abutilon vitifolium* - Harlow Carr Bot. Garden - Harrogate, England - Seed - 06/10.
- 91/0352 - *Genista glabrescens* - Harlow Carr Bot. Garden - Harrogate, England - Seed - 06/10.
- 91/0353 - *Stewartia serrata* - Harlow Carr Bot. Garden - Harrogate, England - Seed - 06/10.
- 91/0354 - *Aristolochia clematis* (S1755) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0355 - *Callicarpa shikokiana* (S6250) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0356 - *Crataegus monogyna* (N5513) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0357 - *Hydrangea sargentiana* (J4352) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0358 - *Paliurus spina-christi* (J5293) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0359 - *Paris quadrifolia* (N1362) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0360 - *Ptelea nitens* (J5802) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0361 - *Rosa korschinskiana* (J5683) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0362 - *Rosa lupulina* (J5684) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0363 - *Rosa multiflora* (J5691) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0364 - *Sophora flavescens* (J4032) - Louis Pasteur U. Bot. Garden - Strasbourg, France - Seed - 06/11.
- 91/0365 - *Abies cephalonica* (#1) - Arboretum Mlynany - Slepčany, Czechslovakia - Seed - 06/26.
- 91/0366 - *Abies cilicica* (#2) - Arboretum Mlynany - Slepčany, Czechslovakia - Seed - 06/26.
- 91/0367 - *Abies nordmanniana* (#4) - Arboretum Mlynany - Slepčany, Czechslovakia - Seed - 06/26.
- 91/0368 - *Carpinus betulus* (#136) - Arboretum Mlynany - Slepčany, Czechslovakia - Seed - 06/26.
- 91/0369 - *Carpinus orientalis* (#138) - Arboretum Mlynany - Slepčany, Czechslovakia - Seed - 06/26.
- 91/0370 - *Mespilus germanica* (#241) - Arboretum Mlynany - Slepčany, Czechslovakia - Seed - 06/26.
- 91/0371 - *Xanthoceras sorbifolia* (#327) - Arboretum Mlynany - Slepčany, Czechslovakia - Seed - 06/26.
- 91/0372 - *Eucomis punctata* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0373 - *Iris bismarckiana* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0374 - *Iris cretensis* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0375 - *Iris halophila* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0376 - *Iris mandshurica* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0377 - *Iris sikkimensis* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0378 - *Myrica faya* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0379 - *Paeonia daurica* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0380 - *Paradisea liliastrum* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0381 - *Rubus plicatus* - Botanischer Garten der Universität Halle - Halle, Germany - Seed - 07/19.
- 91/0382 - *Pinus brutia* - Michael Frankis - England - Seed - 07/19.
- 91/0383 - *Pinus canariensis* - Michael Frankis - England - Seed - 07/19.
- 91/0384 - *Magnolia* X *brooklynensis* 'Evamaria' - Brooklyn Botanic Garden - Brooklyn, NY - 2' - 07/21.
- 91/0385 - *Magnolia* X 'Hattie Carthan' - Brooklyn Botanic Garden - Brooklyn, NY - 1' - 07/21.
- 91/0386 - *Magnolia* X 'Yellow Bird' - Brooklyn Botanic Garden - Brooklyn, NY - 1' - 07/21.
- 91/0387 - *Magnolia* X 'Marillyn' - Brooklyn Botanic Garden - Brooklyn, NY - 2' - 07/21.
- 91/0388 - *Magnolia* X 'Elizabeth' - Brooklyn Botanic Garden - Brooklyn, NY - 1' - 07/21.
- 91/0389 - *Hosta yingeri* (Variegated Seedling) - Brooklyn Botanic Garden - Brooklyn, NY - Plant - 07/21.
- 91/0390 - *Callicarpa shikokiana* - Brookside Gardens - Wheaton, MD - 2' - 07/21
- 91/0391 - *Caesalpinia gilliesii* - Darrin Dullin - Richmond, VA - Seed - 07/21.
- 91/0392 - *Butia capitata* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0393 - *Brahea armata* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0394 - *Chamaerops humilis* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0395 - *Erythrina humeana* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0396 - *Erythrina vespertilio* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0397 - *Livistona chinensis* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0398 - *Livistona decipiens* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0399 - *Pittosporum phillyraeoides* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0400 - *Yucca whipplei* ssp. *eremica* - Los Angeles County Arboretum - Arcadia, CA - Seed - 07/22.
- 91/0401 - *Camptotheca acuminata* - Morris Arboretum - Philadelphia, PA - 1' (3) - 07/23.
- 91/0402 - *Acer capillipes* var. *morifolium* - The N. C. Arboretum - Asheville, NC - Qt. - 07/27.
- 91/0403 - *Magnolia macrophylla* - The N. C. Arboretum - Asheville, NC - Qt. - 07/27.
- 91/0404 - *Agave victoria-regina* - Logan Calhoun - Dallas, TX - Gallon - 07/28.

- 91/0405 - Acer pentaphylla - Atlanta Botanical Garden - Atlanta, GA - Quart/2' - 08/02.
- 91/0406 - Chamaecyparis obtusa 'Mariesii' - Atlanta Botanical Garden - Atlanta, GA - 6" - 08/02.
- 91/0407 - Chamaecyparis thyoides 'Heatherbun' - Atlanta Botanical Garden - Atlanta, GA - 6" - 08/02.
- 91/0408 - Cryptomeria japonica 'Pyramidata' - Atlanta Botanical Garden - Atlanta, GA - 6" - 08/02.
- 91/0409 - Daphne genkwa - Atlanta Botanical Garden - Atlanta, GA - Gallon - 08/02.
- 91/0410 - Hedychium pradhanii - Atlanta Botanical Garden - Atlanta, GA - Gallon - 08/02.
- 91/0411 - Juniperus phoenicia var. Lycia - Atlanta Botanical Garden - Atlanta, GA - 2' - 08/02.
- 91/0412 - Juniperus pinchotii - Atlanta Botanical Garden - Atlanta, GA - 1' - 08/02.
- 91/0413 - Microstrobilus fitzgeraldii - Atlanta Botanical Garden - Atlanta, GA - 2 Gallon/1' - 08/02.
- 91/0414 - Pieris japonica (Early Flowering Selection) - Atlanta Botanical Garden - Atlanta, GA - 1' - 08/02.
- 91/0415 - Prunus serotina - Atlanta Botanical Garden - Atlanta, GA - Gallon/3' - 08/02.
- 91/0416 - Tetraclinis articulata - Atlanta Botanical Garden - Atlanta, GA - 6" - 08/02.
- 91/0417 - Thujopsis dolobrata 'Hondai' - Atlanta Botanical Garden - Atlanta, GA - 8" - 08/02.
- 91/0418 - Thujopsis dolobrata 'Nana' - Atlanta Botanical Garden - Atlanta, GA - 6" - 08/02.
- 91/0419 - Tigridia aff. mexicana lilacina - Atlanta Botanical Garden - Atlanta, GA - Seedlings - 08/02.
- 91/0420 - Tigridia durangensis - Atlanta Botanical Garden - Atlanta, GA - Seedlings - 08/02.
- 91/0421 - Tigridia vanhouttei - Atlanta Botanical Garden - Atlanta, GA - Seedlings - 08/02.
- 91/0422 - Tsuga sieboldii - Atlanta Botanical Garden - Atlanta, GA - 15" - 08/02.
- 91/0423 - Ilex cornuta 'Fineline' - Magnolia Nursery - Chunchula, AL - Gallon - 08/02.
- 91/0424 - Acer rufinerve - Hollis Wild, Appalachian Trees - Glendale Spring, NC - 18" liners (2) - 08/11.
- 91/0425 - Acer sieboldianum - Hollis Wild, Appalachian Trees - Glendale Spring, NC - 1' liners (2) - 08/11.
- 91/0426 - Quercus falcata pagodafolia - Hollis Wild, Appalachian Trees - Glendale Spring, NC - 1' liner (1) - 08/11.
- 91/0427 - Celtis sinensis 'Pendula' - Camellia Forest Nursery - Chapel Hill, NC - 2 Gal - 08/19.
- 91/0428 - Cercis griffithii (5/12/91-Tashkent Bot. Gardens via Elizabeth Whittaker) - UBC Bot. Garden - Seed - 08/26
- 91/0429 - Betula sp. (coll. Sacramento, CA) - Bill Barnes/Moon Nurseries - Yardley, PA - Seedlings - 08/27.
- 91/0430 - Cyrilla parvifolia - Tom Dodd Nursery - Semmes, AL - 5 Gallon (1) - 09/05.
- 91/0431 - Ilex opaca 'William Hawkins' - Tom Dodd Nursery - Semmes, AL - 5 Gallon (2) - 09/05.
- 91/0432 - Ilex vomitoria 'William Fleming' - Tom Dodd Nursery - Semmes, AL - 5 Gallon (2) - 09/05.
- 91/0433 - Ilex X aquipernyi 'Dorothy Lawton' - Tom Dodd Nursery - Semmes, AL - 5 Gallon (2) - 09/05.
- 91/0434 - Ilex X aquipernyi 'Patrica Varney' - Tom Dodd Nursery - Semmes, AL - 5 Gallon (2) - 09/05.
- 91/0435 - Magnolia tripetelia - Tom Dodd Nursery - Semmes, AL - 5 Gallon (2) - 09/05.
- 91/0436 - Rhododendron austrinum #002 - Tom Dodd Nursery - Semmes, AL - 5 Gallon (6) - 09/05.
- 91/0437 - Picea pungens glauca - Ellis Farm - Keene, NH - 4' B&B - 09/07.
- 91/0438 - Narcissus X '?' - Israel & Sons Garden Center - Asheville, NC - Bulbs - 09/12.
- 91/0439 - Narcissus X '?' - Israel & Sons Garden Center - Asheville, NC - Bulbs - 09/12.
- 91/0440 - Brahea sp. (T33M-9S-081891) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0441 - Cornus floccosa (T33M-25S-081991) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0442 - Hamamelis mexicana (T33M-13S-081891) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0443 - Nyssa sylvatica (T33M-20.5S-081991) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0444 - Philadelphus sp. (T33M-26S-081991) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0445 - Styrax americana var. pulverulenta (garden selection - East Texas) - Yucca Do - Waller, TX - Seed - 09/15.
- 91/0446 - Styrax platanifolia (Bexar Co., 30 Miles N. of San Antonio) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0447 - Styrax ramerizii (T33M-21S-081991) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0448 - Styrax youngae (T33M-3S-081791) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0449 - Styrax youngae (form) (T33M-10S-081891) - Yucca Do Nursery - Waller, TX - Seed - 09/15.
- 91/0450 - Styrax youngae (youngae X platanifolia?) (T33M-10S-081891) - Yucca Do Nur. - Waller, TX - Seed - 09/15.
- 91/0451 - Actinidia callosa (KEKE 884) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0452 - Actinidia callosa var. henryi (28656-437-90) - UBC Bot. G. - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0453 - Actinodaphne lancifolia (KE3886) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0454 - Adinandra millettii (27763-563-88) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0455 - Calocedrus macrolepis (Guiz 5/26468-497-88) - UBC Bot. G. - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0456 - Carpinus fargesiana - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0457 - Chamaecyparis obtusa 'Spiralis' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0458 - Chamaecyparis pisifera 'Plumosa Rogersii' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0459 - Chimonanthus yunnanensis (27815-568-89) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0460 - Clematis uncinata (28580-437-89) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0461 - Clerodendron kaichianum (SAS026) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0462 - Clethra esquirolii *(Guiz 76/25232-049-86) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0463 - Clethra monostachys - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0464 - Cotoneaster glabratus (KR-232/23057-523-83) - UBC Bot. G. - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0465 - Cryptomeria japonica 'Araucarioides' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0466 - Cryptomeria japonica 'Compressa' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.

- 91/0467 - *Cryptomeria japonica* 'Globosa' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0468 - *Cryptomeria japonica* 'Manhishu Sugi' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0469 - *Cryptomeria japonica* 'Monstrosa Nana' *- UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0470 - *Cupressocyparis leylandii* 'Rostrevor' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0471 - *Elsholtzia stauntonii* (28919-474-91) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0472 - *Hedycium densiflorum* - UBC Bot. Garden - Vancouver, BC, Canada - Division - 09/27.
- 91/0473 - *Hydrangea* (outside Gerald's office)? - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0474 - *Ilex pernyi* Veitchii - UBC Bot Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0475 - *Jasminum pubigerum* (18850-416-79) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings -09/27.
- 91/0476 - *Juniperus rigida* (Korea) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0477 - *Lagerstroemia chekiangensis* *- UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0478 - *Manglietia yunnanensis* (27818-568-89) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0479 - *Philadelphus delavayi* var. *melanocalyx* - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0480 - *Pittosporum subulisepalum* (SASU 27591-565-88) - UBC Bot. G. - Vancouver, BC - Cuttings - 09/27.
- 91/0481 - *Pittosporum truncatum* (SABE 1616/21378-464-90) - UBC Bot. Garden - Vancouver, BC - Cuttings - 09/27.
- 91/0482 - *Podocarpus macrophylla* 'Aurea' - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0483 - *Schisandra sphenanthera* (SABE 331/NA49487) - UBC Bot. Garden - Vancouver, BC - Cuttings - 09/27.
- 91/0484 - *Schizophragma integrifolia* - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0485 - *Schizophragma integrifolia* var. *denticulatum* - UBC Bot. Garden - Vancouver, BC - Cuttings - 09/27.
- 91/0486 - *Sorbus zahlbruckneri* *(SABE1555) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0487 - *Spiraea fritschiana* (KFBX 36/28965-049-91) - UBC Bot. Garden - Vancouver, BC - Cuttings - 09/27.
- 91/0488 - *Tripterygium doianum* (SOJA 295) - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0489 - *Tsusiophyllum tanakae* - UBC Bot. Garden - Vancouver, BC, Canada - Cuttings - 09/27.
- 91/0490 - *Larix laricina* 'Newport' - (Buckholz Nursery graft) - Wells-Medina Nursery - Medina, WA - Gallon - 09/29.
- 91/0491 - *Mahonia aquifolium* 'Smargard' - Wells-Medina - Medina, WA - Gallon - 09/29.
- 91/0492 - *Quercus ilex* - Wells-Medina Nursery - Medina, WA - Gallon/6' - 09/29.
- 91/0493 - *Colchicum autumnale* 'Album Plenum' - Jerry Flintoff - Seattle, WA - 2 bulbs - 09/29.
- 91/0494 - *Acer nipponicum* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0495 - *Actinidia polygama* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0496 - *Alnus glutinosa* 'Imperialis' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0497 - *Aralia cordata* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0498 - *Buddleia macrostegia* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0499 - *Callicarpa cathayana* - Heronswood Nursery - Kingston, WA - Gallon - 09/29.
- 91/0500 - *Calycanthus occidentalis* - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0501 - *Carpinus cordata* - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0502 - *Carpinus japonica* - Heronswood Nursery - Kingston, WA - Gallon - 09/29.
- 91/0503 - *Cercidiphyllum japonicum* 'Heronswood Globe' - Heronswood Nursery - Kingston, WA - Gallon - 09/29.
- 91/0504 - *Cercis chinensis* 'Shirobana' ('Alba?') - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0505 - *Corylopsis sinensis* var. *Veitchiana*' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0506 - *Cryptomeria japonica* 'Gyo Kruya' - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0507 - *Cryptomeria japonica* 'Minima' (Sic - 'Spiralis'??) - Heronswood Nursery - Kingston, WA - Qt. - 09/29
- 91/0508 - *Disanthus cercidifolia* - Heronswood Nursery - Kingston, WA -Liner - 09/29.
- 91/0509 - *Eryngium pandanifolia* - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0510 - *Euptelea polyandra* - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0511 - *Fortunaria sinensis* - Heronswood Nursery - Kingston, WA - Gallon - 09/29.
- 91/0512 - *Evodia villosa* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0513 - *Hydrangea macrophylla* ssp. *normalis* 'Blue Wave' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0514 - *Hydrangea macrophylla* ssp. *normalis* 'Lanarth White' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0515 - *Hydrangea macrophylla* ssp. *normalis* 'Lilacina' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0516 - *Hydrangea macrophylla* ssp. *normalis* 'White Wave' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0517 - *Iris ensata* 'Heronswood Dazzler' - Heronswood Nursery - Kingston, WA - Division - 09/29.
- 91/0518 - *Kerria japonica* 'Alba' - Heronswood Nursery - Kingston, WA - Gallon - 09/29.
- 91/0519 - *Leycestra crocothrysos* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0520 - *Lindera obtusiloba* - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0521 - *Mallotus apelta* - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0522 - *Phellodendron japonicum* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0523 - *Salix alba* 'Chermesina' - Heronswood Nursery - Kingston, WA - Gallon - 09/29.
- 91/0524 - *Salix alba* 'Elegantissima' - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0525 - *Sambucus canadensis* 'Acutiloba' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0526 - *Sambucus racemosa* 'Plumosa Aurea' - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0527 - *Sorbaria aitchisonii* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0528 - *Spiraea cantonensis* - Heronswood Nursery - Kingston, WA - Gallon - 09/29.

- 91/0529 - *Spiraea nipponica toasensis* - Heronswood Nursery - Kingston, WA - Liner - 09/29.
- 91/0530 - *Stephandra tanakae* - Heronswood Nursery - Kingston, WA -Liner - 09/29.
- 91/0531 - *Vancouveria planipetala* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0532 - *Viburnum X bodnantense 'Deben'* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0533 - *Weigela maximowiczii* - Heronswood Nursery - Kingston, WA -Liner - 09/29.
- 91/0534 - *Zelkova sinica* - Heronswood Nursery - Kingston, WA - Qt. - 09/29.
- 91/0535 - *Acer henryi* (3) - Barry Yinger - Far Point, NJ - Seedlings - 10/01.
- 91/0536 - *Lycoris incarnata* - Barry Yinger - Far Point, NJ - Bulb - 10/01.
- 91/0537 - *Vestia foetida* - Chelsea Physic Garden - London, England - Seed - 10/06.
- 91/0538 - *Carya* sp. (La Trinidad - T34M-4S-100591) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0539 - *Cornus florida* var. *pringlei* (El Butano, 7,000' - T34M-?-100591) - Yucca Do Nur. - Waller, TX - Seed - 10/10.
- 91/0540 - *Ilex discolor* (San Carlos Mts. - T34M-26S-100191) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0541 - *Ilex rubra* (T34M-23S-100791) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0542 - *Quercus muehlenbergii* (San Carlos Mts. - T34M-19S-100591) - Yucca Do Nur. - Waller, TX - Seed - 10/10.
- 91/0543 - *Quercus polymorpha* 'Yellow Petiole' - (T34M-2S-100591) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0544 - *Quercus polymorpha* (T34M-16S-100791) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0545 - *Quercus polymorpha* (T34M-20S-100791) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0546 - *Quercus risophylla* - (5,000' - T34M-5S-100591) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0547 - *Quercus risophylla* - (T34M-12S-100591) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0548 - *Quercus risophylla* - (t34M-43S-100591) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0549 - *Quercus sartorii* (T34M-15S-100791) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0550 - *Quercus* sp. (T34M-17S-100591) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0551 - *Quercus* sp. (Choice New Oak - T34M-34S-100591) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0552 - *Quercus* sp. (Spinoza Oak - Choice - T34M-35S-100891) - Yucca Do Nursery - Waller, TX - Seed - 10/10.
- 91/0553 - *Liriope muscari* 'Rocket' (Landis 1989) - C. Landis - Spanish Fort, AL - Division - 10/11.
- 91/0554 - *Ophiopogon japonicus* 'Silver Mist' - C. Landis - Spanish Fort, AL - Division - 10/11.
- 91/0555 - *Ophiopogon japonicus* 'Variegatus' - C. Landis - Spanish Fort, AL - Division - 10/11.
- 91/0556 - *Itea chinensis* var. *oblonga* - Brooklyn Botanic Garden - Brooklyn, NY - Gallon - 10/12.
- 91/0557 - *Ilex vomitoria* 'Tricolor' - Louisiana Nursery - Opelousas, LA - Qt. - 10/14.
- 91/0558 - *Ilex vomitoria* '?' - Louisiana Nursery - Opelousas, LA - Qt. - 10/14.
- 91/0559 - *Magnolia grandiflora* 'Charles Dickens' - Louisiana Nursery - Opelousas, LA - 2 Gal/2' - 10/14.
- 91/0560 - *Ilex* X '*Martha Berry*' - (*latifolia* X ?) (Tom Dodd Jr.) - Ken Tilt - Auburn Univ. - Auburn, AL - 1 Gal - 10/14.
- 91/0561 - *Hypericum ascyron* (Kangwon Prov., Korea) - Kew Gardens - London, England - Seed - 10/20.
- 91/0562 - *Rosa* sp. (9015, Qiaoguo, Gansu, China, 2260M) - James Waddick - Kansas City, MO - Seed - 10/21.
- 91/0563 - *Rosa* sp. (9016 Nanshan, Xinjiang, China, 1750 M) - James Waddick - Kansas City, MO - Seed - 10/21.
- 91/0564 - *Acer saccharum* (Caddo Mts., OK Source) - Sunshine Nursery - Clinton, OK - Seed - 10/30.
- 91/0565 - *Clethra alnifolia* 'Pink Spire' - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0566 - *Ilex amelanchier* (female) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0567 - *Ilex amelanchier* (male) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0568 - *Ilex cornuta* 'Sunrise' - Taylor's Nursery - Raleigh, NC - 5 gal - 10/31.
- 91/0569 - *Ilex crenata* 'Snowflake' - Taylor's Nursery - Raleigh, NC - 3 gal - 10/31.
- 91/0570 - *Ilex opaca* 'Dan Fenton' (female) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0571 - *Ilex opaca* 'George E. Hart' (female) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0572 - *Ilex opaca* 'Jersey Knight' (male) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0573 - *Ilex opaca* 'Jersey Princess' (female) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0574 - *Ilex opaca* 'Maurice Rivers' (female) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0575 - *Ilex opaca* 'Red Velvet' (female) - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0576 - *Ilex* X *attenuata* 'Sunny Foster' - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0577 - *Ilex* X '*Blazer*' - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0578 - *Ligustrum sinensis* 'Wembish' - Taylor's Nursery - Raleigh, NC - 1 gal - 10/31.
- 91/0579 - *Deutzia setchuenensis corymbiflora* - Marco Stufano/Wave Hill Garden - Bronx, NY - Division - 11/22.
- 91/0580 - *Euphorbia* ? - Marco Stufano/Wave Hill Garden - Bronx, NY - Division - 11/22.
- 91/0581 - *Vinca minor* 'Gertrude Jekyll' - Marco Stufano/Wave Hill Garden - Bronx, NY - Divisions - 11/22.
- 91/0582 - *Helwingia japonica* (2 clones) - Barry Yinger /Leonard Buck Garden - Far Hills, NJ - Cuttings - 11/22.
- 91/0583 - *Cymbalaria muralis* - Heronswood Nursery - Kingston, WA - Seed - 11/22.
- 91/0584 - *Dieris grandiflora* - Heronswood Nursery - Kingston, WA - Seed - 11/22.
- 91/0585 - *Humulus japonicus* 'Variegatus' - Heronswood Nursery - Kingston, WA - Seed - 11/22.
- 91/0586 - *Cephalanthus occidentalis* (Wayne Co., MS) - The N. C. Arboretum - Asheville, NC - 2' - 12/03.
- 91/0587 - *Fothergilla major* (Burke Co., NC) - The N. C. Arboretum - Asheville, NC - 2' - 12/03.
- 91/0588 - *Gymnocladus dioecus* - The N. C. Arboretum - Asheville, NC - 2' - 12/03.
- 91/0589 - *Magnolia acuminata* (Haywood Co., NC) - The N. C. Arboretum - Asheville, NC - 2' - 12/03.
- 91/0590 - *Magnolia macrophylla* (Bartow Co., GA) - The N. C. Arborettum - Asheville, NC - 5" - 12/03.

- 91/0591 - *Quercus durandii* (Edgefield Co., SC) - The N. C. Arboretum Asheville, NC - 1' - 12/03.
- 91/0592 - *Quercus oglethorpensis* (McCormick Co., SC) - The N. C. Arboretum Asheville, NC - 2' - 12/03.
- 91/0593 - *Robinia boyntonii* (Anderson Co., TN) - The N. C. Arboretum Asheville, NC - 1' - 12/03.
- 91/0594 - *Viburnum nudum* var. *angustifolium* (Liberty Co., FL) - The N. C. Arboretum Asheville, NC - 6" - 12/03.
- 91/0595 - *Abelmoschus manihot* - Wave Hill Gardens - Bronx, NY - Seed - 12/08.
- 91/0596 - *Amaranthus* sp. '238th St.' - Wave Hill Gardens - Bronx, NY - Seed - 12/08.
- 91/0597 - *Mina lobata* - Wave Hill Gardens - Bronx, NY - Seed - 12/08.
- 91/0598 - *Ricinus communis* 'Carmencita' - Wave Hill Gardens - Bronx, NY - Seed - 12/08.
- 91/0599 - *Franklinia alatamaha* - Mr. Elwood Harris - Raleigh, NC - 2' - 12/10.
- 91/0600 - *Abies mexicana* (T36M-09S-111091; 8,200') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0601 - *Abies vejarii* (T36M-57.5S-111391; 11,100') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0602 - *Agave scabra* (T36M-41S-111391; 9,680') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0603 - *Choisya dumosa* (T35M-18S-102091; 7,000') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0604 - *Pinus ayacahuite* var. *brachyphyta* (T36M-15S-111091; 9,300') - Yucca Do Nur. - Waller, TX - Seed - 12/22.
- 91/0605 - *Pinus culminicola* (T36M-55S-111391; 11,100') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0606 - *Pinus johannis* (T36M-76S-111591; 8,300') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0607 - *Pinus maximartinezii* (T36M-101S-111791; 8,000') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0608 - *Pinus nelsonii* (T36M-105.5S-111991; 7,800') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0609 - *Pinus pinceana* (T36M-03S-111091; 6,900') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0610 - *Platanus mexicana* (T36M-37S-111191; 5,000') - Yucca Do Nursery - Waller, TX - Seed - 12/22.
- 91/0611 - *Agave* sp. (3' round w/purple foliage) - Wild Collection - Mexico - Seed - 12/29.
- 91/0612 - *Agave* sp. (7,200') - Wild Collection - Mexico - Seed - 12/29.
- 91/0613 - *Agave striata* (5 seedling color forms) - Wild Collection - Mexico - Divisions - 12/29.
- 91/0614 - *Aloysia microstachys* - Wild Collection - Mexico - Cuttings (6) - 12/29.
- 91/0615 - *Asphodelus fistulosus* - Wild Collection - Mexico - Seed - 12/29.
- 91/0616 - *Brahea decumbens* - Wild Collection - Mexico - Seedlings (2) - 12/29.
- 91/0617 - *Buddleia scordiodes* - Wild Collection - Mexico - Cuttings (6) - 12/29.
- 91/0618 - *Callicarpa cordata* - Wild Collection - Mexico - Seed - 12/29.
- 91/0619 - *Cercis mexicana* - Wild Collection - Mexico - Seed - 12/29.
- 91/0620 - *Clethra pringlei* (T37M-3S-122991; 1,800'; Purification) - Wild Collection - Mexico - Seed - 12/29.
- 91/0621 - *Cucurbita* sp. (yellow spiny fruit) - Wild Collection - Mexico - Seed - 12/29.
- 91/0622 - *Gaultheria* sp. - Wild Collection - Mexico - Cuttings (5) - 12/29.
- 91/0623 - *Gelsemium sempervirens* - Wild Collection - Mexico - Cuttings (10) - 12/29.
- 91/0624 - *Hamamelis mexicana* - Wild Collection - Mexico - Root Suckers & Scion Wood - 12/29.
- 91/0625 - *Ilex* sp. (deciduous; choice large fruit) (T37M-24S-122991; 6,000') - Wild Collection - Mexico - Seed - 12/29.
- 91/0626 - *Ilex* sp. (evergreen - fine toothed) - Wild Collection - Mexico - Cuttings (5) - 12/29.
- 91/0627 - *Ilex* sp. (evergreen) - Wild Collection - Mexico - Cuttings (15) - 12/29.
- 91/0628 - *Ilex* sp. (evergreen) (T37M-13C-122991) - Wild Collection - Mexico - Cuttings (27) - 12/29.
- 91/0629 - *Ilex* sp. (evergreen) (T37M-4C-122891; 2,900') - Wild Collection - Mexico - Cuttings (18) - 12/29.
- 91/0630 - *Ilex* sp. (evergreen) (T37M-16S-122991; 4,800'; Purification) - Wild Collection - Mexico - Seed - 12/29.
- 91/0631 - *Juniperus flaccida* (Compact Selection) - Wild Collection - Mexico - Cuttings (11) - 12/29.
- 91/0632 - *Magnolia schiedeana* - Wild Collection - Mexico - Cuttings (7) - 12/29.
- 91/0633 - *Malacomalus* sp. - Wild Collection - Mexico - Cuttings (3) - 12/29.
- 91/0634 - *Mimosa martindelcampoi* - Wild Collection - Mexico - Seed - 12/29.
- 91/0635 - *Mitchellia repens* - Wild Collection - Mexico - Cuttings (4) - 12/29.
- 91/0636 - *Mitchellia repens* - Wild Collection - Mexico - Seed - 12/29.
- 91/0637 - *Porlieria angustifolia* - Wild Collection - Mexico - Cuttings - 12/29.
- 91/0638 - *Rhus virens* - Wild Collection - Mexico - Seed - 12/29.
- 91/0639 - *Sedum* sp. - Wild Collection - Mexico - Cuttings (12) - 12/29.
- 91/0640 - *Styrax ramerizeii* - Wild Collection - Mexico - Scion Wood - 12/29.
- 91/0641 - *Styrax* sp. (youngae?) - Wild Collection - Mexico - Scion Wood - 12/29.
- 91/0642 - Unknown Ericaceous (Cleyera?) - Wild Collection - Mexico - Cuttings (10) - 12/29.
- 91/0643 - Unknown Groundcover - Wild Collection - Mexico - Cuttings (4) - 12/29.
- 91/0644 - Unknown Broadleaved Evergreen Tree - Wild Collection - Mexico - Cuttings (2) - 12/29.
- 91/0645 - Unknown Broadleaved Evergreen Shrub (Itea?) - Wild Collection - Mexico - Cuttings (12) - 12/29.
- 91/0646 - *Bletilla ochracea* X *B. striata* - Yucca Do Nursery - Waller, TX - Seed - 12/31.
- 91/0647 - *Ceanothus* sp. - Yucca Do Nursery - Waller, TX - Cuttings (5) - 12/31.
- 91/0648 - *Cercis mexicana* (Select Form) - Yucca Do Nursery - Waller, TX - Scions - 12/31.
- 91/0649 - *Dioone edule* - Yucca Do Nursery - Waller, TX - Seed - 12/31.
- 91/0650 - *Magnolia virginiana* (Select Form) - Yucca Do Nursery - Waller, TX - Scions - 12/31.
- 91/0651 - *Mahonia chochoa* - Yucca Do Nursery - Waller, TX - Seedlings - 12/31.
- 91/0652 - *Myrospermum suzannum* - Yucca Do Nursery - Waller, TX - Seed - 12/31.

- 91/0653 - *Picea martinezii* - Yucca Do Nursery - Waller, TX - Scions - 12/31.
- 91/0654 - *Picea* sp. - Yucca Do Nursery - Waller, TX - Scions - 12/31.
- 91/0655 - *Picea* sp. (select blue form) - Yucca Do Nursery - Waller, TX - Scions - 12/31.
- 91/0656 - *Pinus cembroides* 'Pina Nevada' - Yucca Do Nursery - Waller, TX - Scions - 12/31.
- 91/0657 - *Wisteria sinensis* (long-flowered white) - Yucca Do Nursery - Waller, TX - Scions - 12/31.
- 91/0658 - *Cathaya argophylla* (China) - Confidential Source - Seed - Received during year.