

# JC Raulston Arboretum

## Friends of the Arboretum Newsletter

### Number 19

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## J. C. Raulston

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### Notes from the Arboretum

Quote from newsletter Issue #18 - "I'm shooting for another issue in November, and a third in December to give our goal of three a year." Well, so much for goals. Back to reality and Raulston's famed columns of excuses. Three major factors seem to have figured into it all this time. When the December issue of Horticulture came out with the incredibly kind and generous article by Allen Lacy on The NCSU Arboretum (now the JC Raulston Arboretum) - and his gracious publicizing of the newsletter - we were absolutely flooded by letters from the quarter-million Horticulture subscribers asking for sources of plants (assuming very incorrectly that we knew where every plant in the U.S. could be located) and a huge number of new subscribers to our newsletter based on the praise heaped on it by Allen. For several months it has taken 1-3 hours a day just to handle all this unexpected mail and associated questions and comments. With my normal paranoia of writing for any audience - the extra emotional load of all these new subscribers out there "expecting" wonderful things has absolutely petrified me. So you can easily see, this delay is entirely Allen's fault. (Thank heavens for illogical scapegoat mechanisms!)

I'm sure the overcommitment to forty out-of-state lectures, two double-sized classes (due to the skip while on leave last spring) to teach, and other assorted personal distractions have had nothing to do with my procrastination. As usual, the pressure of announcing soon-to-arrive upcoming events finally forces me to put something to paper (keyboard) - not at all as wonderful as what Allen described, so you can all just settle your expectations right now and plan on coming back to reality.

People: Looking back at our last "people notes" of December 1987 seems like ancient history now. The department head search described then is of course long over and our "new" leader is a long-time member of the Horticultural Science Department - Dr. Tom Monaco. He is a noted herbicide and weed control authority with a long string of accomplishments and awards including Top Graduate Student Educator in the U.S. presented by ASHS. Dr. Monaco is demonstrating great interest and support of the arboretum with frequent communications to administrators throughout the university about our programs and needs - we are delighted to welcome him to his "new" office (8 months ago).

Dr. Stuart Warren has taken over the Arboriculture/Grounds Maintenance teaching and research position formerly held by Dr. Ted Bilderback. Dr. Warren received his Ph.D. from our department in weed science studies - and worked at the Mountain Crops Research Station at Fletcher for a year before returning to Raleigh. We are absolutely delighted to have him in this position. He is a brilliant and hard-working researcher, a sure candidate for an outstanding teaching award as soon as eligible, a cooperative worker with people throughout the department and industry. This semester his students are heavily involved in various kinds of support work in the arboretum. Many thanks Stu. As a part of the reorganization with his entering the program - my responsibilities have altered slightly with the addition of teaching the two-year program course in Nursery Production - bringing me up to 5 courses a year now.

Faculty in the department come and go at a rapid pace - good friend Dr. Kathy Williams - apple extension specialist moved to Washington state for a new job - and Mr. Michael Parker from Michigan State University has been hired for her position; Ms. Susan Arrendell (Potato Breeding) left and Dr. Mary Jo Wannamaker will replace; Mr. Tom Ranney (Cornell University) will become the new nursery crops research specialist at the Mountain Crops Research Station; Ms. Kathie Kalmowitz has temporarily taken over the weed science extension position held by Dr. Rich Bonanno; Dr. Jonathan Schulthesis will join as a new vegetable extension faculty member;

and we begin to look for a new person for Dr. Joe Love's position as he retires this summer. Dr. Love has contributed the annual displays at the arboretum for so long and we will miss his support and excellent handling of the annuals. Dr. Bryce Lane received the Outstanding Faculty Award from the Agricultural Institute Club (adding to his ever-growing list of best teacher awards).

Mr. Will Hooker, landscape horticulture faculty member and vital contributor to the arboretum in so many ways, left in July of 1988 for a year of study leave - bicycling to California with many adventures as the first phase of his leave. Mr. Curtis Brooks (who designed the arboretum "White Garden"), former curator at the Coker Arboretum and present MLA graduate student, is teaching the classes until Will's return.

Another "new" type of support comes from an "old" member of our staff - Mr. Andy Nicholas - the computer systems coordinator for our department who has given much assistance in the last year. He helped with selection of the desktop portable I took to Europe last year and has wired me into the departmental network so I can now use one of several laser printers in different offices (thanks Dr. Fonteno for the continual use of your printer). It has reached a point when the computer is down - everything in my office totally grinds to a standstill - what a change in such a short time! November brought a new Macintosh for the home office so work can theoretically continue there around the clock (but so far hasn't).

I mentioned in the last letter that Ms. Beth Thorne would be taking over the job of greenhouse superintendent - she has since married and moved to Florida - and our new superintendent is now Mr. Martin McIntyre. I was deeply sorry to lose Ms. Kathy Neely as secretarial help with her "retirement" to private life; and we have recently welcomed Ms. Martha Kelbaugh to that position - so many of you will be talking to her (as well as my wonderful "main" secretary - Ellen Cawthorne introduced in the last people news. Ellen is "family" now and we treasure her - absolutely wonderful; and she'll drop a typewriter on my head for saying so publically) as you call the arboretum number for assorted types of information and assistance. Mr. Kenny Bailey is a new technician assigned to the Unit #4 Farm (where the arboretum is located) - he worked with the arboretum in the past and is often involved in support work now - we appreciate his help very much. We now have a telephone at the arboretum with an answer machine which is checked daily (919-737-7641).

We were very excited this winter when our student, Mr. Carlton B. Wood, was awarded an overseas fellowship to study for a year in England gardens with all expenses covered, including housing and the use of an automobile. This remarkable fellowship is offered to one student in the U.S. each year (several years ago another NCSU student, Mr. Fred Blackley received the same honor). He will study and work at a number of the most noted of English botanic gardens and arboreta during the year. An amazing coincidence occurred in that there is a similar program for an English student to come to the U.S. to study for a year at an institution of their choice; and the same day that Carlton received the word of his award, we also received word that the English student had chosen NCSU for their year of study. For both awards to go to one school, and to get the news on the same day is a remarkable event. We are greatly honored by these dual achievements in ornamental horticulture by our programs.

So much has happened at the Arboretum in the last year, and so much is going on now - with the lack of a report on the arboretum in the last issue - I'm again stumped as how to even give a feel for everything occurring since December 1987. One of the best things to report is that 1988 was unquestionably the best climate/plant growing year since we began the arboretum in 1977. A very mild winter with no hardiness losses (zone 9 plants came through!); a long cool spring with perfect bloom of everything without the usual late frosts (frustrating to have missed such a spectacular bloom while on leave overseas) and also without the compressed bloom season which often occurs here when a few weeks of 90F takes a given floral display from its potential two weeks to a withering two days; a comfortable summer with adequate rain unlike much of the state (areas only 30 miles away had severe drought, and western N.C. continued in yet another year of continuing devastating drought); a long, mild fall nearly marred by an early frost at state fair time which took out a few of the more tender annuals - but then without any other significant cold all the way through December. (1989 is so far a whole other story with absolutely bizarre abnormal patterns almost daily - which will wait until the next issue for discussion).

On the plant side - 1988 was unquestionably the best year of new accessions since the arboretum began, with 1,000 new plants formally logged into our records and probably another hundred or two more which came in and were not recorded (Curators - hint, hint, hint!). There are so many wonderful things it would be hard to pick out those more remarkable than others - but a baker's dozen of some obvious (or personally) significant ones which have long been sought or hunted would include: *Gymnocladus chinensis* (the Chinese "Kentucky Coffeetree"); *Aralia elata* 'Silver Umbrella' sent by a Dutch nurseryman; *Cornus controversa* 'Variegata' (and *C. mas* 'Elegantissima' and 'Aurea' as well) from England; *Cupressocyparis leylandii* 'Golconda' - a new English cultivar which may give better gold foliage in summer here; the collection of *Mahonia X media* cultivars; *Stachyurus praecox* 'Magpie' - the variegated form; *Cercis canadensis* 'Silver Cloud' - the variegated one (plus 6 others, and seed from the white-flowered *C. siliquastrum* found in the wild in Turkey which has yielded 11 seedlings); *Sinowilsonia henryi*; *Betula uber*; *Chimonanthus zhejiangensis* (plus 4 other ones); *Akebia quinata* 'Japanese Variegata'; *Nandina domestica* 'Variegata' (plus 14 other ones!); and *Enkianthus sikokianus*. See the list at the back of the newsletter and marvel at the treasures.

Older plants in the arboretum continue to develop and mature with a constant succession of new items coming into flower or fruit. Though I missed it, I understand the *Sinojackia rehderana* in the west arboretum bloomed profusely last spring with masses of white *Styrax*-like flowers - almost certainly for the first time ever in N.C. - its great foliage, growth characteristics, and ease of propagation have made this one we've worked on for potential distribution in 1989.

Perhaps the most exciting of the plants greeting me upon return from my 5 month leave was the *Elliotia racemosa* blooming in the lathhouse for the first time. This very rare, nearly extinct endangered species from Georgia is spectacular with white plumes of flowers in July - only my second time to ever see it in flower - and it should get better year by year. Its rarity is due to difficulty in propagation -

both in the wild and in cultivation. Plants rarely set viable seed, stem cuttings will not root, there is nothing to graft to as understock - with the only workable propagation technique of root cuttings which requires the semi-"destruction" of parent plants to achieve (however it is available from Woodlanders Nursery). Like *Franklinia* it must have excellent drainage to survive in southern soils - thus its happiness in the lath house bark beds.

Another special treat upon return was finding the entire arboretum in such exceptional shape - simply proving again that my presence has no particular value in keeping everything going. As he did in 1981 on my previous (year-long) leave - Mr. Newell Hancock managed everything superbly. I had a fear that after 5 months of seeing 175 huge and extraordinary fine gardens in Europe that our little operation would be disappointing and discouraging by comparison. The collections still seemed remarkable even after those seen; and the maintenance was far above what I expected - even the nutgrass "meadows" we expect in summer were nowhere to be seen. We were fortunate once again with an exceptional pair of summer student workers giving up their chances for survival salaries to gain "experience" at the arboretum - we are proud of and indebted to Ms. Florence Hartmann and Mr. Tom Foley for their many extra efforts and quality work on our behalf. And as always, the many curators continue to polish and develop their areas with new plants, new displays, and ever-continuing inspiration.

Some major changes occurring during the year included the removal of the turf grass plots by the model gardens and Edith's perennial border - and their relocation to the area south of the annual trials. Also a beginning was made on a new display of hybrid tea roses in the same bed and we thank Mr. Harvey Bumgardner for his efforts in planting and maintaining the new rose collection.

In the model landscape "Water" garden, after several years of work the pool was completed by Tracy Traer's class in the spring; and this summer we finally had a beautiful display of aquatic plants through the efforts of Mr. Wayne Brooks who provided and maintained a wide variety of exotic plants and fish, and Mr. Bruce Mowrey who also added a collection of fish to the pool.

The very rare *Sinocalycanthus sinensis* again flowered this year with its beautiful white, camellia-like blossoms - and I was extremely excited when a seed pod set for the first time - with visions of growing a seedling population to look for some genetic variability. Later in the summer I worked the plant to get cuttings to build up stock for future distributions - and very carefully took especial notice of the one seed pod so it would not be disturbed - and then somehow even with all my concern, I proceeded to cut it off with the very first cutting I took! Screams and anguish - I could not believe I had done that to possibly the first seed pod to ever develop on this species in the U.S.! We cut the pod open, extracted and sowed the seed - but to no avail as they were obviously too immature. I should have left the job of taking cuttings to the competent and talented arboretum crew instead of my bungled job - still painful.

In late summer Edith Eddleman took on new challenges in finally obtaining the expansion area she had long pleaded for to increase the perennials display - a miniscule 18' X 350' border is so extremely limiting after all when you have an entire afternoon each week available for maintenance! So we gave her another 18' X 100' (in two 50' beds) - which took her and her crew roughly an hour and a half to completely fill with 12,000 more perennials (not really, but not far off either) - and now they are desperately needing much more space of course - life is tough. (We have some ideas for new areas for her - never fear).

Down near the Model Gardens area where the turf grasses were formerly located - in one of the beds opposite her existing border - Edith has now created an Elizabeth Lawrence Memorial Border - containing plants salvaged from both of the Lawrence Raleigh and Charlotte gardens, plants described in her writings, and newer plants in "the spirit" of how Ms. Lawrence would be gardening today if still alive. There are plans to erect a memorial plaque (one of the few we will allow in the garden) in honor of the great contribution Ms. Lawrence made to the world of horticultural literature - and we would welcome donations toward this purpose from anyone interested in contributing funds. (checks to: The N. C. Agricultural Foundation - for Elizabeth Lawrence memorial). In addition to the original three Lawrence books, we now have the recently published and fascinating "Gardening For Love" compiled from her letters and writings by Allen Lacy; and there are at least two more books to be published in the near future from her materials. Each year the awareness of her significance as a superb plantsman and distinguished writer grows - and sadly far too few North Carolina residents today know of her work. We hope this living memorial garden will help in this education process.

The other new Eddleman border is west of the existing perennial border, between it and the service road which bisects the farm. Not wanting to disturb the existing seasonal and color balance in the original border - she has designed the new one with the theme of a late fall, winter, and early spring border - to show the many plants which are so useful to "stretch" the gardening season to a year-round basis in our climate. Even in the short few months since its planting - many new and uncommon things are beginning to make their impact.

As we came into fall - the deciduous holly collection strutted its stuff in full glory this year as so many of the new cultivars came into spectacular fruit for the first time. This fine display, coupled with the Dr. Dirr article on the group in an American Nurseryman article - attracted much new attention to the collection from commercial nurseryman of the area and by October it was difficult to find an unfruited twig suitable for a cutting. Hopefully this will eventually mean greater availability of the deciduous holly cultivars in our local production industry for homeowner access in garden center markets. Everyone was particularly excited by a more compact and heavily berried unnamed seedling - which we plan to propagate and distribute in the coming year. *Ilex decidua* 'Warren's Red' and 'Jolly Red' seem to have maintained their fruit longer and with less sun scorch than any of the other cultivars.

The *Koelreuteria integrifolia* was another fall attraction with the huge panicles of September flowers followed by the pink/purple showy fruit lasting into the fall. Although more coarse in texture (growth, flowers, and fruit) than the "normal" *K. paniculata*, or even the less commonly seen and similar *K. bipinnata* - it seems to appeal to the public and possibly has a place for use in public landscapes (we have 240 seedlings coming for industry distribution this year). I find myself wondering what potentials exist for hybridization among *K.*

paniculata 'September', K. bipinnata, and K. integrifolia - all of which bloom at essentially the same time here. I was also excited that we had our first good seed set on the Cercis chingii plants (possibly the first to flower in the U.S. - back about 1986). We collected the seed; acid scarified them with cold stratification and presently have about 300 seedlings to distribute later this summer.

The Student Horticulture Club again donated funds to support arboretum development (as they have from the very beginning). With the money it was possible to install an overhead irrigation system for the entire lath house - making that display far easier to handle with more effective water coverage. We have also benefitted through help from work study students Chris Hardison and Michael Oliver and thank them for their efforts.

Another significant and long-awaited addition to the arboretum occurred in December when we were finally able to complete the paving walkway through the French Parterre:Groundcovers:Paving Materials area. A "temporary" walkway was hurriedly installed by students in a volunteer workday in 1980 as we desperately raced to try to get the arboretum ready for its formal dedication. The walk was just long enough to reach the width of the parterre, and on either end - a depression in the soil waiting for completion of the job repeatedly filled with water (followed by mud) and destroyed many a pair of shoes over the last 9 years as visitors tried to negotiate the swamp. Finally this year - Pi Alpha Xi, the student honorary society in ornamental horticulture, provided funds to buy paving stones to complete the job. We then found out it costs as much to pay to lay pavers as it does to buy them - and no other money was available to handle installation after we bought the pavers. We are very grateful to former students, Joe Steele and Gary Mazur, who now operate the commercial paving installation firm of Envisions (919-848-3081). They routinely install this type of pavers (not cheap - top prices and backed by absolutely top quality) and volunteered to bring their cutting equipment and crew to the farm for donation of time and labor to support the arboretum. In a long, busy day of hard work - they and volunteers Bill Jones, Paul Henry, Florence Hartmann, Chris Hardison, and Robert Foss did a beautiful job of installing the pavers which now brings that plaza closer to completion and definitely much more handsome and useful. Thanks to all for their support on this project.

To those of you who were not at the 1988 members free plant distribution evening - you missed one of the most amazing events in the history of the arboretum. Instead of the 100-150 members expected, an estimated 400 people tried to crowd into the tiny space of the horticulture greenhouse headhouse to struggle for the 4,000 plants placed on benches there. Hell hath no fury like an avid gardner in pursuit of the last Stachyurus! It was absolutely frightening and I was amazed we got out of it all with no serious personal injuries. People are still talking about it. Luckily we had far more plants to distribute than expected and no one went away empty-handed; in fact, we averaged some 10 plants available per person even with the huge number present.

Various complaints have been registered about the distribution and we have moved to do it during the day on a weekend next fall (see the EVENTS announcements to get it on your calendar) in hopes more people can attend more easily. We will also try to devise a system of fair and equitable access to everything (some of our poor young naive innocent students were nearly killed by seasoned veterans of the White Sale wars!). One member even canceled her membership over unhappiness with the distribution this year. Strange how an extra benefit quickly becomes a critical necessity. Few other public gardens distribute the rarity of plants we offer; most require members to purchase them when available; and one prominent garden recently began a program to offer members one plant of the type we've been offering for free for each donation of \$100 the garden receives! We'll keep trying to do the best we can - please be patient. Lots of goodies in propagation already for this fall!

A personal highlight of 1988, or in reality I should say of the entire decade, was the opportunity to spend a magical part of the fall semester sitting in on perhaps the most remarkable course I have ever experienced in my academic career. Dr. Denis Wood, landscape architecture faculty in the NCSU School of Design, teaches a graduate course (LAR 443) roughly entitled "The History of the Landscape from the Big Bang till Christmas 1988". I smugly felt that I knew a little about my favorite subjects of the world, history, philosophy, geography, human psychology, science and technology - how wrong I was! Every day in the class was an absolute miracle (well - more so once we got beyond the beginning 3 hours of Puerto Rican music! - but even that was essential in the end) - new understanding of familiar concepts blended in incredibly new patterns and combinations; new concepts I've never even approached before; great humor; amazing revelations.

Who else could put all the essential information on everything that has happened in the history of the earth on a one page class handout? Who else could mesmerize one simply by sitting at a desk talking without narry a 35-mm slide in sight for an entire semester! (Take my projector away, and my career is over). Every day I left the class wanting to tell everyone I knew about the new wonders revealed that day - to the point friends began to edge away as I approached after awhile. The course has changed my thinking forever - and I offer my sincere thanks to Denis for that. I'd like to make it a manditory course for every individual as a requirement to adulthood - and I hope you have 32,000 students in the course the next time you teach it, Denis (go for PBS to tape it for posterity). "I'm Dreaming of a White Christmas" will forever have a different meaning. (Denis would give this review a D at best in his course review writing assignments - which is why I didn't take it for credit). How remarkable is a thorough brain massage - and how rare and wonderful. Sigh!! Thank you, thank you, thank you.

Many exciting and significant events have occured in 1989 which will markedly change the programs and activities of the arboretum in the future. I will delay detailed discussion of these for the most part until the next newsletter - but it is important to go ahead and announce that the arboretum has its first new permanent staff employee since the arboretum began in 1977 with technican Newell Hancock who has been with us from the beginning (thus doubling our staff in a single move!). A new position of Development Officer has been created for the arboretum and Ms. Catherine Knes-Maxwell has been hired to fill this position.

It has long been obvious I cannot handle all the administrative needs of the arboretum, and that although we have created an exceptional and useful plant collection - we have also been particularly lax in the area of raising support monies to handle our activities and programs. During the past 4-7 years, many new arboreta have been established by a variety of institutions across North Carolina - in part through our example and inspiration - and these new gardens have been remarkably successful in raising large amounts of money for major construction, employee hiring, and development. In fact, some N. C. gardens have raised more public support money in just two months than we have in the past 12 years. Our financial operating budget level has remained at an amazingly low level - and it is apparent that unless an endowment fund is created for future staff and operations, the arboretum will not continue to exist as a permanent part of NCSU following my departure (in that long distant day in aeons to come).

Ms. Knes-Maxwell is a 1987 honors ornamentals/landscape graduate of our Department of Horticultural Science program. Following graduation she went to Philadelphia for a year-long education curator internship program with the Morris Arboretum of The University of Pennsylvania. In that position she observed and participated in the operations of a "real" and major, significant public botanical garden. Upon returning to Raleigh (after a year of separation from her husband to do the internship - showing her incredible dedication to her work and career), she "lobbied" for the creation of the position she now occupies. After several months of paperwork by Dr. Monaco through channels all over the University, permission to establish this trial system was finally approved.

In a fairly unique situation, Ms. Knes-Maxwell's position is not funded by the university; and it will be necessary for her fund-raising activities to raise her own salary (the ultimate incentive program!) as well as monies for the permanent endowment and a wide variety of other projects. Many new ideas are being studied at present including a formal Board of Directors for the arboretum; fund-raising campaigns; a new Master plan to update the original 1976 design; new facilities; grant proposals; more activities through the volunteers group, etc. You'll be hearing a great deal about all this in upcoming issues.

We are (i.e., I am) very concerned by the normal development concepts in U. S. gardens today where the most effective fund raising techniques are to pave and build structures to support plaques with very little attention or money devoted to actual plants and collections. Our unique quality has been the devotion to fine uncommon plants as the important feature of The NCSU Arboretum (now the JC Raulston Arboretum) - and our great challenge as we move into this new phase will be to learn how to both successfully raise support funds and to continue this emphasis on fine plants. It admittedly frightens me - as I know of no U. S. garden that has successfully managed it to date. There are many fine plants oriented gardens (e.g. Wave Hill in NYC) - but most have heavy private funding or generous institutional endowment funds to allow freedom to continue that type of work - none of the gardens heavily dependent on public operational support seem to be able to do so. We shall see.

One of the immediate plans is for better and more frequent communication with our members due to the erratic appearance of my newsletters - and you should soon see a new bimonthly news publication edited by Catherine and volunteer Joanne McMenim, relating to events, activities of the volunteer groups, arboretum plans, funding needs, etc. I'll continue the larger, less frequent newsletter of plant news with a continuing goal of three issues of about 100 pages a year. It is a new era for the garden and we are extremely excited by the challenges and possibilities ahead. We look forward to your continued support and hopefully expanded role in the development of The NCSU Arboretum (now the JC Raulston Arboretum). As a first step in that direction - the events announcements have been separated from the newsletter for the first time so you can post them in a visible place as a reminder of events to come - and discard it when all events are past or a new edition is out.

As a new "event" of the arboretum - the volunteers have organized the First Annual NCSU Arboretum (now the JC Raulston Arboretum) Photography Contest to help publicize the arboretum, to allow a sense of challenge and participation for members and the public, and to obtain photos which can be used in future displays, trade shows, gardening exhibitions, etc. Here are the essentials. Theme: "Discover the best kept secret in Raleigh - Spring at the Arboretum"; Deadline - May 31, 1989; Open to amateurs or professionals of any age; Prizes - 1st - Arboretum T-Shirt & a very special plant; 2nd & 3rd - a special plant; Details - photos may be either black & white or color; minimum size is 5" X 7", not more than two photos per person, photos shall be matted, include name, address & phone number on back of photo, photos become property of the arboretum, photos shall be taken at The NCSU Arboretum (now the JC Raulston Arboretum). To enter - send (or deliver in person) photo(s) and \$2.00 entry fee (made out to Friends of the Arboretum) to: Beverly Norwood, NCSU Arboretum (now the JC Raulston Arboretum) Photo Contest, 1212 Hillwood Ct., Raleigh, NC 27615. Questions - Beverly Norwood (919-846-0992).

Much more news to relate next time - over 100 people are mapping and preparing labeling information for metal tag labels throughout the arboretum, new plans are developing for a major rock garden facility, sculpture installation is planned, etc. Keep tuned.

## NOTES FROM THE ROAD

European Study Leave Travels Part II - Continued from Issue #18. March 9 to April 5, 1988 - First England Visit (condensation of 90 original typed pages)

Wednesday - March 9, 1988. St. Malo, France to Portsmouth, England. Get up about 7 and have breakfast from the grocery bag in the room - can't handle another \$10 breakfast on top of this hotel bill - but was nice to have at least one night of semi-luxury for a change. Head to the dock - amazed that for a facility servicing English ports exclusively - no one at the desk of several people speaks English. Find out I can't do the stops in Guernsey and Jersey that I wanted - so buy ticket to Portsmouth for today leaving at 10:45 - about \$200 but will save several days driving (i.e. to the shorter Chalais/Dover ports) and at least that much money anyway with a channel crossing

somewhere. A very limited load at this time of year - the ship can hold 750 people, probably 30 trucks and 150 cars - today there are about 5 trucks, 10 cars and a total of perhaps 30 people on the entire load. Drive on and go up to the ship - no problem with where to sit on this voyage! I settle down and continue to read in the "Sissinghurst" garden mystery novel in the lounge room.

The ship leaves at 10:45 - and is scheduled in at 7:10 in the evening so have some 8+ hours to entertain myself. I finish the book during the morning - OK but not wonderful. Through most of the day we are in sight of land somewhere - whether one of the Channel Islands (where I had hoped to stop to see the flower production areas) or the coast of France, and then later England. A very calm day with barely rippling waves, and a fair amount of sun in the afternoon. Later move to the dining room and settle onto a table and work at the computer - mostly editing and correcting the back days in the log. See a French couple studying Hillier Nursery catalogs and listings and am dying to talk to them - but don't - later as I get off the ship they are in the empty little truck ahead of my car - obviously going to England to pick up a load of nursery stock for their business. In to Portsmouth after dark - a major shipbuilding area and see various ships at different stages of completion - mostly military, but also tankers, etc. The customs process on board goes quickly - down to the car and the fumes from the trucks is awful and stings the eyes. When I get out of the ship and to customs, I encounter a big customs agent that is either antagonistic to me or bored with the small ship load and needing something to do for amusement. Have entered England dozens of times over the last 15 years with never any problems - always just a walk-through. He makes up for all of them - asks many questions about understanding of law, makes me get out of car and they take drug hunting dog all through everything (he protests and runs away across the station and they have a hard time getting him back to resume hunting through the car - does it smell that bad after a month on the road?), stalls and asks many questions - finally cleared and head on - very frustrating and unexpected experience.

Very concerned about my first driving moments in switching to "the other" side of the road - though I've driven in England before and enjoy it - I now have a left hand drive rather than the English type you get when renting there, it is night, I don't know where I am going, or anything about the city - not a good learning adjustment situation. So take it cautious on all movements - wander around town with no luck in finding a room - stop at a gas station and they help me - and finally find the neighborhood with many bed-and-breakfast homes. I get out and ask around at several places - all are about \$18 per person - get a room in a home with the typical English bewildering array of conflicting patterns in decoration (one guide I read gave a high rating to a place based solely on the fact it had a plain single color carpet - no massive floral patterns). Nice to be back where one can read the language and people are friendly and helpful when asked for help (having just left France, Spain and Portugal!) - I'm ready for some of that.

Thursday - March 10, 1988. Portsmouth, England to London. Down to breakfast and is great to finally have an English breakfast after the time in Spain/Portugal - ham, sausage, egg, tomatoes, toast, coffee - and the woman's husband is a professional cook as well so the food is great and filling. Load the car and head to London. Goes fairly well in getting out to the main London road - once on the main road it is divided and make good time. Realize that I am going to be going through Woking where Wisley Gardens is - and can't get that close without stopping - and somehow appropriate for my first day in England.

On to Wisley - I'm excited. At the entrance can see the damage and fallen trees of Battleston Hill that they are still clearing and the burning wood fills the air with smoke - looks like a war zone. (Note from the last issue - in October of 1987 the worst storm in 400 years hit the south coast of England and destroyed an estimated 15 million trees) In and park - check various plans for membership and Chelsea tickets and buy those. Go in and directly to the dining area which is being expanded. Have a great cauliflower soup and a sandwich - and dash off to see the garden. The main garden is mainly cleared of the damage - many missing trees as I do a quick look around the garden. They are still working on clearing in the woods at the bottom of the rock garden - and I am happy to accidentally get to Battleston Hill when all the workers are on break and I can walk through the corded off area and photograph at will - incredible damage.

Back to the retail nursery area - walk and make a list of things I'm interested in there for future purchase. Pretty amazing - did all of Wisley is less than an hour - admittedly just skimming and not much in bloom at this time of year. Interested in the alarm system installed in the new rock garden house - a measure to try to control the persistent problem of visitors stealing the tiny alpine plants - if one crosses an invisible line, alarms ring which can be heard throughout the garden. I understand the need and reasoning perfectly - but certainly makes closeup photography of the small plants impossible. Pop in the gift shop and quickly look at the enormous display of various books (probably the best display of horticultural books anywhere) - although there are many I'd like - just too expensive to handle for now and leave without any. The American dollar value decrease is so noticeable - three years ago when I brought a tour group through here - everyone loaded up with shopping bags full of the "cheap" books - that day is gone!

In car and on way to London - goes well in spite of my dread of attacking it without a good map and navigator - in to the King's Cross area where I've always stayed over the years (cheapest district in London that is still marginally acceptable) and park in the hotel area without any major incidents. Doesn't work this time to stay at Mrs. Ree's (a WONDERFUL lady operating a youth hostel type of place - highly recommended for young backpackers sharing rooms - cheapest in London - 22 Argyle Street) - enjoy seeing her and a brief hello as I pick up mail. Stay at the California Hotel (\$35) one street over which works well and has a color TV to boot. Check through the mail - three letters from mom; a letter from (grad student) Don telling me to reformat my computer letters in future mailings for better handling in the office. I have no idea what he's talking about, how to do it, and am afraid to try. In London just to get mail, but I've decided to stay in London another day to try to get some things settled - money, film, computer disks, etc. The Kings Cross area appears on the verge of rather great change with a two city block area under construction for an enormous new section of the British Library. I've always stayed in the district as the hotels are the cheapest anywhere in the city (many working laborers from rural areas stay as they

come in to work jobs during the week) - and more subway lines meet at the Kings Cross station than anywhere else allowing easy access to any part of London. With projected renovation of the station hotel and the new opening of the library - it will certainly change to a more upscale (or at least higher priced) district in the future.

Friday - March 11, 1988. Kew - London. Good breakfast - I want to go to Kew and run some errands during the day - but first I have to deal with the car in finding a parking place - an impossibility in London. Out to the car and drive around - everything is either paid parking meters with limited time available, permit parking, or people illegally on yellow lines up on curbs - don't know what to do - finally leave the car at an apartment complex some distance from hotel - as far back in winding roads off the main roads as possible and just hope I come back without towing or ticket. Back to hotel and get my things for day - getting on the subway is a complex matter - the major King's Cross fire last fall damaged the transportation network badly here and have to go several blocks away to an entrance and make way back underground - but get on way - and relatively fast to the Kew Gardens station - so familiar to me from so many visits. Then a two block walk to heaven!

Crocus are wonderful in huge drifts of white and purple near the entrance and learn they are the result of a program of Readers Digest of England in celebrating an anniversary - whereby they donated one crocus corm for each subscriber - 1.6 million of them - a stunning display and probably the largest landscape planting ever made (nearly an acre) of this popular "bulb". Go directly to hunt for the plant of greatest interest (wanting scion wood to send back) and concern to me at Kew - *Gymnocladus dioecus* 'Variegata' - and disheartened to discover it was one of over a thousand trees destroyed in the storm and only a hole remains - a little later happy to discover a small one replanted nearby so at least it still exists and is at least "saved" (not knowing of another plant in existence - at that time - later find it at the Hillier Arboretum as well; doubtful if it exists in the U.S. at this time). Wander in the back area ribboned off from the public to see the tree removal work in progress - bad but certainly could have been worse. The Palm House is still "skinned" with restoration work still going on - interesting to see. Circle the garden quickly to scout out damage and see what is in season - only spend about an hour & half to "do" Kew - which is amazing for me. Most enjoy the alpine house as always - many wonderful things in bloom and the light is right for good pictures. Go through the new Princess of Wales conservatory and am underwhelmed - obviously very nice, but ?? - I'm just not a greenhouse plants sort of person & don't understand the attraction. Leave the gardens and back to the room by subway - stop at the station bookstore and buy an excellent Britain road atlas - head back into town by walking - nice stroll and there is always something to see in every block in London. They are restoring the Eros statue at Piccadilly Circus and it is boxed up in scaffolding - and they have eliminated one street so it is no longer out on an island which will make the normal heavy crowds use of the area much more effective. Stroll and look, a meal in Chinatown, and back to the room for computer log and BBC-TV time.

Saturday - March 12, 1988. London to Bath, England. Awake about 7:00 - go downstairs to try the shower for the first time and have to laugh at the arrangement - it is in the hallway with a window directly looking out to the neighbors across the way - also through a glass windowed door into the hotel hallway - bizarre. But a good shower. Breakfast, pack up everything - my room is so tiny that I completely filled the floor and all spaces in unloading the car to prevent thievery. I go out first to walk and check on the car expecting the very worst - towed, ticketed, or trashed - but everything is OK and drive back to the hotel where I load and head out west to Bath. Easy exit from the city to the M4 - it is about an hour and half straight shot to Bath on an uneventful drive. Drive around the city a bit - trying to remember details from stays and visits here in past - finally get a room in the Georgian B&B - location just blocks from center city - and carry everything up.

Head north by car on a 20 minute drive to the Westonbirt Arboretum I have heard of for so long and wanted to visit for so many years. The visitor center is closed and there are no maps around so just wander the afternoon. Started in 1829 - 250 acres, 14,000 labeled trees, and 17 miles of trails - a lot to do. Wonderful old trees of great size and great variety. A bit too cloudy to do much photography and a bit early in the season - am sure I will be back in the future this summer. Highlights are the naturalized snowdrops in the pasture with doubled centers and much green in the petals (unknown cultivar unlike any I've seen - marvelous); a massive weeping cherry - *Prunus X yedoensis* 'Shidare Yoshino' grafted at 10' with a 2' diameter trunk; *Cedrus libani* (55"D, 65'H); *Cornus mas* (15'H, 25'W) in bloom; and my first time to see *Lindera cercidifolia* in bloom,; many others. Surprised the contemporary collections seem to be limited - would like to see an inventory to hunt up specific things. Leave about 4:30 - legs tired and worn out from constant walking since I got there. Not many people out - and all that are there seem to be walking dogs of all kinds. Back to Bath and circle around through the city - go by the Circus, the Royal Crescent, and the botanical garden. Back to the hotel, walk the streets and look in shop windows - nice evening. Back to the room and read, study maps, and work with the computer. Enjoyable day.

Sunday - March 13, 1988. Bath to Wales, England. Decide to make today a "Sunday motoring holiday" and do a round trip to Wales for several things mentioned in the guidebook. Head out - back to the M4 and west toward Wales - over the Severn River suspension bridge - turn off the main road at Newport on A449 heading north. Still a fine divided road; in fact all day I marvel at the excellent roads I see throughout the Wales drive - doesn't seem to jell with the "image" of an impoverished region. Mixed clouds and sunny spots gives magical lighting effects on distant hills and valleys which can be seen for long distances in this terrain. See the perfect pussy willow tree in perfect light and regret not stopping - but take probably too many shots of beautiful distant landscape shots during the day. Turn west on A40 heading toward a goal of the town of Brecon - beautiful scenery. See sheep everywhere and I can only think of them being stuck to the hillsides with Velcro from their distant appearance. Drive south on A470 through the main goal for the day - the Brecon Beacons - highest point in southern Wales - beautiful rounded treeless hills of great fame for hiking and spectacular scenery. Enjoy the drive - want to stop and climb up the nearest slopes - they look easy but undoubtedly are not. Over the crest and wind the way back down and then on to the main city of Cardiff.

Into town and to the McD with post-modern Egyptian decor- quite stunning! It is very windy and cold, with some misting so decide not to go in the Cardiff Castle - enjoy the stone animals carved on the outside fence. Get into the city park and wander there - many outstanding plants but unfortunately none (few) are labeled which limits my understanding with my total lack of taxonomic skills. Perhaps the best ornamental cherry plantings I have seen with several types in bloom but again no names; fine fastigate ginkgos; a beautiful *Illicium* in flower; camellias, magnolias, etc. The perennial borders are bare and reflect well on how much more interesting Ediths' is at The NCSU Arb in comparison during the winter. Back to the car - on the M4 and a short drive back to Bath arriving about 4:30. Wander town a bit, dinner, and settle for evening. Bath is indeed such a fine city - "civilized" to the nth degree.

Monday - March 14, 1988. Bath to Penzance, England. I turn on the morning TV news - a story about the Swaggert incident which the English obviously find fascinating - the woman announcer says he deserves an Oscar for his acting performance in his crying to the congregation. Find a computer shop (needing another disk and mailers) but not open, then to the unique garden center in the center of town built on the roof of the parking garage - see some interesting plants and photo the building with its exotic shape of glass walls and roof. Wind around through town and back to the computer shop - the disks I want are \$8 apiece - ugh! A very foggy and rainy day with low visibility and stays that way most of the day. Spend considerable time hunting Oldfield Nursery in Norton St. Phillip listed in my guide - after trying every road possible out of the picturesque stone village, stop and ask at an inn and learn the garden center closed years ago. Get on the A39 toward Wells; through Glastonbury where I see the old abbey ruins.

Finally on to the M5 main highway heading southwest to the Cornwall district - making good time. I want to photograph a living sign (10' high and 30' long) of blooming daffodils spelling PEACE - but at a big, complex and hectic intersection and in the traffic can't figure how to get to the right area to do so. Go in and out of rain storms - unfortunately the visibility is not good as I cross the scenic Dartmoor Moors. I have a sudden realization after all these trips to England over the years, that the deep cuts so often encountered in smaller country roads are in reality old stone walls that get covered with grass, silt in and with succeeding generations of vegetation become hillocks of their own right - see all stages of the evolution everywhere now that I recognize it. Come over a hill and see a commercial 20 acre field of golden daffodils in bloom and stop and do many photos - (later of course see many more and better - one of the Raulston's inviolate laws of travel is that if you see something wonderful and photograph it - a better example will always be seen later - usually dozens of times; whereas if you don't take the first seen, you'll never see it again) - spectacular and one of the goals I had hoped to see on the trip.

Finally into Penzance about 4:30 but traffic is horrible in the city so decide to just head on through and go to Land's End while in the car - trees thin out and country becomes more open as I approach the cape. Finally to Land's End (the southwestern most point in England) and very disappointed it is private property and can't go out to the tip due to new souvenir stand and shops construction for next summer. Stop at Sennan Cove - beautiful bay - crashing waves, high misty wind - winter is always the best time for the beach.

Back to Penzance, get a B&B room, settle in, and have dinner. Note the damage around town from the record January 1987 freeze which so damaged this southwest peninsula of England long noted as being the mildest area of the country with collections of plants which cannot be grown elsewhere in the country. The *Cordyline terminalis* trees which previously served as "symbolic palms" on postcards promoting this area as a "sub-tropical" vacation spot are all frozen to the ground and beginning to sprout back from the bases. Work through the guidebooks trying to figure out the situation on which gardens are open and within distance - learning that most gardens are closed until Easter which is going to eliminate many things I wanted to do on this first circuit of England - and those that are open have hour and day schedules which make fast, effective touring difficult. A good low-key transit day.

Tuesday - March 15, 1988. Penzance, England Area. Good sleep with an electric radiator by the bed keeping the room cozy. Down for breakfast - not a classic English breakfast - but American corn flakes add new variety. Confronted at the front porch by heavy rain and I'm amazed. Looked out the window earlier and assumed that the day would be overcast but OK. There is a heavy gale wind blowing, it's dark and the rain is pouring down - what to do? I am continually surprised that days are not sunny - though I intellectually know that English winters are dark and rainy. My plans are to go to Glendurgan Garden and so head that way - but it is raining and blowing so hard when I get there that there is no way one could get through the garden like this.

Decide to delay a bit and go to The Lizard (the southernmost point in England) instead - dramatic cliffs on both sides and violent waves with much foam crashing everywhere. Get out to look and the wind is so strong it is rocking the car. Stop at Kynance Cove - a National Trust nature preserve beach property - get out in a stone wall enclosed parking lot - walk a ways down the path - but quickly get to a point the wind is so strong I can no longer manage standing up in it even by holding onto rails - and the rain drops are actually painful on my face - the strongest wind I've ever encountered. But a spectacular view and great experience - get back to car flushed with excitement and very happy - all through this I've been saying "this is just abnormal weather and it will surely shortly clear"! (I've never been very good with reality).

Head to Glendurgan garden - on map it is back on minor roads and I'm amazed at just how minor they are. Very narrow - usually only one thin lane between walls of stone and grass - twisting and winding with no visibility ahead or to the sides - an amazing drive. Gradually the clouds begin to thin and it gets brighter and brighter and am excited that I can actually photograph now - but get to the garden and discover that it is only open Mon, Wed, Fri - so all this and can't go in. I'm discouraged but decide to just come back tomorrow - realizing in reality the distance from Penzance is less than Raleigh to Chapel Hill and I've made many trips over that route for less significant things.

Decide to go on north and try to see the next garden on my list - Trelissick - roads are better and faster and just a few minutes to get there - happy to see it is open - beautiful bright sun as I drive in. It is a fine estate, and if one is into camellias and rhododendrons it has interest - but not really a great garden in my book. It covers 375 acres and was originally planted between 1844 and 1913 with later additions. Obvious losses from the recent 1987 record cold winter in the tree ferns and tender rhododendrons area; there are some fine magnolias but flowers were lashed by the recent wind and rain and most petals are stripped off. The most memorable plant is a huge *Cryptomeria japonica* (8'D, 70'H) in a center lawn with "nipples" on the underside of several branches. This phenomenon of "aerial stalagmite-like roots" (something like an inverted bald cypress "knee") is known in very old Ginko trees (which can be seen in a tree in Charleston, SC - and which is a characteristic selected for in the cultivar 'Chi-Chi') - but I have never heard of it in other gymnosperms and am fascinated by this discovery.

I am astonished at the power of the wind which has come up - roaring in the trees above me and I understand now more fully why the English place such emphasis on windbreaks in their writing. Out to the front and see the ha-ha, climb through it and walk across the front lawn where a large fallen tree is still being removed, many others already gone, and large numbers of new trees planted and fenced - all repairs to the October storm damage. A spectacular view down a slope to a bay and the Atlantic in the distance. Back to the National Trust dining room in a converted farm building with high ceiling and beams - fine room details - lights matching the fireplace lines, etc. No question - The National Trust does things "right" - any visitor to England should join and support this fine group. I get tomato soup, pastry dessert and multiple cups of coffee which hit the spot on this cold, windy day with fireplace crackling by my table as I have the place to myself. A number of fine espaliers of several plants on the outside walls of the restaurant - including a very fine *Pilostegia viburnoides* some 11' tall.

Out about 2:00 - back through Penzance and to Trengwainton Garden - again have missed out as it is closed - but open tomorrow. On the entrance drive in there is an old grove of the deciduous Himalayan magnolias in full bloom - and protected enough that the bloom quality is not bad. So park and climb the fence to look at them. One group of *M. campbelli* flowers are perfect on a lower limb - all stages of openness and well arranged - take several photos. Back into town, stop at fish and chips shop to get some takeout - an amazing amount of fish for a very low price. Settle into reading - I go through the National Trust info picked up today with the new membership and see varying places of interest.

Wednesday - March 16, 1988. Penzance to Exeter, England. The hosts "knock me up" to get me down to breakfast - very fussy nervous people at this place on every detail - which table to sit at, exact time to eat, etc. Head out to Trengwainton Garden - timing is excellent and get there just as it opens at 11:00. The estate was begun in 1814, the house built in 1867 and plantings were made throughout this period to the present. The oldest plant is a *Rhododendron falconeri* planted in 1880, and the most noted collections are from Kingdon Ward's 1927-28 expeditions to Assam and Upper Burma which the owners supported.

The day has cleared and have good light - intermittent between clouds and sun to give any light desired with just a little wait. Again - much damage from the '87 freeze - huge rhododendrons two feet in diameter sawed off at 8' and sprouting back from stumps, bamboo dead, etc. Entrance drive with the stream plantings of perennials, ferns, dwarf shrubs, etc. is nice (a 1950 development); then the house with a fine view to the water over a ha-ha; then a mind-blowing *Magnolia campbelli* (40'H, 60'W) in a protected site in full bloom with the flowers at peak size and display - many others in the garden (one even larger at 60'H, 80'W) but most shredded - a long-time life dream of mine to see one so good - and take far too many photos but can't stop. Behind it is a *M. delavayi* (20'H, 25'W) - the "other" evergreen *Magnolia* species from China - which I still yearn to see in flower somewhere, sometime (but never do on this entire trip). Then back down to the walled gardens (from 1820) which are also excellent - five "chambers" in the first segment - many wonderful plants such as *Magnolia cylindrica* (25'H, 20'W) in full pristine white bloom; and many exotic Chilean, New Zealand, and Australian conifers such as a *Athrotaxis selagnoides* (10"D, 20'T) - and signs of much damage last year - the gardener says it went down to 20F. Then a second courtyard with walls and south sloping beds with many fine plants again. A marked contrast to yesterday in horticultural interest here - wonderful.

Easy drive through Penzance, Helston and then back to Glendurgan Garden. Again when I arrive the wind is violent and very loud in the trees above - but in the deep valley woodland area there is very little air movement. Although the garden has been planted from the 1820's and there are certainly many fine plants - the garden is of much less interest - a spectacular view from the house down the valley to the water in the distance with large specimens showing well. But after walking in the garden - as I leave I feel somewhat "cheated" - with this magnificent site and protected climate they have really done very little but scatter a few interesting plants at random about the valley over the last hundred and fifty years - it is nice, but shows no imagination or garden design skill. Many of the plants again damaged - most severely hit are the *Drimys*. There is a peculiar maze of *Prunus laurocerasus* (1833) on a hillside - other plants prevent a good view of it from any direction - sheared about 4' in height. Several good *Magnolia campbelli* in bloom.

Head to Exeter - as I drive along a little side road - go by Burncoose Nursery - one I wrote to and ordered plants from! I thought they were further east near Southampton. So turn around and go back and park. Pay to go through the garden - hardly worth it but interesting to see how they grow some things - and many large specimen plants - fine magnolias, rhododendrons, and camellias. I am particularly impressed by *Camellia X williamsii* 'Donation' (6'W, 12'H) which I see everywhere in various gardens - an absolutely spectacular flowering cultivar (Hilliers Manual states "perhaps the most beautiful *Camellia* raised this century"). (Strangely when I returned, I asked a local NC camellia authority if it were available and used in the states. He sort of yawned and said it was, but he was obviously not very impressed with it? A puzzle - and I need to try it myself).

Browse the sales yards of the nursery - not at all what I expected from looking at the catalog - many fine plants (of low quality) but little I can use - and can't remember what I ordered from them - and not in a mind set to approach them about my letter. End up selecting only about 8 plants - very disappointed the double wisteria I most wanted from here is not available. Again head toward Exeter - late now about 4:30 - but in the town by 6:30 just before dark.

Thursday - March 17, 1988. Exeter to Weymouth, England. Awake early with thin curtains and heavy commuter traffic outside. Down for breakfast - second only to that the first morning in Portsmouth - excellent. The garden at Killerton opens at 11:00 according to the book - after working some and passing time, decide to go on to Killerton and just wait in the parking lot there - get there to find out it is only the house hours that begin at 11 - the garden is open all day. Frustrating as I could have started early and gotten more done on a better schedule of the day.

The house is somewhat simple and modest - if an English country house can ever have such a description - very appealing. The estate encompasses some 6,000 acres with 15 acres of intense plantings near the house. My favorite layout of the English estate gardens I have seen so far on this trip - with a formal wall defining the barrier of the grounds from the pasture - a fine perennial border area - and the arboretum on the hill behind the house with superb large plants including many from the expeditions of John Veitch (who founded the famous nursery) in the 1770's. So much to see - finest plants? - perhaps the *Arbutus menziesii* (1'D, 40'H); the *Pinus radiata* (3'D, 75'H) with incredible coarse ridged bark; the largest cork oak, *Quercus suber* I've seen in the British Isles (3'D, 60'H); *Osmanthus delavayi* in white, fragrant bloom (which should be a good possibility in Raleigh); so many others.

On cross country to Montacute House near Yeovil. Again only the garden is open - the house April 1 like all of them. A wonderful 1588 house of great beauty and balance - and formal gardens surrounding it with bizarre undulating yew hedges, a formal courtyard and entrance driveway with columnar yews, an Orangery, and an archery lawn with magnificent *Cedrus atlantica* 'Glauca' trees in it. I'm also very interested in a huge Monterey cypress, *Cupressus macrocarpa* - supposedly one of the largest in the country at over 100'; and stubbed and sheared (strange - why?) California coastal redwoods - and amazed by the beautiful turfgrass being parked on in the car park.

Head on to the third garden of the day. The weather started off beautiful - has gradually clouded all day and now starts to mist. Clapton Court Gardens is a private 10 acre gardener's garden on individual scale with interesting plant sales center attached. Unfortunately, the mist changes to heavy rain while there and discourages a good visit - would be much better later in the season also as the herbaceous materials improve. The "biggest ash in England" (*Fraxinus excelsior* - 220 years old and 23' in circumference)

is interesting and there are indeed many fine plants. I see a plant of pampas grass which has been burned back to the base rather than by pruning - had always wondered if that would be possible to avoid fighting those leaf razors which are so vicious when one works with them. Look through the nursery - a number of things I would like - but prices are high and they don't take Mastercard so decide to skip it for the moment.

It is now darkening and raining harder - decide to head to Weymouth and spend the night - with two other important goals of a room with TV to watch LA Law and a Chinese dinner. Only about 25 miles away - an hour drive in rural England. Find a B&B - the owners know where a good Chinese restaurant is nearby - and have a great LA Law featuring Benny tonight. Sometimes things do work out fine in life!

Friday - March 18, 1988. Weymouth area, England. Getting light earlier and earlier it seems - a very fine breakfast with a pot of coffee and morning paper - sit in the bay window overlooking the beach and watch joggers and people walking dogs in the misty morning - sigh. Head up the coast to the Abbotsbury Sub-Tropical Gardens. It is hard to live up to the feeling of the name today - 35F, dark, raining and cold. Go in with doubts - likely the only visitor of the day I suspect. A strange place which I gradually warm to in feeling about it - hard to figure who the real audience is? - not really a garden; not quite an arboretum; not a dazzling showplace. Perhaps a thing for people who "sort-of-like-plants" to do on holiday at the beach - to wander and look at things a bit different than in London, etc.? Mostly the base of the usual conifers - Monterey cypress and pines; rhododendron, camellias, magnolias, etc. - but beyond that there is upon closer look, a fairly good range of out-of-the-ordinary as well - best in the walk put in recently with recent Chinese discoveries of new *Ilex* and *Rhododendron* species. A couple of *Magnolia campbelli* in bloom - one the tallest I've seen; *Corylopsis sinensis* (18'H); *Laurus nobilis* "Aurea" (20'H);. Would like to see the garden on a warm and sunny day in May for likely better impressions - but happy I did come. My favorite memory of a small conservatory (containing the national collection of *Salvia*) in an open lawn circled by a ring of old cannons pointed at it as though it were under siege ("give up or we'll blast your windows out!").

From there back to Clapton Court - continuing rainy mist which lasts all day and keeps the camera wet and marginal - notes with ink running. Pick out 6 plants to purchase - ring the buzzer to get the guy back who was there yesterday. We talk a bit - and have my usual experience with British "garden people" - they love to "talk plants" but have no interest in listening to anyone else (an American in particular has no plant information to ever offer of any value) - only their own personal experience is of any merit or interest; also depreciating of even any other English garden or firm - he sort of shreds any other nursery or gardens in the area I ask about. But enjoy the talk and learn many things.

Today the drivers seem extra aggressive and wild and have more close calls on the narrow roads than the entire time in England so far - flat run off the road twice - seemingly deliberate. Then to East Lambrook Manor Garden - am doubtful about it being worth the drive - the garden of Margery Fish that she wrote about in several books. Leave camera in the car because of the rain - but good enough that I go

back to get it after doing the garden and go through it again for photos. Best *Stachyurus praecox* I've seen (15'H&W) in peak bloom ; wonderful *Helleborus* in every shade of color, spring bulbs, wonderful array of vines and espaliers on walls of the buildings - need to come back at another season also (sadly, never did make it - one of my major regrets).

Saturday - March 19, 1988. Weymouth to Brighton, England. A box of plants is slowly growing in volume in the car. No strong fixed goals for the day except to head east to Brighton. A cloudy and misty day all day - intermittent misting and run into fog in various areas. Hunt for Furzey Gardens in The New Forest - about to wonder if it has closed when I see signs and follow them on in. Just opening and as at every place since arriving in England - of course I'm the only one there on a cold, dark and drizzly day - at first I am sure that I've made a disastrous mistake in stopping as it seems small and nothing of that great interest - but with exploring it opens up and find more and more things - and decide it was a really good stop after all. A private garden of 8 acres developed since the 1920's. Accompanied through the garden by "Crazy Cat" - a big black cat that behaves exactly like a dog - very friendly, follows me, likes to be petted and played with, romps around. Highlights of the plants are a fine row of several *Corylopsis pauciflora* (10'H X 35'W) in full bloom; one of the big-leaved Himalayan tree rhododendrons with yellow bloom (unnamed); *Eucryphia X nymansensis* (50'H); one of the best British collections of tree heathers and heaths; an interesting sheared hedge of juvenile *Fagus sylvatica* which retains the bronze leaves; some fine *Hamamelis*; - and the old 1560 thatched cottage that was almost destroyed before recent restoration is also attractive.

Head on and stop for lunch at one of the highway Happy Eater chain places with the awful symbol of a red faced guy putting a finger in his mouth in the classic Joan Rivers routine of "gagging-to-throw-up" - perhaps symbolic of the food after all. As I'm zooming along - see a sign for the town of Fishbourne and I've always wanted to see the Roman mosaics there - so when I see the sign for the museum I get off - close to the road and as it later turns out - the main highway is actually built over half of the site preventing further excavations. Enjoy the museum greatly - no one does documentation and explanation in museums as well as the English - a remarkable record of the two hundred year period of Roman occupation (75AD on) and how things changed during that time. The mosaic floors which remain are wonderful and seeing the reconstruction of the garden outside will be useful to me in teaching in the future. Also enjoy the reconstruction of a typical Roman living room scene of the time - fun to see the exact same black and white tile floor going into my new home at this very moment was quite fashionable 2,000 years ago!

Head on toward Brighton - see more and more tree damage everywhere as I go further east; also the population density builds continuously - harbors and seaport towns - more traffic and less pleasant than the uncrowded Cornwall areas I've been enjoying. In to Brighton and though it is late winter and offseason - the town is packed with weekend crowds in from London. Enormous tree damage in the city parks - crashing through walls, houses, etc. - this was the most direct hit of the storm on the coast. Circle all over town hunting a B&B - traffic and crowds are horrendous - surprised to find prices even at this season higher than in London. Finally take a room with amazing room decoration - pseudo French white and gold gilt furniture with red and gold striped wallpaper, red carpet and sofa, swirl plaster ceiling, a light fixture with tassels, and a written text on "parchment" - ack, ack.

Sunday - March 20, 1988. Brighton to Wakehurst Garden and return. Head to Wakehurst Garden - the only one in easy range that is open at this time of year. Easy drive north - takes about an hour - and go in and out of severe tree damage areas. Get to the garden about 10 minutes before the gate opens - park and go in. Often called "Kew in the country" - the Wakehurst Estate was planted with superb collections of trees near the turn of the century by Gerald Loder. It was bequeathed to the National Trust in 1963 - and became a part of Kew Gardens in 1965 to utilize the advantage of higher rainfall, milder winters and better soils than the London location of Kew itself for expanded plant collections.

I am shocked by the change from previous visits as I top the hill and see the house - now "bare" with the big trees gone and a view to a distant hill which was once not visible. Walk back through cordoned-off areas to photograph still existing damage - after a while it really gets to me and settles over me in a depression - just horrible the amount of loss in this one storm. The rhododendron understory of the valley is now the overstory. Spend two hours photographing and making notes. They estimate it will take 4 or 5 years to just remove all the fallen trees alone - let alone repair all the damage - and of course generations to regrow the quality of trees which existed there. Interesting to see the care taken to not compact the lawn areas as heavy machinery is moved in to cut and remove the destroyed trees - massive lumber "pads" are laid on the sod to distribute the weight and prevent cutting in - a technique I've never seen in the U.S. even on construction sites. Had debated going on over to do Bedgebury Pinetum today also - but not in a mood to endure another destroyed collection in one day. So head back toward Brighton with the intention of settling in the hotel for the afternoon and working on writing and office things. An awful evening with the computer completes the depression of the day.

Monday - March 21, 1988. Withdean Park; Nymans to London. A program of National Reference Collections has been developed in England to establish authorities and specific gardens to specialize in various genera for preservation, study, and public availability. I see in a guide book where the national collection of *Syringa* (lilacs) is at Withdean Park in Brighton so hunt it up to see the plants as I note lilacs blooming through the country at this time. Finally find the 35 acre site developed in 1960 and today containing (supposedly) some 350 species and cultivars of lilacs. Turns out to be fairly disappointing - the site is a difficult one for plants - a thin layer of soil over limestone rock with high pH causing considerable chlorosis on many species and cultivars (but not on the popular *S. vulgaris* types) - and most disappointing - not a single label anywhere in the entire planting. Very surprising to me to find such conditions in England if it is indeed still a national reference collection.

On to Nymans - one of the finest collections of rare specimen trees in England - and articles have been saying it was the hardest hit of all gardens by the storm (80% of the major trees are gone). Like most gardens it does not open until Easter - but decide to drive by and look from the outside as it is right on the road to London. Nymans was begun in 1889 with major conifer plantings in the 1890's - and

additions of a wide array of other fine plants were made up to the present on the 30 acre National Trust property. I find a driveway open back by the house and decide to try to walk in and have a look. Encounter a gardener and explain I would just like a brief look at things and he lets me go through on a fast walk. After 4 months of constant effort, they have not begun to remove all the trees which have fallen everywhere and it makes the stomach ache just to look at it - I cannot imagine the feelings of those employees that have tended the garden, perhaps for decades, to see the sudden destruction and loss. My personal candidate for most beautiful tree in the world is now horizontal on the ground - an enormous *Cedrus atlantica*. Of some 35 world-record size specimens previously in the garden - only 4 remain. The meadow which was lined around the edge with incredible "dwarf" conifers, now faces scattered remnants of the planting with views through to distant hills. So very sad. The one bright spot is that the noted quartet of elaborate *Taxus* topiary plants in the perennial border area were somehow amazingly missed by the trees falling around them everywhere - and of course there are still hundreds of wonderful plants existing if one forgets what has been lost. Continue to London - settle back into the Kings Cross neighborhood, and finish the day in London.

Tuesday, March 22, 1988 . Wisley; Savill Gardens. Time to do some serious plant hunting for the arboretum collections before heading back to the continent soon. Take my usual long round-about way of getting to Wisley from Kings Cross - westway to the "Orbital" (English for Beltway) - probably 2-3 times the distance but much shorter in time than cutting through central London with its congested traffic. Usually takes an hour to hour and a half to drive depending on time of day for commuters. The new major highway beside Wisley was resented and opposed by them when built - but the easy access has enormously swollen their annual visitor numbers (and profits from admissions and gift/nursery sales). In and again a relatively brief visit - still early for many flowering items. The tree clearing work is nearly completed near the rock garden - but it is obvious that Battleston Hill will be closed to visitors for a long time for repairs.

Spend most of the time in the retail nursery hunting for items for the arboretum - a number of things of interest - but with the high prices plus the low U.S. dollar value - it is difficult to accept what things cost. Very much want *Aucuba japonica* 'Rozanne' - a spectacular new cultivar (from Holland?) with large orange-red fruit; but it is nearly \$25 for a small quart plant; most *Pieris* cultivars run \$15-25 for quarts (and they have 35 cultivars for sale); and uncommon grafted trees run \$40-70 for relatively small items. Difficult decisions - so just make lists of possibilities to try to find alternative sources for in my hunting over the next week before making my shipment.

Leave and to Savill Gardens - a magnificent garden created by Eric Savill from the 1930's to the present - and often considered the great English garden of this period. Both a wonderful design with water features and vistas, rock gardens, perennial borders, a stunning grove of *Fagus sylvatica* with beautiful moss beds under the trees; and an outstanding collection of exceptionally fine plants. Although there were certainly trees lost in the garden - thankfully the structure remains intact. At this visit - the most impressive display comes from nearly the smallest plants at the garden. Savill is noted for its massing of various plants for effect display (I'll never forget the huge drifts of *Trillium grandiflorum* I saw several years ago - and the full bed of the rare double flowered cultivar as well). At this time - tens of thousands of the tiny bulb species, *Narcissus cyclaminus* and *bulbocodium* - are in full bloom making sheets of color across the lawn areas where they are naturalized. In addition the collections of *Pieris* cultivars are at their peak - with 'Grayswood', 'Scarlett O'Hara', 'Little Heath' and 'Pink Delight' examples of European cultivars not often seen in the U.S.

Savill is also just completing a new gift shop and plant sales shop to compliment their already beautiful restaurant and terrace which overlooks the garden. The Savill nursery is perhaps one of the best places in England to obtain fine plants as they propagate many things from the collections and offer an outstanding selection of plants at very reasonable prices. At this point the shopping begins in earnest! Finally back to London for the evening.

Wednesday, March 23, 1988. Cambridge Botanical Garden; Bressingham Nursery. Head out northeast of London on a circuit to two of my favorite places - first to Cambridge Botanical Garden - possibly the finest university botanic garden in England. Takes about an hour and a half to get there - most of that just getting out of the London tangle. The garden was developed in 1831 on a 40 acre site and continues to add new features and displays to the garden today - with one of the newest a stunning "winter garden" featuring plants and flowers which are showy during the winter months - and on this sunny day it is certainly close to its peak of perfection.

I always enjoy my visits to this garden and discover new things on each stop. Wander the rock garden area, the conifer collections, the Chronological bed (plants arranged in the time sequence they were introduced to English gardens) - and discover near the front gate a plant of a rare Chinese genera I had long hunted - *Sinowilsonia henryi* (later in the year acquiring one in N.C. from We-Du Nursery! Hunt the world and find it at home).

Then on northwest with a 40 minute drive to Bressingham Nursery - the production and sales facility of the noted Alan and Adrian Bloom family - famed for their work with perennials, heathers, and conifers. Since my last visit - a large retail garden center had opened which was as interesting to see for its retail techniques as for the wide array of plants they sold. Model gardens show varying plants grouped together for ideas for homeowners; and information of all kinds was featured throughout the nursery to help customers in selection for their gardens. My main interest is in the fine array of dwarf conifers offered - but unfortunately many of the conifer genera (*Abies*, *Picea*, and *Juniperus* among others) are banned entirely from U.S. import thus limiting the possibilities. But I am excited to discover a new golden cultivar of Leyland cypress which has just been introduced by Bressingham - *Cupressocyparis leylandii* 'Golconda' - and get one for our trials in hopes the golden color may be more stable in our heat than 'Castlewellan' has been. Back to London about the rush hour time - but luckily going in against the tide and fairly bearable.

Thursday, March 24, 1988. RHS Spring Show; London Home Show. Most serious gardeners know of the Chelsea Flower Show held annually by the Royal Horticultural Society (to be covered in newsletter #21 later this year) - but fewer are aware that smaller shows are held through the year as well for special groups of plants or special seasons. Today to the RHS Spring Show - held in the society halls at

St. Vincent Square in London. Doubly excited as it will not only be a chance to see the displays - but also arranged months earlier to meet good friend and horticulturist, Mr. Kendall Gambrill, from Seattle at the show at noon - someone to finally talk to! To the show early to have time to browse the exhibits - like the Chelsea Show it is primarily a commercial trade show with nurserymen exhibiting plants from their catalogs and taking orders. Wonderful displays of minor spring flowering bulbs - but again - woodies are harder to find, perhaps because fewer customers are looking for that category compared to perennials, etc. for smaller home gardens.

Kendall shows up at noon as promised - great to see a known person again after two months on the road. But he's zooming (drove 14 European countries in the previous 2 days and has every nursery in England and Scotland to do in the next 3 on his planned schedule) and we have barely an hour to gobble a sandwich in a nearby pub and exchange a few pleasantries before he's on the road and gone. Leaves me spinning in dust - so much for my hopes of a day or two to talk and visit some gardens together! Wow - and I thought I moved on the road! Oh well.

Have been seeing ads everywhere for the massive London Home Show - so this seems a good time to hit it before weekend crowds. An interesting afternoon looking at European products and design concepts. All the hardware and appliances for kitchens and bathrooms seem so small in size compared to those familiar in the U. S.. Perhaps most fascinated by a mock-Tudor style trailer house of plastic. As at all such shows - my feet and back ache after several hours of exhibits and hard floors - so beat it back to the room for the night.

Friday, March 25, 1988. Mailing Day. Have an appointment made three weeks ago to meet an agricultural inspection officer at Wisley today to inspect my plants and prepare phytosanitary documents for shipment of the various plants I've collected over the last month back to the states. Clear the roofline of the hotel of my "arboretum" and carry everything down to the car - the usual highway circuit and I'm at Wisley when the doors open. First need is to go through the nursery and purchase the items still on my list after the recent circuit of other nurseries - decisions, decisions - so many plants - so little money and the Mastercard takes a heavy blow. Then prepare the plants for inspection and shipment - knock all of them out the pots and wash the roots free of soil - and on larger plants prune them back to save shipping space and cost. Long, slow job and is after 2:00PM by the time I'm finished - and time for the inspector to show up. Wait and wait and wait - doesn't show and no one at the garden center knows anything about him - and the man who made the arrangements is out of town for the day.

Finally panic as the afternoon goes on - go ahead and box the plants up for shipment to the quarantine office and put my permits in the box with the plants and a note of explanation of what has happened and a plea \_for help and understanding. Finally get box sealed and prepared - and ship them off by air express (at great cost) with projected delivery date of Monday in NYC. Long, difficult and frustrating day as I feel it so important to get these plants back safely to have some tangible, physical "product" to "justify" my time and efforts on the study leave when I return. Back to London and collapse.

(Postscript - not a happy ending. The U.S. Postal Service somehow "lost" the shipment and it arrived at the quarantine station in NYC 8 weeks later - a box of dried out twigs and mush. So, the month of hunting and the thousand dollars spent on 120 choice items for our collections and introduction to our nursery industry all went down the trashcan - except for 3 plants which amazingly survived even all that and were shipped on to NCSU. Aucuba 'Rozanne' is alive and well in the greenhouse with 40 offspring today - and there will be enough to distribute to nurserymen this summer. Months later when I got the news about the loss while still in Europe, I was so depressed it was very difficult to even attempt collecting for another try at introductions.)

Saturday, March 26, 1988. Hillier Arboretum. A day trip southwest (about an hour and a half from London) to visit perhaps my favorite plant collection in existence. The Hillier Arboretum is a young plant collection in Ampfield founded in 1953 by Harold Hillier - renowned plantsman owner of the noted nursery. In 1977 Mr. Hillier gave the arboretum to the Hampshire County Council to become a public garden and in 1979 an English guide book stated the 100 acre garden "contains the largest collection of hardy temperate zone trees and shrubs in the world with an estimated 15,000 species and varieties". There was great concern among plantsmen and the public garden world as to what would happen to the garden once transferred to county control - and most predicted serious decline with lack of funds, government commitment, etc.

After a wonderful day of visiting the incomparable collection, I am happy to be able to report that the garden has never been in better shape - and in fact they have recently added significant acreage to the original site (perhaps another 75 acres?), and that they are planting new accessions furiously, and that the labeling and maintenance have never been better. What a treat! - and how much we do need such a similar collection in the U.S (or a dozen or two for the many varied climates we have) - sadly woody plant horticulture does not generate visitors and public funds, and is emphatically out-of-fashion in our American gardens today. So many highlights - perhaps my greatest excitement in finding the two trees of the variegated Kentucky coffeetree mentioned earlier. There are only 6 or 7, 000 other things I would also like from Hilliers for our collections (as a start) - amazing place. (We do now have *Cercis siliquastrum* 'Bodnant' in The NCSU Arboretum (now the JC Raulston Arboretum) as a result of Steve's miracle grafting of buds from a 3" twig sent back in an envelope by mail).

Sunday, March 27, 1988. Syon Park, Crowther of Syon Lodge, Hampton Court. Decide to stay in closer today after the recent distant drives to the country in all directions. A short drive to Syon Park - which many visitors to Kew have seen - but few have visited. It is located directly across the river from Kew - but there is no "tube" access or easy public transportation which makes autos almost a necessity to get to it. Syon Park is a 60 acre estate designed by Capability Brown in 1770 with a magnificent 1820 conservatory by Fowler. In recent years it has become a public garden with more and more efforts to attract visitors to support its upkeep - and the original garden interest is about gone with an ever-increasing assemblage of "attractions" such as an art gallery, automobile museum,

gift shop, butterfly house, garden center, etc. in the complex. Lots of people out on a spring Sunday - but few seem to pay much attention to the historic garden anymore and I had the courtyard in front of the conservatory all to myself with 2 hundred-year old Magnolia denudata trees in full magnificent bloom.

Nearby is an interesting commercial business dealing in architectural pieces and fragments for garden use - Crowther of Syon Lodge (ads can be seen in Architectural Digest, etc.). The owner was very kind to give time to let me see the display areas and go through the indoor showrooms. This is the kind of place where you can pick up a 1750 wrought iron gate 15' high and 25' wide for the entrance drive to your estate; or a 20' long solid marble table for your patio; or a medieval lead tank for a water feature - if you get the idea. Wonderful things and they are happy to ship to the states.

By this time it is early afternoon and on to Hampton Court to see the famed daffodil displays. The grounds of the Royal Palace have a wide variety of types of gardens to enjoy. Today - the daffodils are king in the garden - nearly 3 acres of them massed in the lawns beside the palace - and in perfect full bloom - absolutely stunning! The second most memorable feature of the garden today is the incredible destruction in the formal French allees of trees in front of the palace dating from the 17th century. In London, damage from the October storm was scattered and light with the distance in from the coast. But apparently the open fields, huge trees, and ancient age all contributed to the Hampton Court planting receiving the full blow of the storm. It seems at least 70% of the trees in the radiating allees are down or damaged to the point they need removal - a frightening loss.

Each time I visit Hampton Court, I realize I have again forgotten what is probably the most unique form of excellence in the gardens - which is the endless array of wall plantings - probably the best anywhere. There are hundreds of yards of high brick walls with numerous courtyards - and the horticulturists have assembled every conceivable plant which can be grown as espaliered specimens or with natural climbing tendencies. An excellent demonstration area and one can learn so much from a tour of the walls alone - today the deciduous huge old figs and the flowering espaliered forsythia and quinces perhaps most striking.

Monday/Wednesday, March 28-30, 1988. (The computer ate these days somehow and my mind can't reconstruct them so long after returning - sorry)

Thursday, March 31, 1988. London Car repairs; Bedgebury Pinetum. Time for the car servicing I have worked weeks to schedule. Up and to the Renault dealership and the usual long waiting period while work is done - but passing the time working with the portable computer on my lap in the waiting room. Many people are fascinated by what my computer - but only children are uninhibited enough to come up to look at the machine and ask about it. Finally get the car back and that job is taken care of for another 5,000 miles. Back to the hotel and load in everything yet again - wanting to find a place to store a ton or so of materials I lug in and out daily and never use. Learn the commercial storage places and those which used to operate at the train stations no longer do (bomb threats) - or charge small fortunes for doing so - a problem.

Do my usual circle zoom on the westway/Orbital, around the city and to the southeast with a goal of a night in the vicinity of Sissinghurst in order to be the first public visitor in 1988. There early, so go to see Bedgebury Pinetum nearby - the 100 acre national collection of conifers established by Kew Gardens over 50 years ago and today managed by the Forestry Commission. Mixed storm damage on the grounds - the south side where the storm approached is nearly leveled for the first several hundred yards - but further in the collection the damage is less and less. Always an exciting and inspiring place to visit - on this trip discover that above the area of the dwarf conifer collection - at the Caretakers cottage - that there is a small nursery which sells plants propagated from the collection - mostly conifers but a selection of others as well.

While at a tourist information office in Tunbridge Wells, I discover that there is a B&B right on the Sissinghurst property adjacent to the house - so call and to my surprise I find rooms are available for the night and reserve one. Gather some food from town, drive out to Sissinghurst and meet the delightful people who own the B&B, and settle in for the night.

Friday, April 1, 1988. Sissinghurst, Knole, and Hever Castle. Up for an early breakfast and over to the gate at Sissinghurst to stake out my position long before scheduled to open. Not really necessary (who else would be so crazy and fanatical about such a silly thing?) - and the first other visitors show up about 20 minutes before the gate is to open. After claiming my "honor" as the first visitor, I get to dash in and get photos of (people)empty courtyards which is increasingly a rarity these days as the garden grows and grows in public popularity. Nice to see it at an entirely different season than previous visits - the daffodil meadow at back is at peak and wonderful; as is the bulb walk at the side. The only apparent loss from the storm is the famous silver-leafed pear, *Pyrus salicifolia* 'Pendula' which served as a back-drop to the statue in the White Garden - and a small plant is in place as eventual replacement. Another change for visitors is construction in progress to create a new restaurant and gift shop in the barn which will be a helpful addition.

As the holiday crowds begin to build in the garden, I decide to head on to other locations. Continue the Vita theme for the day and head north to Knole - her childhood home (which she would have inherited as an only child had she been male instead of female). Again a National Trust property - a gigantic palace of a residence - one of the grandest of English country houses with generations of accumulations in the interior. Again, severe tree losses in the parks around the house - but there was little if anything of formal garden development at the house itself to see. Only someone from such a grand background could have the feeling that the wonderful dwelling at Sissinghurst was modest and simple!

On for another visit to Hever Castle nearby - by this time in afternoon - the sun is out and the Easter weekend crowds are horrendous - acres of cars and people picnicing and swarming the garden and house. The castle dates from the 13th century and is noted as the place where Anne Boleyn was born; and the 4 acre Italianesque gardens are a addition in this century by William Waldorf Astor. Many fine things I'm sure - but the packed crowds are difficult to take after being spoiled by isolated visitations for the last two months. Wonderful daffodil displays, a magnificent maze and topiary chess set, and espaliered camellias in the walled gardens are highlights (along with an hour wait in line to enter the house - ugh!). Enough of the tourist routine - so back to the Sissinghurst B&B to relax, read and write.

Saturday, April 2, 1988. The hosts at the B&B have been so gracious I decide to risk imposing myself on them and ask if I could pay to store items with them for the next two months while I tour continental Europe - and they graciously agree. Stash an enormous suitcase and bag up in the attic and can now travel much lighter - such a relief! A morning drive to Sheffield Park, a National Trust property noted for its outstanding collection of mature trees in a Capability Brown setting (1775) of five lakes and superbly created vistas. The garden contains one of the finest collections of woody plants in the British Isles (with most planted in the 1909-34 period) on ca. 100 acres. Again, a heavily-damaged garden from the storm - a display at the visitor's center indicates that a quarter million trees were lost at various National Trust gardens; and that 2,000 trees were lost at Sheffield Park alone. The primary vistas around the upper lake are mostly cleared but many areas of the park are still roped off from visitors; and fallen trees and piles of logs are everywhere. Luckily, the famous view across the upper lake to the house is relatively undisturbed with a huge *Pinus radiata* and an ancient oak still framing and providing a glorious view. I am very impressed with large *Nyssa sylvatica* throughout the grounds which must give wonderful fall color; huge old specimens of conifers - *Abies procera* (30"D, 80'T), *Pinus radiata* (5'D, 75'T), *Pinus breweriana* (50'T), *Cupressus macrocarpa* 'Donard Gold' (35'T), *Tsuga canadensis* 'Pendula' (25'T), *Juniperus recurva* 'Coxii' (25'T), *Athrotaxus laxifolia* (15"D, 25'T); and many other notable plants. Massive replanting has started with young plants of rare species everywhere. Luckily enough background of fine specimens exists to carry the garden into the future.

On to Christopher Lloyd's noted garden at Great Dixter. An earlier visit was in June several years ago - and it is good to see it at a different season when the famous meadow plantings of spring bulbs are at their peak - daffodils in informal random drifts through the fruit tree orchard, with fritillaria, snowdrops, crocus, erythronium, anemone, etc. adding a rich texture to the planting. The noted yew topiary hedges and figures are freshly sheared in crisp detail and are a perfect compliment to the famous 1450 Tudor house. My peak memory here will be of a clump of huge snowdrops (*Galanthus*) found in an isolated corner bed - still in bloom with foliage a good 12" in height and an inch wide - amazing, and no idea what species/cultivar it is - but something to hunt and acquire for the future. I was able to acquire another plant I had long hunted for - and the first time to see it - a white-flowered, white-variegated foliage periwinkle (*Vinca minor* 'Alba Variegata') which will be great for our White Garden. Very much regret I am so shy in meeting people - greatly enjoyed Mr. Lloyd's visit to The NCSU Arboretum (now the JC Raulston Arboretum) several years ago and shared plants with him - yet when I see him working in the garden at a distance I cannot bring myself to go up for a visit - meeting people and making phone calls are so enormously difficult for me (contrary to everyone's "image"). Oh well.

Can see with the Easter holiday at hand - every garden and location will be jammed beyond belief - so head back into London - with the road bumper to bumper in cars and barely moving on the way out to Brighton - whereas the road into London is totally deserted - as is the center of the city on a holiday Saturday afternoon - the most pleasant and wonderful driving I've ever experienced in this complex and difficult traffic city.

Easter Sunday, April 3, 1988. England is astounded - a four day period of warmth and sunshine for the holiday period - and everyone is outside in the parks to enjoy it. Have a quiet day in London - writing in the morning; walking in the parks with the color of magnolias, camellias, forsythia (yes, homeowners in England also clip them into round balls like Americans do - their horticultural excellence reputation is not universal), and daffodils everywhere. A three hour attack on the Victoria and Albert Museum which finally conquers me with its 7 miles of galleries (I only make it through part of the main floor). Of all the innumerable wonders - I was most taken by an incredibly complex, yet paper thin and delicate wine cup of Shah Jahan, carved from perfect white jade in 1067 AD.

Monday, April 4, 1988. A day on the computer not even leaving the hotel - I need so many more of them - so far behind on all I hoped to do and accomplish - two months in Europe as of today and it seems like a flash in time - yet very much missing contact with the states and wondering what is happening in the arboretum, at the university, and with friends? This disconnect and feeling of total isolation from my familiar world is the only bad part of this travel - I'm starving for news from home and none is available.

Tuesday, April 5, 1988. Today finally leaving England to head back to the continent for six weeks and the last entry of the trip for this issue of the newsletter. Most of the day in logistical details - laundry, buying maps and guidebooks, mailing packages and letters - all simple but quite time consuming (with the added joy of a city maintenance truck backing into my parked car and smashing a light). A drive from London to the east coast port of Harwich to catch a ferry to Holland - only 65 miles but a typical two and a half hours drive with the first hour just to get 4 miles through central London's convoluted traffic. At Harwich find that I have a wait of 6 hours for the night ship - and in looking at a map discover that Beth Chatto's famous garden/nursery is located only about 6 miles from Harwich - and in 15 minutes I am strolling the garden. (An interesting observation of the interest in gardens in England is that her garden is shown on a commercial highway road atlas - not just a garden guide. How often does that occur on U.S. road maps?)

I remember my first "tour" of her garden - in Raleigh through a slide lecture she gave there several years ago. Her garden is much larger than I expected (covering perhaps an acre and a half?) - and although early for it's peak impact (since it is built heavily around herbaceous materials) it is still exciting with the early spring color. There are many modern hybrid daffodils in bloom throughout the

garden, but large masses of the species, *Narcissus minor*, provide perhaps the most color and a new awareness of the appeal of this small, 5-7" tall, yellow daffodil. The peak memory will be of a large clump of a superb deep purple/black flowered *Helleborus orientalis* in front of a 5' wide drift of the "black liriopse", *Ophiopogon planiscapus 'Nigricans'*, and further fronted by a drift of purple flowered *Erythronium* - absolutely stunning color combination. Other things of interest include: the finest clump of *Anemone pulsatilla* I've ever seen - a foot in diameter with dozens of purple flowers above the fuzzy foliage; an unusual (and unnamed - but later identified as *Hermodactylus tuberosus*) species bulbous "iris" in the raised gravel scree bed with green standards and nearly black falls; a white flowered "Skunk cabbage" (*Lysichiton camtschaticense*) in the bog; and a drift of *Fritillaria imperialis* in full flower.

Again a regret at my reluctance to try to meet Mrs. Chatto - enjoyed her company and various conversations when we were on the N.Y. Botanical Garden lecture circuit together several years ago - a fantastic woman I greatly admire - but I could fight dragons easier than bringing myself to knock on her door to say hello. The retail sales nursery is much larger than expected and enjoy working my way through all the offerings - but unfortunately this point on the trip is not a good time to pick up any plants for shipment. That will wait until a future date - but a collection of the different color forms of *Helleborus*, the five *Agapanthus* cultivars, and numerous other treasures - is at some point a must.

Now on the road again - and ahead awaits the Holland bulb plantings of Keukenhof, Parc Floral in Paris, amazing magnolias in northern Italy, wildflowers in Greece and Turkey, and the International Shrub trials in Germany - with who knows what unexpected excitement (and problems). Stay tuned - hopefully the next issue in May.

Horticultural visitors to England interested in hunting specific plants will find *The Plant Finder* by Chris Phillip and Tony Lord an essential guide. It is a 480 page book listing over 27,000 different hardy garden plants (house plants, annuals, fruit and vegetable plants are not included), each coded to their source availability from 300 nurseries. The book is redone with new editions each year, and contains addresses, telephone numbers, opening times, and mail order information (whether they ship or not - or export or not) of all the nurseries. It is a remarkable listing of plants to use just as a reference for knowing what exists if nothing else (teamed with *Hilliers Manual*). It also lists the National Reference Collection holders; and significant reference literature on various genera (e.g. - for information on *Hamamelidaceae* one should go to *The Plantsman*, Vol 4, part 1, 1982). It is published by Headmain Ltd for the Hardy Plant Society; and is distributed by: Moorland Publishing Co., Ltd, Moor Farm Road, Airfield Estate, Ashbourne, Derbyshire. DE6 1HD, England. The price is a bargain at 7.95 pounds (about \$15) - my only regrets on this book is that I discovered it two days before leaving the country to return to the U.S. in June! Weeping and moaning!

If interested in obtaining plants overseas for return to the U.S. - be aware that import permits are necessary to bring in living plants (seed are allowed in without permits); all soil is banned and all plants must be barerooted; many genera are banned completely even with permits; and that plants will need inspecting at entry ports (which I find normally takes some hours of time at the airport - making scheduling of connecting flights difficult). After all that, one may still lose many items. With the availability of plants in the U.S. with hunting, the high price of plants in England, and the likelihood of losing plants brought back - an average gardener probably should not try to gather things to return - unless searching specific new English cultivars or very rare materials and willing to risk losing them. Realistically very little is available there that cannot be found in the U.S. with hunting. Two months of my intense hunting turned up very few items (admittedly hunting woody plants) that could be brought into the country that were not already available here. If you've grown and exhausted all the tens of thousands of U. S. plants available on our arboretum sources list, and want to go to great cost and risk - only then consider writing to the U. S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Hyattsville, MD 20782 for information on applying for import permits and the books of regulations on what is allowed in.

#### SOME NOTED GARDEN CENTERS AND NURSERIES OF ENGLAND

##### Cumbria

Dalemain Garden - Dacre, Penrith, Cumbria CA110HB - Phone: Pooley Bridge (085 36)450. Herbaceous plants, bedding plants, old fashioned roses.

Hayes Garden World - Lake District Nurseries, Ambleside, Cumbria LA220DW - Phone:(0966) 33434. Excellent wide ranging garden center.

##### East Anglia

The Beth Chatto Garden - Elmstead Market, Colchester, Essex CO77DB - Phone:Wivenhoe (0206 22)2007. One of largest collections of unusual hardy plants in the country.

Bypass Nurseries - Ipswich Road, Colchester, Essex - Phone:(0206)865500. Wide ranging garden center.

Clippesby Garden Center and Nurseries - Chippenby, near Great Yarmouth, Norfolk NR29 3BJ - Phone: Fleggburgh (049 377)367. Display greenhouse of tender materials.

##### East Midlands

Baytree Nurseries Garden Center - High Road, Weston, near Spalding, Lincolnshire PE12 6JU - Phone: Holbeach (0406)370242. Bulbs, plants, trees, shrubs, indoor plant house, display gardens.

Harrington Hall Garden Center - Harrington Hall, Spilsby, Lincolnshire PE23 4NH - Phone (0790)52281. Unusual shrubs and plants raised in the garden.

Springfields Gardens - Springfields, Spalding, Lincolnshire PE126ET - Phone: (0775)4843. 25 acre gardens; glasshouse with hundreds of varieties of tulips in spring; shrubs and trees.

#### Heart of England

Bernhard's Rugby Garden and Leisure Center - Bilton Road, Rugby, Warwickshire CV227DT - Phone:(0788)811500. The Midland's No. 1 garden center.

Lechlade Garden and Fuchsia Center - Fairford Road, Lechlade, Gloucestershire GL73DP - Phone: Faringdon (0367)52372. Indoor fuchsia garden with over 800 varieties.

Stone House Cottage Nursery - Stone, near Kidderminster, Worcestershire DY104BP - Phone:(0562)69902. Plantsman's nursery unusual wall shrubs, climbers, and herbaceous plants.

Treasures of Tenbury LTD - Burford House Gardens, Tenbury Wells, Worcestershire WR158HQ - Phone:(0584)810777. Holders of National Clematis Collection - large range of clematis for sale; also rare and unusual herbaceous plants, shrubs and trees.

#### London

Chelsea Gardener - 125 Sydney Street, Kings Road, Chelsea, London SW3 - Phone: 01 352 5656. The source of imaginative plants and gardens.

Clifton Nurseries - Clifton Villas, London W92PH - Phone: 01 289 6851. Wide range of interior and exterior plants, garden antiques and statuary, furniture, vases and all garden services.

Squire's Garden Centers - Sixth Cross Road, Twickenham, Middlesex TW2 5PA - Phone: 01 977 9241. One of West London's largest garden centers.

#### Northumbria

Gateshead Metropolitan Borough Council Central Nursery - Whickham Highway, Lobley Hill, Gateshead, Tyne & Wear NE11 - Phone: (091)4873311/4600331. Show house, rose garden, herb garden, tree and shrub areas.

Rookhope Nurseries - Rookhope, near Stanhope, Upper Weardale, Co. Durham DL132 2DD - Phone:(0388) 517272. Small but attractive nursery growing wide range of hardy plants.

#### Northwest

Caldwell & Sons Ltd. - Nurseries & Garden Center, Chelford Road, Knutsford, Cheshire WA16 8LX - Phone:(0565) 4281. Tree & shrub nursery dating back to 1780; an international garden center.

Grosvenor Garden Leisure - Wrexham Road, Belgrave, Chester, Cheshire CH4 9EB - Phone:(0244)672856. Display gardens, garden buildings, landscaping, machinery.

Stapeley Water Gardens - London Road, Stapeley, Nantwich, Cheshire CW5 7LH - Phone: Crewe (0270)623868). Water garden specialists with largest selection anywhere in Europe.

Woodford Park Garden Centre - Chester Road, Woodford, Cheshire SK7 1QS - Phone: 061 4394955. 10 acre landscaped site, display gardens, large range of plants.

#### South

Deacon's Nursery - Moor View, Godshell, Isle of Wight PO38 3HW - Phone:(0983)840750. Fruit tree specialists (over 120 apple varieties alone).

Exbury Gardens Plant Centre - Exbury, near Southampton, Hampshire SO4 1AZ - Phone: Fawley (0703) 891203. Rhododendrons, azaleas, camellias, and pieris.

#### Southeast

Savill Garden Centre - Wick Lane, Englefield Green, Egham, Surrey TW20 0UU - Phone:(0784)35544. Wide range of choice and rare plants - propagated from Savill Gardens. (JCR note - excellent range of plants at very good prices - I bought a lot of plants here)

West Dean Gardens - Apple House Nursery, West Dean, near Chichester, West Sussex PO18 0RB Phone: Singleton (024 363) 301. Extensive range of trees, shrubs, climbers, old roses.

#### Thames and Chilterns

Lathbury Park Herb Garden Lathbury Park, Newport Pagnell, Buckinghamshire MK16 8LD - Phone:(0908)610316/612373. Herbs.

Waterperry Gardens - Waterperry Horticultural Centre, near Wheatly, Oxon OX9 1JZ - Phone: Ickford (084 47) 226. Gardens, herbaceous and alpine nursery, fruits, glasshouses.

#### West Country

Boxwood Garden Centre - Boxwood Estate, Calne, Wiltshire SN11 0LZ Phone:(0249)816828. Rare and unusual plants, aromatics, old roses, herbaceous, trees and shrubs.

Brackenwood Nursery and Garden Centre - 131 Nore Road, Portishead, near Bristol, Avon BS20 8DU - Phone:(0272)843484. Rare and unusual plants, trees and shrubs.

Burnloose and South Down Nurseries - Gwennap, Redruth, Cornwall, TR16 6BJ - Phone: Stithians (0209)861112. 30 acre garden; widest range of plants in southwest.

Clapton Courte Gardens and Plant Centre - Crewkerne, Somerset TA18 8PT - Phone: (0460) 73220. Unusual plants, shrubs and trees.

The Margery Fish Nursery - East Lambrook Manor, South Petherton, Somerset TA13 5HL - Phone:(0460)40328. Rare and unusual plants propagated from Margery Fish's garden.

Otter Nurseries Garden Centre - Gosford Road, Ottery St. Mary, Devon EX11 1LZ - Phone:(040 481) 3341. One of largest garden centers in Devon.

Trewithen Nurseries - Grampound Road, near Truro, Cornwall TR22 4DD - Phone: St. Austell (0726) 882764. Camellias, rhododendrons, magnolias, azaleas, pieris - wide range of ornamental shrubs and trees.

Triscombe Nurseries and Garden Centre - Bagborough, Taunton, Somerset TA4 3HG - Phone: Crowcombe (098 48) 267. Wide selection of unusual plants.

#### Yorkshire and Humberside

Castle Howard Plant Centre - The Gardens, Castle Howard, York YO6 7BY - Phone: Coneysthorpe (065 384) 333. Herbaceous, alpines, old roses, dwarf conifers and heathers, trees and shrubs.

## BOOK NEWS:

The folder is thick with months of accumulations of clippings, announcements, articles, etc. - and I am going to make a sincere effort to get everything cleaned out for your information. The notices will be brief but enough to follow up on I think. So many books, so little time (which is after all so much better than the alternative of too few books and far too much time?). With the length of this section - we'll not have room for the plant sources section this time - and the next issue will focus more on the new plant sources.

Gardening is completely entwined with environmental conditions affecting the behavior of our green growing things. NCSU has just published a new book called Weather and Climate in North Carolina which "provides a general overview of the various aspects of weather and climate in the state. Maps show general variations of temperature, precipitation, growing season length, and other important climatic features. Tables provide information for specific localities. A special section demonstrates the application of weather and climate information to agriculture." The authors are D. L. Epperson, G. L. Johnson, J. M. Davis, and P. J. Robinson. 48 pages and \$2.50 - available from: Department of Agricultural Communications, NCSU, Box 7603, Raleigh, NC 27695-7603. Make checks payable to NCSU.

The March 1989 issue of The State - Down Home in North Carolina (Vol. 56 (10):26) has an excellent article entitled "Glorious Gardens of North Carolina". The article includes a section on The NCSU Arboretum (now the JC Raulston Arboretum) accompanied by a beautiful photograph of the new water garden. It can be found on newstands or the single issue can be obtained for \$2 from State Magazine Printing, Shaw Publishing Inc., 1900 Rexford Rd., Suite 550, Charlotte, NC 28211 (or annual subscriptions for \$15.45).

March almost seems "publicity month" for The NCSU Arboretum (now the JC Raulston Arboretum) with another article "J. C. Raulston Determined to Diversify our Gardens" in the March issue of Carolina Gardener. This new publication originating in Greensboro is now in its fourth issue (8 issues per year) and covers all aspects of gardening in the Carolinas. It is 32 pages of an 8X11" format magazine with color photos, informative articles, sources of plants and products, etc. To subscribe, send \$12 (\$1.50 for a single copy) to Carolina Gardener, P. O. Box 13269, Greensboro, NC 27415 (919-757-0336). (Another article is coming in the June or July issue of Southern Living magazine).

The new book Shrubs by Roger Phillips and Martyn Rix is a companion to the Trees of North America and Europe book which I have reviewed before and include on my list of recommended books. Like the earlier book it is a compilation of photographs, with greatly increased scope (this time 1900 shrubs are presented vs. 500 trees). The photographs are marvelous in quality and detail - quickly giving so much visual information in seeing the character and identity of given items. It comes from England (of course) and is published here by Random House - and will readily be available in all the mass market bookstore channels at a bargain price of \$19.95 (one cent per plant photograph). In addition to the photos and brief description/information given about each plant - at the back of the

book is a most useful section giving nurseries carrying unusual shrubs (including a U.S. list quite similar to the one we distribute - and a few new ones I need to check out), a bibliography of useful references, and a listing of gardens in various countries where one can see good shrub collections. It was an unexpected pleasure to see The NCSU Arboretum (now the JC Raulston Arboretum) in this list for the U.S. - I wouldn't have expected the English to know about us! The only flaw I noted on a quick look-through was the wrong plant shown for our spectacular native North Carolina *Stewartia malacodendron* (on page 182 - which should have purple stamens) - and the American publisher could have done the U.S. audience a valuable service by including a chart on the inside somewhere showing centigrade to fahrenheit conversions as each plant is listed to its hardiness in this manner. (0C=32F; -5C=23F; -10C=14F; -15C=5F; -20C=-4F; and -25C=-13F for your addition to your copy when you buy it). Be reminded for the hundredth time that the same plants in England and North Carolina can have vastly different hardiness due to our warmer summers - either to ripen wood (where they will be hardier in N.C.) or to destroy carbohydrate reserves (where they will be hardier in England) - depending on the plant. An absolute MUST for every plantsmans garden shelf.

Every gardener spends much of their indoor time hunting for sources of equipment, information, plants, etc. - and far too much of my life revolves around that search instead of hands-on pleasures with the greenie-growies out in the arboretum. I earlier reviewed Barbara Barton's excellent book: *Gardening By Mail: A Source Book*. Since that time she has written several times telling about new changes and additions incorporated in her new edition of the book: *Gardening By Mail 2: A Source Book*. This is not the usual, 2 new pages and changes in 3 lines "second edition" - there are significant additions making the already outstanding book even more so. Since she keeps a continual upgrading of materials available in her computer as she receives them - it has been easy for her to constantly update the information and one of her more unusual services is that one can subscribe to her Cumulative Updates which are available about every 3-4 month for \$1 each The update #5 alone was some 6 pages in length with several hundred new or changed information additions, books, nurseries, etc. My little newsletter "books and plant sources" attempts pale in comparison and I highly recommend her book. Unlike some similar publications which major corporate publishers have pushed out since her original book appeared - Ms. Barton does all the research and publishes the book herself - and responds to readers on an individual basis. She deserves support for such efforts. Available for \$18.50 (a bargain) post paid from: Tusker Press, P. O. Box 1338, Sebastopol, CA 95473 (707-829-9189).

Another such book (which I again have not seen) is *The Home Gardener's Source Book* by Judy Huber. She is a former extension home economist, now married to a farmer-rancher in South Dakota and raising 4 children and gardening. She promises a 350 page directory in a ring binder for easy updating with seed and plant sources; tool, chemical and equipment companies; sources of information; extension assistance; organizations; and places to visit. Price is \$24.95 + \$3 shipping - from Prairie Family Publishers, Judy Huber, HCR Box 78, Bowdle, SD 57428 (605-285-6337).

Everyone is talking about and reading a gentle book by Robert Fulgham (Villard Books, 1988 - at every book dealer) entitled *All I Really Need To Know I Learned In Kindergarten*. A brief excerpt which was reprinted in the local paper goes: "Most of what I really need to know about how to live, and what to do and how to be, I learned in kindergarten. Wisdom was not at the top of the graduate school mountain, but there in the sandbox at nursery school. These are the things I learned: Share everything. Play fair. Don't hit people. Put things back where you found them. Clean up your own mess. Don't take things that aren't yours. Say your're sorry when you hurt somebody. Wash your hands before you eat. Warm cookies and cold milk are good for you. Live a balanced life. Learn some and think some and draw and paint and sing and dance and play and work some every day." ( and it goes on and on with many wonderful things).

A story in our local newspaper last summer from The Associated Press indicates just how far we have come from such rules in modern life with a headline: "Woman Sues 2 Over Tomato Plants". "Charlotte - A Charlotte woman who says two people destroyed her six tomato plants has filed suit in Mecklenburg District Court. JDT said two women "maliciously, wantonly and intentionally mutilated and destroyed" the plants in a flower bed between her condominium and an adjoining unit. She is seeking more than \$500,000 in damages."

A brochure and order form on my desk promises a most useful book. *The Complete Manual of Perennial Ground Covers* by David MacKenzie provides use information for 425 species and varieties of groundcovers - including: family, genus, species and common names; native habitat & hardiness zone; size and planting rate; landscape value; morphological characteristics of foliage, stem, inflorescence and fruit; culture; special features of interest; most common pests and diseases; maintenance; and propagation. It is an 8 X 11" book of 324 pages with 224 illustrations. Order for \$45 from: Prentice Hall, Book Distribution Cener, Route 59 at Brookhill Drive, West Nyack, NY 10995-9901. A 15 day return period if not satisfied. With the great interest in groundcovers as a part of low maintenance landscaping, this book will potentially have wide audiences within both home garden and professional work.

For those interested in or involved with public gardens - the January 1989 issue of the professional magazine *Landscape Architecture* covers the general theme of Botanic Gardens. This publication, which is generally not seen on public news stands, is published by the American Society of Landscape Architects and is read mostly by professionals in the landscape architectural field - and for the most part has focused on narrow technical areas of interest only to those specialists. But the editorial focus has recently changed with markedly different appearance in the types and content of articles - and to my eyes and interests in a much improved direction. This particular issue quotes and talks about many of my friends (both people and institutions) in the public garden field - and will be an issue talked about for many years as significant philosophical questions are raised, and in some cases strong criticism leveled at various institutions (some very unjustly to my eyes). Love it or hate it - no doubt it will be much discussed. One may subscribe (10 issues per year) for \$34 a year from: *Landscape Architecture*, 4401 Connecticut Avenue NW, Washington, DC 20008-2302 (202-686-2752); or this single issue (January 1989) may be obtained for \$5.

I was much amused by a notice for Plant Amnesty - a new organization "dedicated to ending the abuse and mutilation of trees and shrubs by bad pruning". \$10 dues include a bimonthly newsletter - 906 N.W. 87th St., Seattle, WA 98117.

We have long recommended Greer Gardens, 1280 Goodpasture Island Road, Eugene, OR 97401-1794 (503-686-8266) as an excellent source of a wide array of uncommon plants (current catalog has 6 cultivars of *Prunus mume* and 8 different *Cercis* as examples) - but I was also much impressed by their large listing of books in the recent catalog. They also carry a lengthy series of video tapes on various horticultural topics - and 8 different tapes showing some of the most noted gardens in England (Bodnant, Wakehurst, Savill, etc.) - 30 minute tapes for \$34.95.

Yet another entry, *The Gardener's Eye*, in the individual published journal field arrived on my desk with a letter from the publisher, Mr. Harvey Childs. As computers and desktop publishing systems improve and spread we will unquestionably see more and more of these kinds of very personalized journals - such as *The Avant Gardener*, *HortIdeas*, *Notes from Elizabeth*, etc. mentioned here in the past. Mr. Childs indicates his shared belief that "more information needs to be disseminated about some of these less used, but not necessarily harder-to-grow, plant specimens. I am simply a person intensely interested in the world of horticulture and taught by experience. In this journal, I try to convince my readers to try new plants, be they annuals, perennials, trees or shrubs." In reading it, I was strongly struck by a quote which reinforces my frequent illustration (JCR - "40 plants in any given area make up 90%+ of the landscape") of the Pareto Principle ("the significant few") - "The world's inhabitants rely on only 20 species of plants to supply over 90% of its food needs . . . (from) over 10,000 species known to have been tried for food purposes. Over half all people's caloric intake is supplied by just three grasses - wheat, rice and corn." *The Gardener's Eye* (ISSN 1041-2875) is published monthly by The Hurricane Publishing Company, P. O. Box 22382, Denver, CO 80222 - \$18/year (303-744-3821). The issue I received was a 11 X 16" single sheet, single fold item of 4 pages.

A useful organization that many towns might seriously consider investigating is The American Community Gardening Association (ACGA). It is a coalition of over 250 community gardening and open space professionals joined together to share information and resources. Formed in 1979, the organization has developed a number of techniques to achieve its mission: Greening cities and building communities nationwide through community gardening. They produce a quarterly publication called *Journal of Community Gardening* focusing on members needs for networking, promotion and new ideas. Memberships are \$15 per year for individuals; \$50 for organizations - payable to Barb Donnette, Treasurer, ACGA, City of Seattle, P-Patch, Seattle, WA 98104. Sadly I slipped in getting information in the last newsletter as they had their national convention in Asheville, NC last fall.

An intriguing article for those that worship at the throne of Queen *Rhododendron* - an entirely different view of a flower most gardeners here battle to enjoy - is presented in "The Day of the *Rhododendron*" (great title for a mad sci-fi movie) in *New Scientist*, 7 July 1988, p.50-55. *Rhododendron ponticum* was introduced to England from Turkey over 200 years ago - and is becoming perhaps the most invasive and damaging of weeds in the country today. It is overrunning the national parks, crowding out native plants and animals, poisoning livestock - and seems virtually uncontrollable. While in England last year, I saw a TV program on the problem and watched shots of "rhodobashers" - groups of people who volunteer to go out and destroy the menace. Unfortunately it is not a laughing matter as it poses a greater problem to the British Isles than our kudzu, Johnson grass, honeysuckle, and leyland cypress combined do in the Southeastern U.S. They estimate it would cost at least \$60 million dollars to remove present infestations in one national park alone. An interesting paradox for those who would leap on this with an attack on "the problems of introduced exotic species" - is that studies show the species originally came from the British Isles - was forced south to Turkey during the glacial age - where it was left as a remnant population (much like the *Taxus floridana*, *Rhododendron chapmannii*, *Torreya taxifolia*, *Magnolia ashei*, etc. in Florida today) - and the reason it does so well in England today is that is where it originally evolved and acquired its basic adaptations - thus, essentially a reintroduced "native". Plants and man are constantly amazing! One flower can produce 5,000 seeds, there are no competitor pest problems, and most of the lay public love the plants - hard battles to fight.

In my list of basic reference books on woody plants, I indicated that *Landscape Plants of the Southeast* by Gordon Halfacre and Anne Rogers Shawcroft is perhaps the book most commonly used in the Southeast by landscape architects - covering the common materials available in the nursery industry here. A new 5th edition has just been published which contains 100 more color photos and descriptions of 1,100 varieties of over 400 plants. A very fine book, clearly laid out with easy-to-use format; it would fit the needs 95% of home gardeners and landscape/nursery industry professionals for information on use of trees and shrubs in the Southeast. 6 X 9" hardcover book, 448 pages, 400 full color photos - Available for \$45.00 (including postage and handling - but NC residents must add 5% sales tax) from Sparks Press, P. B. Box 26747, Raleigh, NC 27611 (919-834-8283).

Two others of my "baker's dozen of most recommended books" have also just been updated and expanded. I raved about the excellence of Gary L. Hightshoe's book on native trees - and was excited when he expanded the new edition to include a wider array of plants with shrubs and vines. Unfortunately in the process he switched from the Iowa State University Press to a major corporate "quality" publisher and the price of the book has skyrocketed to a level which will probably limit the audience this outstanding book should command. *Native Trees, Shrubs, and Vines for Urban and Rural America* contains 832 pages, 285 halftones, 700 line drawings, and 95 color plates - and is available for \$79.95 plus shipping from: Van Nostrand Reinhold, Mail Order Dept., P. O. Box 668, Florence, KY 41042-9979. Wonderful layout in the book with tables of cultural requirements, ecological requirements, plant characteristics, etc. - a most desirable reference. Other books from the same source which relate to the urban landscape include: *Weeds of the United States and Their Control* by Harri Lorenzi and Larry S. Jeffery (\$74.95); *Westcott's Plant Disease Handbook* by Kenneth Horst (\$43.95); and *Landscape Management: Planting and Maintenance of Trees, Shrubs, and Turf Grasses* by James R. Feucht and Jack D. Butler (\$29.95).

The other classic book (which I've previously described as "the best value in horticultural publishing in America") with a new edition for the first time in 10 years is the Sunset Western Garden Book. Many changes and additions with thousands of plants descriptions, detailed climatic maps with plant adaptations, cultural information - I use it daily and could not live without it. The new edition is \$22.90 plus shipping from: Sunset Books, P. O. Box 10630, Des Moines, IA 50336-0630 (1-800-678-2680).

Interested in Eucalyptus? A quarterly newsletter from the Eucalyptus Improvement Association provides information on Eucalyptus culture, research, etc. - \$10 a year from: EIA, c/o Jim Gunther, P. O. Box 1963, Diamond Springs, CA 95619

Interested in Cycads? Robert Read and Marie Solt have published the Bibliography of the Living Cycads. Soft cover, 199 pages, \$10 - from Lyon Arboretum, 3860 Manoa road, Honolulu, Hawaii 96822.

Interested in ornamental grasses (isn't everyone in America today? - The Germans had a great idea, huh?)?

The Brooklyn Botanical Garden always publishes outstanding reference materials with their Plants & Gardens series. Vol. 44 (3) - Fall 1988 issue is Ornamental Grasses - a most useful 104 page guide to this diverse group of plants. It came as a part of the membership subscription (\$20 per year) with the Brooklyn Botanical Garden (1000 Washington Ave., Brooklyn, NY 11225) - and I am sure it is available as a single issue purchase item upon request. Highly recommended.

State extension publications are one of the most useful types of information for gardeners as the information is usually the most current available and designed for very specific audiences as compared to commercial books which must be oriented to the widest market possible. An excellent manual listing many such books and pamphlets is available from: Publications, University of California, Agriculture and Natural Resources, 6701 San Pablo Avenue, Oakland, CA 94608-1239. Although many are quite specific for California - others such as "Deer-resistant plants", "Small plastic greenhouses", "Fertilizing woody plants", etc. have wide use potential.

Tons of technical agricultural books with international scope are available from: Agribookstore, Winrock International, 1611 North Kent Street, Arlington, VA 22209 (703-525-9455). An interesting series of books on "Multipurpose Tree Germplasm" are available (Global Needs and Problems of Collection, Storage, and Distribution of Multipurpose Tree Germplasm, Multipurpose Tree and Shrub Seed Directory, and Multipurpose Tree Germplasm) The seed directory looks particularly interesting - "for over 500 multipurpose tree species, lists of seed suppliers, prices, germination rates are available. Also suppliers of inoculants and cultures for nitrogen-fixing trees; information on the biophysical adaptability, reproduction, management, and uses of various species" - \$25.60.

In the international field - there was a note in Audubon Magazine about a type of terrorist attack in Israel recently. Israel has worked aggressively since the 1920s to plant and re-establish the forests which have been destroyed over the last 5,000 years of human occupation which turned the once forested land into desert (as throughout the Middle East). Members of INTIFADA - an anti-Israel group vowed to destroy and burn all of Israel's resources in a "day of burning" June 22. On that day over one million trees covering 50,000 acres were destroyed by deliberate arson activities. Decades of work was lost. Sad, sad, sad - our world craziness continues.

Another book has appeared on my desk just as the newsletter is heading to the printer - too late to read it before writing about it - but knowing the author well, and a quick scan of its contents and selective reading of various passages - leaves no doubt I want to strongly encourage our readers to purchase Sandra Ladendorf's new book, Successful Southern Gardening: A Practical Guide for Year-Round Beauty. Sandra is nationally known for her outstanding professional writing for a wide variety of publications; and for her gardening skill and active work with the American Rock Garden Society (next National President). With years of fighting the anguish of the southern climate (in Chapel Hill) - she writes from personal experience in how to successfully garden in the zone 7-8 region. In 294 pages, the book covers the entire spectrum of Southern Gardening from soils and pests - through the complete range of plants from bulbs to azaleas to nut trees - to recommendations for nursery sources, plant societies, and other readings. It will be published the first day of spring, March 20 - and will certainly be in all N. C. bookstores or available from: University of North Carolina Press, P. O. Box 2288, Chapel Hill, NC 27515-2288. \$12.95 in paperback or \$24.95 clothbound plus \$1.50 postage.

Another new "Southern" guide is Trees of The Southeastern United States by Wilbur and Marion Duncan which "includes 80 pages of color (336 total), 253 distribution maps, 57 helpful line drawings, and identification keys for all of the 306 different species to be found in the region". \$21.20 (including shipping) from The University of Georgia Press, Athens, GA 30602.

A companion volume to the above listing would be Native Shrubs and Woody Vines of the Southeast - Landscape Uses and Identification by Leonard Foote and Samuel Jones, Jr.. "A comprehensive guide to all the native shrubs and woody vines of the southeastern U. S., complete with landscaping recommendations. . . .excellent keys, complete plant descriptions, and fine color photographs aid in identifying approximately 550 species." 260 pages, 220 color photos, 6X9" format, hardbound - \$32.95 from: Timber Press, Inc., 9999 SW Wilshire, Portland, OR 97225.

A wide variety of gardening books (50 titles with over a million volumes sold last year) is available from Garden Way Publishing, Storey Publishing, Pownal, VT 05261 (802-823-5811) - write or ask for a catalog.

Most gardeners are aware of Organic Gardening magazine - but may not be aware that the publisher also produces a wide variety of books on gardening, health, lifestyles, etc. A wonderful catalog of hundreds of books is available from: Rodale Press, 33 East Minor Street, Emmaus, PA 18098 (1-800-527-8200). Among many fascinating titles - my eye caught Claw Your Way to the Top - How to Become the Head of a Major Corporation in Roughly a Week - an obvious tongue-in-cheek view of the modern Yuppie world.

While traveling, I encountered a brochure for a firm selling VCR training materials for teaching classes or techniques for a wide variety of professional practices - in this era of see rather than read (and for employees who are increasingly illiterate - 20% of all American adults cannot read) - these become more and more useful/used. Commercial nursery/landscape people may want to take a look at these offerings. Idea Bank, P. O. Box 23994, Tempe, AZ 85285 (1-800-621-1135).

Identification of various causal factors for plant disorders is very important to nurserymen, landscapers, and grounds maintenance personnel. *Herbicide Injury to Trees and Shrubs: A Pictorial Guide to Symptom Diagnosis* by Jeffrey F. Derr and Bonnie Lee Appleton describes causes and shows injury symptoms for commonly used herbicides today. Available for \$24.95 from Blue Crab Press, P. O. Box 5055, Virginia Beach, VA 23455-5055. For teachers - a slide set of the 41 photographs in the book is also available for \$39.95.

A remarkable reference book was recently published by The University of North Carolina Press, Box 2288, Chapel Hill, NC 27514. *A Synonymized Checklist of the Vascular flora of the United States, Canada, and Greenland* by John T. Kartesz and Rosemarie Kartesz (\$35.00) - provides the first authoritative list of native and naturalized plants found in the U.S., Canada, and Greenland. More than 250 botanical specialists cooperated on this project over a seven year period. More than 55,000 scientific names of some 22,000 species of vascular plants in 255 families are treated. It is the only checklist to synonymize all regional and folk names for plants with their scientific equivalents.

Quotes: "Green's Law of Debate: Anything is possible if you don't know what you're talking about."

"Forms are for mediocrity, and it is fortunate that mediocrity can act only according to routine - ability can take its flight unhindered - Napoleon I."

It was with great excitement that I learned one of my favorite books on planting and landscaping which has been out of print for some years has recently been reprinted and is available from: University of South Carolina Press, Columbia, SC 29208 (803-777-5243). The book is *Nature's Guide to Successful Gardening and Landscaping* by William Flemer III. Mr. Flemer is president of Princeton Nurseries (one of the largest and best wholesale growers on the east coast) near Princeton, NJ. I've collected varying articles by him over the years which I insist on my students reading in detail as no one provides so much useful material, so accurately, and so succinctly as Flemer. This book approaches landscaping from an ecological standpoint of understanding the site and matching appropriate physiologically adapted plants to that site - rather than the common practice of saying one likes rhododendrons and they will try to grow them on the bottom of the goldfish pond regardless of cost or effort - rather than the obvious solution of opting for waterlilies. Great - highly recommended. \$24.95 for cloth; \$12.95 for paperback - plus \$2 shipping fee. Other plant books of interest available from this publisher would include: *Ferns of the Coastal Plain: Their Lore, Legend, and Uses* by Lin Dunbar (\$11.95 paper; \$21.95 cloth) and *Wild Flowers in the Carolinas* by Wade T. Batson (\$11.95; \$24.95).

Many of our readers have enjoyed the excellent lectures by Mr. Stephen Lacey of England at our Friends of The NCSU Arboretum (now the JC Raulston Arboretum) program and at the Davidson Symposium - and those fortunate enough to be able to attend the meetings have been impressed by the knowledge and experience of this talented man. His book on color and scent in the garden, *The Startling Jungle*, has had an overwhelmingly strong response in England and is now being published in the U. S. - readers can order it for \$19.95 (plus \$1.50 for shipping) from: David R. Godine, Publisher, Inc., Horticultural Hall, 300 Massachusetts Ave., Boston, MA 02115 (617-536-0761). Among many rave reviews published on the information leaflet - Allen Lacy comments: "The Startling Jungle instantly reveals Stephen Lacey to be one of the freshest and most refreshing voices to emerge in the English-speaking gardening world in the past three decades. His knowledge of worthwhile and often unusual plants is vast, and he delivers it with rare charm, grace, and humor, not to mention a prose style that will delight even readers who seldom pick up a trowel." And the journal *Hortus* states: "Good gardeners with a designer's eye are rare; so are good writers. People who can both garden well and write well are even rarer. I can only think of a half a dozen in all. Judging from this, his first book, Stephen Lacey seems set to become the seventh . . . If there is any justice, this should become a classic."

The Island Press, 1718 Connecticut Ave., NW, Suite 300, Washington, DC 20009 (Center for Resource Economics) produces an Annual Environmental Sourcebook of 137 books for conservation and environmental management. For anyone concerned about the dangerous direction our planet is heading - this listing will provide useful references on present situations and potentials for programs and activities to become involved with. The most "garden" oriented of the books is *Garden Seed Inventory - Second Edition* (1988, 424 pages). It relates to the problem of consolidation of smaller seed companies to large corporate firms with loss of traditional varieties and the increasing prevalence of hybrid varieties (from which seed cannot be kept for a next generation). This book lists 215 mail-order seed catalogs in the U.S. and Canada - and some 5,291 varieties of vegetables are described and coded into the companies which offer them. Available in paper (\$17.50) or cloth (\$25).

Well - frustrated once again with nearly half the pile of "good material" still by my keyboard awaiting entry - more next time.

## **EASTERN RED CEDAR, JUNIPERUS VIRGINIANA - A COMMON, OVERLOOKED TREE WITH HIDDEN POTENTIAL**

The following article gradually grew out of a talk given to the Cullowhee Native Plants conference in 1987 when I gave a lecture on various aspects of native versus exotic plants in the landscape. During the talk I showed slides of a variety of wonderful forms of the eastern red cedar in the wild and mentioned how overlooked this fine native tree was in the nursery/landscape industry. Following the talk Mr. Mark Kane visited with me about the possibility of doing an article on red cedar for *Fine Gardening* - a new magazine then just in

the planning stages. I indicated my great difficulty in writing articles and though I would like to do it - I warned him in reality it was unlikely I would ever manage to actually get one written. Later that fall he visited North Carolina to meet many people in the gardening world and we had the opportunity to visit at length and philosophize about plants and life - and a vague promise was again made to try to work on the article - perhaps during my upcoming sabbatic leave when I would "get incredible amounts of writing done". (HA!)

As I took off on the leave - his letters followed me from country to country always asking about how the article was coming. Finally on a rainy day in Athens in April - the spirit (and great guilt) moved me and I pounded out an article in one day on the portable computer I was traveling with. (Which I then hand copied off the computer screen onto paper to mail to him, where it was typed back into a computer for editing - totally losing the advantage of easy disk transfer of information.) By the time I came back in summer we finished the editing and it was eventually published in the December issue.

With magazine space limitations and their desire for quality writing, it was necessary to edit the lengthy and rambling article I typically write. Although we publicized and recommended subscribing to Fine Gardening in the last newsletter - many of our newsletter "Friends" will not have seen this article so they've given me permission to publish the information here - and I will use the full Raulston version (I need some page filling material to be able to get the newsletter out again!)

One of the ironies of the landscape plant world is the balance often needed for a plant to become a "desired" species for widespread commercial useage. If it is too difficult or specific in requirements it is eliminated or left to advanced specialist gardeners - but on the other end of the spectrum if it is too common or easy to grow it is often disparaged as either being "weedy" or a "trash plant" which would cause sophisticated gardeners to lose face by including it in their plantings. Also, the more widespread and common plants are, in a sense they become more invisible as a part of the everyday background. It is easy to overlook the merits of a plant which makes it tough, dependable, and useful when the right situation is available.

In my work at The NCSU Arboretum (now the JC Raulston Arboretum) the primary mission is to evaluate new trees and shrubs for merit and possible introduction to the nursery/landscape industries of the southeastern U.S. As a somewhat natural course of events - the more exotic, rare or new a plant is, the more interesting it seems to become to the specialist because of the difficulty in acquiring it, the status value of showing your "choice" item to visitors, and the chance to learn new information about previously ungrown materials.

Some years ago I was somewhat shocked when a NCSU landscape architecture faculty member proclaimed to me that the Eastern Red Cedar, *Juniperus virginiana*, was the finest N. C. native woody plant for landscape use. A first reaction was to violently protest with a list of the outstanding alternative selections possible from our extraordinarily rich native flora: Sweet Gum - *Liquidambar styraciflua* (featured in a February Horticulture magazine article - coming here in the next newsletter); Flowering Dogwood - *Cornus florida*; Silverbell - *Halesia caroliniana*; Black Gum - *Nyssa sylvatica*; Red Chokecherry - *Aronia arbutifolia*; Bald Cypress - *Taxodium distichum*; Southern Magnolia - *Magnolia grandiflora*; Florida Leucothoe - *Leucothoe populifolia*; Mountain Laurel - *Kalmia latifolia*; Red Maple - *Acer rubrum*; Ironwood - *Carpinus caroliniana*; Virginia Pine - *Pinus virginiana*; Bayberry - *Myrica ceriferaa*; all the many fine native azaleas and rhododendrons - and a list that could go on and on for pages.

But as time passed and I had the chance to slowly meditate about the pros and cons of this statement - it became clear that I had indeed let this plant I had known all my life become invisible to me. It would grow on virtually any site without special care, had almost no pests which would destroy it, would live for centuries under the right conditions, etc. Eventually it became an answer (almost the answer) for a final exam question I would throw at students in a graduate course I teach at NCSU entitled "Physiology of Landscape Plants". This course attempts to teach landscape architecture and landscape horticulture students the applied plant physiological reasons why plants succeed or fail in the landscape - aspects of heat, drought, salts, soils, freezing, etc.

After a semester of discussing individual environmental stress factors; the question I posed to students at the end was: "Name a specific tree which meets the following requirements for a given landscape - can be grown from USDA Hardiness Zone 2 through 9, drought tolerant, tolerant of high or low pH soils whether loose and gravelly or compacted, minimal pest problems, salt and wind tolerant for beach conditions, evergreen, attractive fruit, long lived, tolerates high winds and has a solid root system to prevent "wind throw", propagates easily, is easy to nursery transplant and establish in the landscape, and is rapid growing when young."

Many students facing such a demanding list of requirements answer in frustration that a plastic plant was the only possible answer. (Not correct as it does not grow rapidly when young!). Yet most had grown up with the red cedar around them all their lives and saw it daily - but its merits were truly invisible and they rarely considered it as a desirable landscape plant in their professional work.

It remains even more invisible in commercial trade with rare production in eastern and southeastern states - and a bit more common in the midwest and plains states where good tough evergreen trees are harder to select. One of the commercial nursery production limitations of this plant is that the young form is too stiffly columnar and so unlike the more irregular and picturesque nature of older plants. To produce an old plant with "character" requires too many years for economic feasibility.

In recent years in N. C. a new landscape industry trend has developed with tree spade transplanting of old specimen red cedars from development sites, pastures, etc. for commercial office park and city plantings. They can be handled this way quite easily with few losses and the public (and landscape professionals) is beginning to appreciate just what a fine plant is in their midst.

The red cedar is native to all 37 states east of the North Dakota to Texas Great Plains area and under cultivation it would likely grow at least somewhere in all 50 of the states - a truly remarkable range of tolerances matched by few other woody plants. A very closely allied species, *Juniperus scopulorum*, the Rocky Mountain juniper, is native west of the Great Plains from Colorado to the Pacific - so closely

related that individuals and cultivars of the two species are often difficult to tell apart with cross listings in commercial sources. Some authorities feel that the two are essentially ecotypes of the same species - and the "lumpers" and "splitters" arguments go on forever. Generally the Rocky Mountain juniper and its cultivars have a bluer color, the flowers are different, and it ripens its seeds the second year after their formation rather than the first year. They will freely hybridize with the eastern red cedar when planted together. In general the Rocky Mountain juniper is less successful in eastern landscapes with the higher humidity and are more disease-susceptible than the eastern red cedar.

The eastern red cedar was an important tree to me in my early childhood in the plains wheat farming belt of Oklahoma. A line of old cedars near our farm home had been planted in the 1930's during the period of massive windbelt plantings to stabilize Dust Bowl conditions. This mature planting of gnarled growth and dense foliage provided an ideal place for a child to learn to climb trees with nicely spaced limbs all the way to the ground and few interior branches (through shading out of growth over the years) to impede progress upward. As skill and courage developed, the top of the tallest tree became a secret observation tower to scan the flat plains for objects and activities in all directions. At the base, the clear ground area under the skirt of the limbs with a layer of the brown scale leaf/needles provided an ideal shady play area out of the summer sun and heat. Many years later in my professional career I learned of "allelopathy" - the chemical inhibition of weed seed germination through leachates from the dropped foliage which kept that zone clear under the tree with a built in biological herbicide.

As the only native coniferous tree available in the area - the red cedar was also our traditional Christmas tree - with endless driving around in pastures of the area and discussions to chose the perfect tree to cut for the home each year. And I also have the memory of how rapidly the tree would dehydrate in the house - and the brittleness and prickly dry foliage when dismantling it. Because of the longer use life of firs, spruces, and pines - and improved shipping and handling conditions to move them throughout the country, red cedar has declined from its traditional role as the Christmas tree in many sections of the U.S. But it is still plantation grown and sold for this purpose; and remains the memory of childhood Christmas to many people today. For many areas it is the appropriate tree for traditional decoration of historic homes - both as a decorated tree and for roping and wreaths.

The red cedar also has historic and commercial use in varying ways from the fragrant red wood used to line closets and clothing storage chests, for pencils, carving, and some paneling. Cedar posts are noted for their long life with the rot resistant red heartwood, for rustic garden construction, and garden stakes. Red cedar oil is extracted from the wood and is used in perfumes and as an insect repellent. With the allelopathic properties mentioned earlier, needles raked from under trees and applied as a mulch in the garden can be an effective biological herbicide (don't try it on your flower or vegetable seedbeds!) for growing plants or perennial plantings.

The main biological problems for the red cedar are bagworms which can appear as heavy localized and cyclic populations. In smaller quantities they can be hand picked and chemical controls are also available when required. The cedar apple rust disease affects the tree but causes it no serious harm (some consider the purplish grey galls on the tree to be somewhat ornamental and even appealing!). The main problem of course is that the red cedar is the alternate host for this disease which can be so devastating to susceptible apple and hawthorn cultivars. For this reason it is not recommended for planting in areas with such plants. Deer will eat red cedar foliage, and where deer are numerous and hungry, they may strip trees as far up as they can reach.

In the wild, red cedars can be extremely variable in appearance depending on individual plant variations, species variation, habitat, and age. Although trees can get up to 100' in height, in cultivation they are generally seen as 20-40' specimens. The foliage color of red cedars will often change with the seasons. The new growth is a tender green before changing to the mature color which may vary from a pale green to a dark, almost "black" green. In winter, the foliage on some trees darkens and turns purplish. In the plains states where bright sunlight and very low temperatures may exist in winter - foliage browning due to excess transpiration causing leaf scorch can be objectionable. Red cedar foliage consists of scale-like leaves which are narrow and very short, between 1/16th inch and 3/8th inch long, arranged in 4 rows that give the twig a squarish cross-section. They overlap considerably and lie almost flat on the twig (in the adult form); but on seedlings and young trees there are also (juvenile) leaves that stand up with a softer, "fluffy" texture. Krussman offers the following suggestions for sorting out *J. chinensis* and *virginiana* - juvenile leaves of *chinensis* are usually in whorls of three; whereas *virginiana* are usually paired, or whorled on the terminal shoot; the adult scale leaves on *chinensis* are "apex obtuse and bowed inward", with *virginiana* "acute on the apex and not incurved".

There are variations in general form with northern populations (often classified as *J. virginiana* var. *crebra*) having more of a narrow conical shape than the more broadly tapered southern types. In areas with frequent high winds - beaches and the Great Plains - trees will be dense and compact with highly ornamental shapes resembling large bonsai specimens. Red cedar is adaptable to shearing for hedges or topiary, but cuts made to older trunks without green foliage will usually not resprout from a heavy branch stub.

As individual trees age they usually change from narrowly columnar when young, with the crown becoming wider and more irregular with age. Lower limbs will shade out with a distinct trunk and spreading crown developing on older trees. In areas with major ice storms, old trees often have missing sections where lateral branches with heavy weight loads have split out - but this can in a sense add to the picturesque quality of ancient trees (up to a point of course).

The amount of individual plant variation within any given population is also immense and in a fence row or roadway planting of seedling trees one can often find a complete range of shapes, textures, foliage color, fruiting ability, etc. Although the best forms of red cedar are magnificent; on the other end of the scale - the worst can be among the rattiest and ugliest of trees in existence. This lack of uniformity has somewhat hindered the acceptance of the plant in commercial channels which demands uniformity for formal plantings. Seedling

red cedars which are easy and cheap to produce (collect the bluish "berries" in winter, moist cold stratify for 3-4 months, and sow) have great variation; and clonal plants (named cultivars) are generally more difficult to propagate by cuttings or grafting than clones of the Chinese Juniper - *Juniperus chinensis* - which accounts in part for the greater commercial popularity of the latter.

It can be worth a gardener's effort to look closely at wild trees if living where the species is native to select locally adapted genetic material of superior plants. Separate sexes occur and only female trees will produce the bluish/purple fruit which may be somewhat biennial in heavy fruit set. There are unquestionably many plants still to be discovered in the wild superior to any of the named cultivars available in commercial trade today. This search should perhaps best be made in winter as one of the major objections of this species is the browning of the foliage (mentioned above) which often occurs in extremely cold weather on many individuals. Also, owners of the property with trees of interest should be contacted for permission before any cuttings are taken.

Cuttings of young juvenile red cedar plants can be rooted relatively easily if taken December - February, treated with a commercial rooting hormone as recommended for conifers, and either placed under intermittent mist on a timer or in a high humidity chamber to maintain moisture levels in the cutting until rooting occurs. As mentioned above when talking about red cedar as a Christmas tree - this species has the potential to desiccate and dry out very quickly with rapid transpiration. Good moisture control for high humidity is far more important for cutting propagation of this species than most other conifers.

As landscape plants age and transition from a seedling juvenile stage to an adult physiological condition - rooting becomes increasingly difficult (the older the plant, the more difficult to root cuttings from it). This becomes a significant factor as young trees which can be propagated do not demonstrate the final plant character or fruit quality; and when wonderful fine old trees are selected to propagate from in the wild or in a landscape planting - they may not be possible to root. But one should at least try to root desirable older plants as individuals also vary in this character and some older trees do retain better abilities to be rooted than others.

The lower portions of a plant remain most juvenile and the closer to the root/shoot union of the plant one can take a cutting the more likely it will root. On older trees generally no vegetative growth remains near the base eliminating this possibility. Most of the common commercial cultivars are relatively easy from cuttings which accounts for their more frequent production.

To propagate difficult-to-root individuals - grafting onto seedling red cedar (or rooted cuttings of *J. scopulorum* 'Skyrocket') understock is commonly practiced. Container grown understock plants are usually brought into greenhouses in winter to break dormancy and start active cambial activity. Dormant scions from desirable clones or selected individuals are grafted with a side veneer graft and wrapped with budding rubbers or a soft poly tape to prevent moisture loss from the cut surfaces until the scion and understock have grown together with a good union.

During this period the plants should be held in high humidity chambers or in shade to prevent moisture loss - and at temperatures of 50-70F to encourage active cell division for healing. Since conifer grafts generally heal more slowly than broadleaf species, and since red cedar rapidly loses water and dries out - it is very important to ensure that the scion does not dehydrate before union occurs. As the scion begins growth, the top of the understock can gradually be cut back.

(As a side issue on grafting of red cedar - the species is often also used as inexpensive understock for other species of junipers - particularly on the "standards" of weeping groundcover types which are so popular on the west coast. Grafting scions of *Juniperus horizontalis* or *J. procumbens* on to eastern red cedar at 4-9' high can result in spectacularly beautiful cascading plants as they age. Of course, the red cedar branches are gradually removed with time leaving just the "cedar" trunk with the branches of the other species cascading around it. "Topworking" of "excess" red cedar plants on your property can transform the plants into interesting novelties - and offer a potential commercial product to produce for the nursery industry.)

To obtain a few plants for personal use - one could also consider air-layering branches of desired plants. This propagation technique is the most likely to yield success on difficult materials for an amateur as the parent plant continues to provide full moisture and carbohydrate support to the propagule during the rooting process no matter how much time is required to successfully complete it.

A selected branch 6-8" long can be girdled (remove a 1" length of bark completely around the branch) or cut partially through the stem (not cutting too far through or the stem may be so weakened it will break off in wind or a storm). Then treat with rooting hormone at the wound, wrap the wounded area in a 2-4" ball of moist spagnum/peat moss pressed around the stem, and enclose in a moisture tight polyethylene barrier to prevent drying of the rooting medium. If the air layer zone is in sunshine it is useful to further wrap it in reflective foil or to paint the plastic white to prevent overheating of the rooting zone. Check periodically for root development. When the air-layer has a good mass of roots - usually in two to four months, cut it from the tree. Harden it off and transplant it as you would any newly rooted woody plant cutting. Air layering is not used commercially on red cedar due to its inefficiency and high cost - but it can be very effective.

Since graft propagation is more complex and expensive with less percentage success - cultivars which must be grafted are less commonly seen in commercial trade and are more expensive when they do appear. In one sense, considering how variable the species is - and how widespread it is in America - it is surprising there are so few cultivars in the U. S. nursery/landscape trade. When *Fine Gardening Magazine* was searching around the country to find commercial sources to include in their article (included at the end of this article) - they found many nurseries that have carried a number of red cedar cultivars in the past have just recently dropped them from their lines due to lack of demand; and that others are considering eliminating them in the near future. When the public and landscape professionals do not use plants when they are available - nurserymen have no choice but to stop producing them. The largest wholesale

nursery in the southeastern U.S. today lists 20 cultivars of *Juniperus chinensis* in their catalog - and none of the native red cedar. It is conceivable that in a few years as corporate nurseries move to standardized popular crops, that production of red cedar cultivars could almost disappear in this country. However, one large wholesale nursery in New York indicated they had 10,000 seedling plants up to 12' in height in their fields and they always sell well for them - to the point they have difficulty in keeping them in stock.

Many of the cultivars which exist have been selected and developed in Europe where the species was introduced before 1664, is exotic and therefore more exciting. Many of these cultivars have probably never been introduced to the U.S. as there is so little interest and demand to begin with; and the two year post-quarantine period requirement on imported *Juniperus* creates a significant barrier that few are able and/or willing to fight to get them into this country. If one is going to go to that much effort - it is more likely that it will be to get a dramatic horticultural cultivar of some exotic species than a local plant no one is too excited about to begin with. The best collection of *Juniperus virginiana* I have noted in traveling is in the Valley Gardens conifer collection just outside London on the Winsor Castle grounds. It is likely that somewhere in Germany there would be extensive collections as well. Since the Europeans have developed so many red cedar cultivars it is surprising that it is so seldom grown commercially overseas when so many of our other native plants have become so popular in Europe and Asia.

A search of literature available in my office (NYBG = New York Botanical Garden Encyclopedia of Horticulture; Hortus Third; den Ouden - Manual of cultivated Conifers; AHL = Andersen Horticultural Library Source List of Plants and Seeds; D = Dirr - Manual of Woody Landscape Plants; K = Krussman - Manual of Cultivated Conifers); additions from Fine Gardening's (FG) search; a list from Dr. Lighty of Mt. Cuba center; and notes from the European sabbatic leave has turned up the following 77 cultivars seen or reported to exist. Many are quite rare and some probably do not exist in the U.S.

'Albospica' (syn. 'Argentea') - white tips on branches; some twig tips green and others cream or white; introduced before 1891 (K, FG, NYBG, Hortus).

'Ambigens' - low, prostrate shrub; saucer-shaped; branches prostrate, spreading or subscendent (FG, Hortus).

'Aurea' - yellowish foliage; variegated foliage green and gold (FG).

'Blue Cloud' - large shrub; grey-green foliage; supposedly a hybrid between *J. v. 'Glauca'* and *J. chinensis 'Pfitzeriana'*; long feathery young shoots emerge from all over the plant providing an unkept appearance (D, FG).

'Blue Mountain' - listed by Vermeulen & Sons in 1985 (Mt. Cuba).

'Boskoop Purple' - slender conical; foliage turns purple-brown in winter; fast-growing; a mutation of 'Hillii' introduced by F. J. Grootendorst in 1963 (K, FG, NYBG, den Ouden)

'Burkii' - broad columnar to conical (also listed as narrowly-pyramidal?); glaucous foliage turns steel blue in fall and later purplish in winter; dense; male; introduced before 1930 (D, K, FG, NYBG, Hortus).

'Burkii Compacta' - no description (AHL).

'Canaerti' - columnar to conical shape with nearly horizontal picturesque branches (particularly dramatic in the plains states) with dark green foliage; female with heavy fruit production; named in honor of Canaert D'Hamale of Belgium before 1868 (D, K, FG, NYBG)

'Carolina' - unknown Dutch selection (listed in catalog) (FG)

'Chamberlaynii' - spreading; branches horizontal to pendulous (stout spreading); branchlets elongated, pendulous; leaves most appressed, glaucous; ash-grey; female; English cultivar before 1850 (K, FG, den Ouden).

'Cinerascens' - conical and open; new growth ash-grey to silvery; French introduction before 1855 (K, FG, Hortus).

'Columnaris' - erect, columnar (Hortus).

'Compacta' - no description (FG, AHL).

var. *creba* - a botanical variety - the slender growing type encountered in the NE U.S. as opposed to the broader growing southern type. (K).

'Cupressifolia' - narrow/slender conical form; with fine texture medium green (also reported yellow-green) foliage; confused in trade and trees are sold under this same as 'Hillspire' (note from Krussman - developed by D. H. Hill in 1925 and given this name in 1946. The true name should be 'Hillspire' as 'Cupressifolia' had been given to another European clone in 1932.) (D, K, FG, Hortus)

'Cupressiformis' - conical shrub; lacking trunk with many branches from ground (Hortus).

'DeForest Green' - columnar to conical; like 'Canaerti' but darker green and faster growing (FG, NYBG).

'Dundee' - no description (FG, AHL).

'Elegantissima' - conical 6-10'; slightly pendulous golden-tipped branches with bronzy color in fall - considered one of the most beautiful forms in existence; cultivated before 1882 (K, FG, NYBG).

'Emerald Sentinel' - (? Conard Pyle - listed by Huber 1985) (Mt. Cuba).

'Fastigata' - narrowly columnar; branchlets erect; leaves bluish green; male clone?; introduced 1933 (K, FG, Hortus).

'Filifera' - broadly conical; long slender weeping branchlets; introduced by D. H. Hill before 1923 (K, FG, AHL).

'Fiore' - unknown Dutch selection (seen in catalog) (FG).

'Frosty Morn' - new Bressingham Nursery cultivar (seen in England) with blue foliage - likely scopulorum;

'Glauca' - narrowly columnar and loosely upright forms; the silver red cedar with several varying clones grown under this name; densely branching, fast growing (D, K, FG, Hortus).

'Glauca Compacta' - Hess Nursery listing 1985 (Mt. Cuba).

'Glauca Pendula' - conical habit, branches spread horizontally, branch tips and branchlets nodding; male flowers very numerous, yellow in May; cultivated before 1909 in France but no longer in culture (K).

'Globosa' - dense globe shaped; to 3 ft in diameter; very densely branched, dark-green foliage, more brown in winter; known since 1891 (D, K, FG, den Ouden)

'Gotelli Weeping' - (FG, AHL).

'Grey Owl' - low, spreading shrub; a spreading form similar to Pfitzer juniper with silvery grey foliage; hybrid of *J. virginiana* 'Glauca' X Pfitzer juniper from Gebr. Caam, Oudenbosch, Holland in 1938, introduced by F. J. Grootendorst in 1949; lower and wider than 'Blue Cloud' (D, K, FG, den Ouden)

'Hillii' (syn. 'Pyramidalis Hillii') - dense, columnar with spreading branches 6-12'; greenish-blue foliage turning purple (pink-plum) in winter; introduced by D. H. Hill in 1916 (D, K, FG, NYBG)

'Hillspire' (syn. 'Cupressifolia Green') - symmetrical conical; bright green summer and winter; female (K, FG, NYBG, AHL).

'Henry' - (possibly *Chamaecyparis henryi*?) - (AHL).

'Horizontalis' - prostrate, mat-like; branchlets slender, whip-like; leaves glaucous, scalelike (Hortus). "Plants in the nursery under this name have been shown by Hillier and Welch consistently to be *J. horizontalis* or a form thereof" (K).

'Horizontalis Glauca' - known in American nurseries as 'Blue Coast Juniper' is actually *J. v. 'Chamberlaynii'* (K).

'Idyllwild' - Monrovia Nursery listing (AHL).

'Keteleeri' - also listed under *J. chinensis* (FG, Hortus)

'Kobenzii' - narrow columnar; densely branched; From the Kornik Arboretum, Poland 1932 (K, FG)

'Kobold' - globe shaped dwarf; dense, branches thin, branchlets upward to spreading; bluish-green; introduced in Holland in 1952 by N. Th. Bosman, Boskoop (K, FG, den Ouden).

'Kosteri' - low spreading bush; identification not sure, may be a wide, flat variation of 'Pfitzer'; ; male, wide-spreading, mound-shaped bush to 4'; branch tips plumose, leaves green and mostly scalelike; possibly Dutch introduction in 1870 by M. Koster & Zonen, Boskoop (D, K, FG, Hortus)

'Lebretonii' - no description (Hortus).

'Manhattan Blue' - compact conical; foliage more blue-green than 'Glauca'. Reported as both female and male cultivar in literature; possible scopulorum; introduced before 1963 by R. Scott of Manhattan, KS (D, K, FG, NYBG, den Ouden).

'Mission Spire' - Hess Nursery Listing 1985 (Mt. Cuba).

'Monstrosa' - low spreading shrub; witch's broom-like branching; very slow-growing. 1867 (K, FG).

'Moonglow' - unknown Dutch selection (seen in catalog - and at Bressingham Nursery); very likely scopulorum (FG, AHL).

'Nana Compacta' - globe-shaped dwarf; irregular in outline; bushy 1-3' in size; less compact than 'Globosa' and more irregular; greenish-blue in summer, purplish in winter; from Holland before 1887 by C. G. Overeynder, Boskoop (K, FG, den Ouden).

'Nova' - narrow upright, columnar; branchlets erect; blue-grey to grey-green foliage. Verbal report it is produced by some nurseries as a seed-grown "cultivar" with slight variations among various seedling individuals (D, FG, Hortus).

'Pendula' - weeping branches on tree form plant; wide-spreading; introduced in England before 1850 (D, K, FG, NYBG, AHL).

'Pendula Nana' - dwarf; horizontal to nodding branches; round-topped tree; Hillier Nursery 1928 (K, FG, den Ouden).

'Pendula Viridis' - weeping; open habit with limp arching branches, branchlets hang downwards; bright green foliage; female; introduced in England before 1862 (K, FG, Hortus).

'Plumosa' (syn. 'Plumosa Alba' or 'Plumosa Argentea') - conical; graceful habit, leaves mainly needle-like; branch tips white; sulfur yellow or gray-green. Introduced in Holland before 1887 by H. Van Nes, Boskoop (K, FG, Hortus).

'Prostrata' - low growing; much like *J. horizontalis* in form (FG, Hortus).

'Pseudocupressus' - very narrowly columnar; branchlets erect and hugging stem closely; bluish-green foliage; Introduced by Morton Arboretum 1932 (K, FG, Hortus, den Ouden, AHL).

'Pumila' - globose; very compact dwarf shrub; branches erect and spreading; young leaves bluish-white above (den Ouden).

'Pyramidalis' - (Dirr - unfortunately a collective name for pyramidal-growing forms); naturally pyramidal; bright green turning purplish; 4 times as high as wide; introduced by D. H. Hill Nursery 1922 (K, D, NYBG).

'Pyramidiformis' (syn. 'Hillii') - narrow columnar to 40'; dark green foliage; ("introduced in 1922" = 'Pyramidalis?') (K, FG, Hortus, AHL).

'Ramlosa' - no description (FG).

'Reptans' - prostrate dwarf; the 'Reptan' of commerce is often a misnamed *J. horizontalis* according to Krussman - true plant no longer cultivated?; green foliage; male clone; introduced in (East) Germany 1918 (K, FG, Hortus).

'Robusta Green' - narrow columnar habit, densely branched; from USA, origin unknown (K). Listed by Dirr as *J. chinensis*.

'Schottii' - small, narrowly columnar; 3 times as tall as wide; thin twigs; light green to yellow-green foliage in winter (differing thus from 'Canaertii'); scalelike leaves, discoloring in winter; widely grown in England; female; introduced in England before 1855 (K, FG, NYBG, Hortus).

'Seedling Spreader' - Foxborough Nursery introduction (AHL).

'Sherwoodii' - narrow columnar; branch tips are cream-yellow in spring, solid green in summer, violet (dark plum) in winter; similar to 'Canaertii'; introduced in Oregon in 1935 by Sherwood Nursery Company of Portland (K, FG, den Ouden).

'Silver Spreader' - low spreading shrub; similar to 'Grey Owl' but more silvery; Introduced by Monrovia Nursery 1954 (D, K, FG, AHL).

'Slender' - narrow upright form?; Polly Hill cultivar (Mt. Cuba).

'Skyrocket' - very narrowly columnar, pencil-point form; branchlets erect, good blue foliage. Though often reported or sold as *J. virginiana*; almost certainly a *scopulorum* cultivar (FG).

'Smithii' - also listed as *J. chinensis* 'Arbuscula' (Hortus).

'Sparkling Skyrocket' - very narrowly columnar, pencil-point form; a white-variegated mutation from 'Skyrocket' introduced by Vermeulen 1985; again certainly *scopulorum* (FG).

'Staver' - upright; grown by Coles and Angelica Nurseries in PA & MD - local cv.; catalog (Mt. Cuba).

'Stover' (misprint of 'Staver?') (Mt. Cuba).

'Taylor' - listed in The Public Garden/Jan 87; Nebraska Statewide Arboretum introduction 1987 (Mt. Cuba).

'Topiary' - Greenbriar Farms Ltd Nurseries, Chesapeake, VA (AHL).

'Triomphe d'Angers' - conical; good white variegated form with white tips over entire tree; slow growing; introduced before 1891 (K, FG, den Ouden).

'Tripartita' - dwarf irregular form; low, dense and spreading to 5' high and 10-14' across; branches irregularly arranged; leaves mostly needle-shaped; male; introduced 1867 (D, K, FG, Hortus).

'Variegata' - white variegation (FG)

'Venusta' - columnar; light bluish-grey foliage; differs from 'Burkii' in having leaves ash-grey, not glaucous-blue (FG, Hortus).

'Vuyk' - unknown Dutch selection (seen in catalog) (FG).

The editors of Fine Gardening magazine searched widely throughout the U.S. to find commercial sources for various cultivars - and ended up with only 10 cultivars generally available. They published the following list of suppliers located:

Foxborough Nursery, 3611 Miller Rd., Street, MD 21154. Mail-Order. Good cultivar list, but not all in stock. Will custom propagate. Write for information.

Girard Nurseries, P. O. Box 428, Geneva, OH 44041. Mail-Order. Catalog Free.

Hess Nurseries, Inc., P. O. Box 326, Rt. 554, Cedarville, NJ 08311. Wholesale only. Ships newly grafted plants in small pots. Minimum order \$50; order directly or through your local nursery.

Michael A. Kristick, 155 Mockingbird Rd., Wellsville, PA 17365. Mail-Order. Write for information on plant sizes, prices and shipping.

Monrovia Nursery Co., 18331 E. Foothill Blvd., Azusa, CA 91702. Wholesale only. Good collection - ships many sizes nationwide. Order through your local nursery.

Schlichenmayer's Old Farm Nursery, Inc., 5550 Indiana St., Golden, CO 80403. Mail-Order. Price list free. Write for information on plant sizes and shipping.

## **NEW PLANTS RECEIVED BY THE NCSU Arboretum (now the JC Raulston Arboretum) - JULY-DECEMBER 1988**

88/0374 - *Chimonanthus praecox* 'Concolor' - Dr. Hans Simon - Germany - Liner - 07/10

88/0375 - *Chimonanthus praecox* 'Grandiflorus' - Dr. Hans Simon - Germany - Liner - 07/10

88/0376 - *Chimonanthus yunnanensis* - Dr. Hans Simon - Germany - Liner - 07/10

88/0377 - *Stachyurus sinensis* - Dr. Hans Simon - Germany - Liner - 07/10

88/0378 - *Rosa* 'Snow Carpet' - US Nat Arb (Wisley) - Washington, DC - Cuttings - 07/16

88/0379 - *Magnolia zenii* - US Nat Arb - Washington, DC - Cuttings - 07/16

88/0380 - *Nandina domestica* 'Variegata' - Brookside Gardens - Wheaton, MD - Cuttings - 07/16

88/0381 - *Jasminum nudiflorum* 'Mystique' BSG 1691 - Brookside Gardens - Wheaton, MD - Cuttings - 07/16

88/0382 - *Deutzia gracilis* 'Nikko' (crenata 'Nakkiana') - Brookside Gardens - Wheaton, MD - Cuttings - 07/16

88/0383 - *Gardenia* sp. 'Shikizaki' BSG1918 - Brookside Gardens - Wheaton, MD - Cuttings - 07/16

88/0384 - *Koelreuteria paniculata* 'Fastigata' - Brookside Gardens - Wheaton, MD - Scions - 07/16

88/0385 - *Juniperus virginiana* 'Nova' - Brookside Gardens (Angelica) - Wheaton, MD - Cuttings - 07/16

88/0386 - *Pyracantha* X 'Yatsubusa' BSG1964 - Brookside Gardens - Wheaton, MD - 3 gal - 07/16

88/0387 - *Cleyera japonica* 'Variegata' BSG275 - Brookside Gardens - Wheaton, MD - 3" pot - 07/16

88/0388 - *Ilex* X 'Mill Creek' BSG - Brookside Gardens - Wheaton, MD - 3" pot - 07/16

88/0389 - *Clethra delavayi* BSG72 - Brookside Gardens - Wheaton, MD - 3" pot - 07/16

88/0390 - *Rhus trichocarpa* - Brookside Gardens - Wheaton, MD - 4" pot - 07/16

88/0391 - *Enkianthus cernus* f. *rubens* 'Fuji' BSG1790 - Brookside Gardens - Wheaton, MD - 3" pot - 07/16

88/0392 - *Ilex* X 'Tiasquam' - Brookside Gardens - Wheaton, MD - 3" pot - 07/16

88/0393 - *Ilex opaca* 'Dengle Belles' - Brookside Gardens - Wheaton, MD - 3" pot - 07/16

88/0394 - *Podocarpus macrophyllus* maki BSG668 - Brookside Gardens - Wheaton, MD - 1 gal - 07/16

88/0395 - *Podocarpus macrophyllus* maki 'Okina Maki' BSG266 - Brookside Grdn - Wheaton, MD - 1 gal - 07/16

88/0396 - *Juniperus virginiana* 'Silver Spreader' - Behnke Nursery (Monrovia) - Beltsville, MD - 1 gal - 07/17

88/0397 - *Juniperus virginiana* 'Grey Owl' - Behnke Nursery (Greenleaf) - Beltsville, MD - 1 gal - 07/17

88/0398 - *Juniperus virginiana* 'Emerald Sentinel' (PP5041 - Var. *Corcorcor*) - Behnke Nursery - 3 gal - 07/17

88/0399 - *Juniperus virginiana* 'Hillspire' - Behnke Nursery - Beltsville, MD - Cuttings - 07/17

88/0400 - *Iris siberica* 'Vi Luihn' - Behnke Nursery - Beltsville, MD - Qt. - 07/17

88/0401 - *Iris kaempferi* 'Moonlight' - Behnke Nursery - Beltsville, MD - Qt - 07/17

88/0402 - *Iris kaempferi* 'Cry of Rejoice' - Behnke Nursery - Beltsville, MD - Qt - 07/17

88/0403 - Iris kaempferi 'Agogakaijyo' - Behnke Nursery - Beltsville, MD - Qt - 07/17

88/0403 - Iris versicolor 'Blue Light' - Behnke Nursery - Beltsville, MD - Qt - 07/17

88/0404 - Iris cristata 'Summer Storm' - Behnke Nursery - Beltsville, MD - Qt - 07/17

88/0405 - Iris cristata 'Shenandoah Sky' - Behnke Nursery - Beltsville, MD - Qt - 07/17

88/0406 - Michelia X 'Foggii #4' - Louisiana Nursery - Opelousas, LA - 1 gal/4' - 07/18

88/0407 - Koelreuteria paniculata 'September' - Louisiana Nursery - Opelousas, LA - 1 gal/1' - 07/18

88/0408 - Ilex vomitoria 'Poole's Best' - Louisiana Nursery - Opelousas, LA - 1 gal/4' - 07/18

88/0409 - Ilex vomitoria 'Grey's Little Leaf' - Louisiana Nursery - Opelousas, LA - 1 gal/2' - 07/18

88/0410 - Magnolia grandiflora 'Baby Doll' - Louisiana Nursery - Opelousas, LA - 1 gal/2' - 07/18

88/0411 - Magnolia macrophylla 'Mississippi Clone' (No - Seedling) - Louisiana Nursery - , LA - 1 gal/1' - 07/18

88/0412 - Liriope muscari 'C. T. Tanner' - Louisiana Nursery - Opelousas, LA - 1 gal - 07/18

88/0413 - Liriope muscari 'Jeanerette' - Louisiana Nursery - ,Opelousas LA - 1 gal - 07/18

88/0414 - Pinckneya pubens 'Savannah Pink' - Louisiana Nursery - Opelousas, LA - 3" pot - 07/18

88/0415 - Cephalotaxus harringtonia 'Fritz Huber' - Louisiana Nursery - Opelousas, LA - 1 gal - 07/18

88/0416 - Osmanthus fragrans f. auranticus 'Conger Yellow' - Louisiana Nurs. - Opelousas, LA - 1 gal/2' - 07/18

88/0417 - Illicium floridanum 'Compactum' - Louisiana Nursery - Opelousas, LA - 1 gal/3' - 07/18

88/0418 - Cladrastis sinensis 1258/45 - U.Wash. Arb - Seattle, WA - 6 Cuttings - 07/19

88/0419 - Petteria ramentacea 575 Or 757?/41 - U. Wash. Arb - Seattle, WA - 8 Cuttings - 07/19

88/0420 - Rehderodendron macrocarpum 603/385 - U.Wash. Arb - Seattle, WA - 6 Cuttings - 07/19

88/0421 - Sinojackia rehderiana 1085/48 - U. Wash. Arb - Seattle, WA - 6 Cuttings - 07/19

88/0422 - X Sorbaronia sorbifolia 940/41 - U. Wash. Arb - Seattle, WA - 6 Cuttings - 07/19

88/0423 - X Sorbaronia 'Brilliantissima' 683/67 - U.Wash. Arb - Seattle, WA - 6 Cuttings - 07/19

88/0424 - Erinacea anthyllis (E. pungens) 37/57 - U.Wash. Arb - Seattle, WA - 3 Cuttings - 07/19

88/0425 - Fortunearia sinensis 730/60 - U. Wash. Arb - Seattle, WA - 6 Cuttings - 07/19

88/0426 - Diospyros kaki - Ballington/China Seed - Raleigh, NC - 1' - 07/21

88/0427 - Diospyros kaki v. silvestris - Ballington/China Seed - Raleigh, NC - 1' - 07/21

88/0428 - Diospyros glaucifolia - Ballington/China Seed - Raleigh, NC - 1' - 07/21

88/0429 - Diospyros oleifera - Ballington/China Seed - Raleigh, NC - 1' - 07/21

88/0430 - Rosa roxburgii - Ballington/China Seed - Raleigh, NC - 1' - 07/21

88/0431 - Buschofie polycarpa ? - Ballington/China Seed - Raleigh, NC - 1' 07/21

88/0432 - Kalmia latifolia 'Prostrate Form' - Bruce Mowrey - Wild Collected - West Virginia - 07/21

88/0433 - Juniperus X media 'Carberry Gold' - Tom Krenitsky - England - Cuttings - 07/22

88/0434 - Juniperus communis suecica 'Aurea' - Tom Krenitsky - England - Cuttings - 07/22

88/0435 - Juniperus chinensis 'Kariwao Gold' - Tom Krenitsky - England - Cuttings - 07/22

88/0436 - Juniperus squamata 'Blue Alps' - Tom Krenitsky - England - Cuttings - 07/22

88/0437 - Juniperus thyoides 'Aurea' - Tom Krenitsky - England - Cuttings - 07/22

88/0438 - Juniperus ? - Tom Krenitsky - England - Cuttings - 07/22

88/0439 - Tsuga yunnanensis - Hillier Arboretum - England - Seed - 07/23

88/0440 - *Liriodendron chinensis* - Camellia Forest Nursery - Chapel Hill, NC - 1 Gal/15" - 07/26

88/0441 - *Citrus jomos* (2) - Camellia Forest Nursery - Chapel Hill, NC - Qt - 07/26

88/0442 - *Castanea sequinii* (2) - Camellia Forest Nursery - Chapel Hill, NC - Qt - 07/26

88/0443 - *Phoebe chekiangensis* - Camellia Forest Nursery - Chapel Hill, NC - Qt - 07/26

88/0444 - *Illicium henryi* - Camellia Forest Nursery - Chapel Hill, NC - QT - 07/26

88/0445 - *Lindera chienii* - Camellia Forest Nursery - Chapel Hill, NC - Qt - 07/26

88/0446 - *Lindera aggregata* - Camellia Forest Nursery - Chapel Hill, NC - Qt - 07/26

88/0447 - *Lindera reflexa* - Camellia Forest Nursery - Chapel Hill, NC - Qt - 07/26

88/0448 - *Acer grosseri* - Camellia Forest Nursery - Chapel Hill, NC - Qt - 07/26

88/0449 - *Juniperus virginiana* 'Canaert' - Tom Krenitsky - Chapel Hill, NC - 1 Gal - 07/26

88/0500 - *Cyrilla parviflora* 'Small Leaf Form' - Woodlander's Nursery (Niche Gift) - Aiken, SC - Cuttings - 8/10

88/0501 - *Lagerstroemia limii* Merr. (#328) - Hangzhou Bot Garden - China - Seed/Germinated - 8/20

88/0502 - *Cinnamomum camphora* (#94) - Lushan Bot Garden - China - Seed/Germinated - 8/20

88/0503 - *Melia azedarach* (#201) - Lushan Bot Garden - China - Seed/Germinated - 8/20

88/0504 - *Gardenia jasminoides* - Nanjing Bot Garden - China - Seed/Germinated - 8/20

88/0505 - *Jasminum fruticans* (#58) - Czechslovakia - Seed/Germinated - 8/20

88/0506 - *Quercus ceirio* (#255) - Czechslovakia - Seed/Germinated - 8/20

88/0507 - *Sorbaria altaica* (#284) - Czechslovakia - Seed/Germinated - 8/20

88/0508 - *Sapindus mukorossii* NA59800 - U.S. Nat Arb (China Seed) - Washington, DC - Seed/Germ. - 8/20

88/0509 - *Taxus chinensis* - ? - Seed/Germinated - 8/20

88/0510 - *Baptisia cinerea* - N.C. Bot. Garden - Chapel Hill, NC - Seed/Germinated - 8/20

88/0511 - *Persea yunnanensis* - Univ. of Wash - Seattle, WA - Seedlings - 8/30

88/0512 - *Michelia compressa* - Univ. of Wash. - Seattle, WA - Seedlings - 8/30

88/0513 - *Cladrastis sinensis* - Univ. of Wash. - Seattle, WA - Seed (no dormancy) - 9/1

88/0514 - *Cedrus deodara* 'Gold Cone' - Iseli Nursery (Post Properties gift) - Boring, OR - 9' boxed - 9/3

88/0515 - *Cupressus nootkatensis* 'Pendula' - Iseli Nursery (Post Properties gift) - Boring, OR - 6' boxed - 9/3

88/0516 - *Ilex glabra* 'Shamrock' - Cedar Lane Farms (Post Properties gift) - GA - 1 gal - 9/3

88/0517 - *Lithocarpus edulis* - Bill Craven Nursery (Post Properties gift) - GA - 1 gal - 9/3

88/0518 - *Myrica cerifera* 'Georgia Gem' - Bill Craven Nursery (Post Properties gift) - GA - 1 gal (5) - 9/3

88/0519 - *Myrica cerifera* 'Fairfax' - Bill Craven Nursery (Post Properties gift) - GA - 1 gal (2) - 9/3

88/0520 - *Nandina domestica* 'Moonglow' - White Nurseries (Post Properties giftr) - 3 gal - 9/3

88/0521 - *Euonymus japonica* 'Minimus' - ? (Post Properties gift) - Qt - 9/3

88/0522 - *Juniperus virginiana* 'Aurea' - Springvale Farms - Hamburg, IL - 5" - 9/15

88/0523 - *Pinus monticola* - Springvale Farms - Hamburg, IL - 8" - 9/15

88/0524 - *Tsuga canadensis* 'Minuta' - Springvale Farms - Hamburg, IL - 2" - 9/15

88/0525 - *Spirea X cinerea* 'Greifsheim' - Springvale Farms - Hamburg, IL - 5" - 9/15

88/0526 - *Philadelphus* 'Minnesota Dwarf Snowflake' - Springvale Farms - Hamburg, IL - 6" - 9/15

88/0527 - *Arisaema sikokianum* - We-Du Nursery - Marion, NC - Division - 9/16

88/0528 - *Spiranthes sinensis* - We-Du Nursery - Marion, NC - Division - 9/16

88/0529 - *Calanthe discolor* - We-Du Nursery - Marion, NC - Division - 9/16

88/0530 - *Begonia sinensis* - We-Du Nursery - Marion, NC - Division - 9/16

88/0531 - *Bletilla ochracea* - We-Du Nursery - Marion, NC - Division - 9/16

88/0532 - *Bletilla ochracea* X *striata* - We-Du Nursery - Marion, NC - Division - 9/16

88/0533 - *Sinowilsonia henryi* - We-Du Nursery - Marion, NC - 3" seedling - 9/16

88/0534 - *Acer crataegifolium* 'Veitchii' - Buchholz & Buchholz - OR - 2' - 9/18

88/0535 - *Pinus parviflora* 'Ogon Janome' - Buchholz & Buchholz - OR - One yr. graft - 9/18

88/0536 - *Pinus thunbergi* 'Thunderhead' - Buchholz & Buchholz - OR - One yr. graft - 9/18

88/0537 - *Abies veitchii* - Buchholz & Buchholz - OR - One yr. graft - 9/18

88/0538 - *Abies koreana* - Buchholz & Buchholz - OR - One yr. graft - 9/18

88/0539 - *Picea pungens* 'St. Mary's Broom' - Buchholz & Buchholz - OR - One yr. graft - 9/18

88/0540 - *Picea pungens* 'Bakeri' - Buchholz & Buchholz - OR - Gallon - 9/18

88/0541 - *Picea pungens* 'Thume' - Buchholz & Buchholz - OR - 2 Gallon - 9/18

88/0542 - *Picea breweriana* - Buchholz & Buchholz - OR - One yr. graft - 9/18

88/0543 - *Picea brachytyla* - Buchholz & Buchholz - OR - Gallon - One yr. graft - 9/18

88/0544 - *Picea meyeri* - Buchholz & Buchholz - OR - Gallon - One yr. graft - 9/18

88/0545 - *Picea montigena* - Buchholz & Buchholz - OR - Gallon - 9/18

88/0546 - *Picea glauca* 'Pixie' - Buchholz & Buchholz - OR - One yr. graft - 9/18

88/0547 - *Cryptomeria japonica* 'Black Dragon' - Buchholz & Buchholz - OR - 3" - 9/18

88/0548 - *Chamaecyparis pisifera* 'Lemon Thread' - Buchholz & Buchholz - OR - 3" - 9/18

88/0549 - *Pinus kwangtungensis* - Buchholz & Buchholz - OR - Gallon - 9/18

88/0550 - *Thuja koreana* 'Glauc Prostrata' - Buchholz & Buchholz - OR - Gallon - 9/18

88/0551 - *Abelia* X 'Edward Goucher' - Monrovia Nursery - Azusa, CA - One Gallon - 9/22

88/0552 - *Acer rubrum* 'V. J. Drake' (PP3542) - Monrovia Nursery - Azusa, CA - Seven Gallon - 9/22

88/0553 - *Agapanthus africanus* 'Queen Anne' - Monrovia Nursery - Azusa, CA - One Gallon - 9/22

88/0554 - *Cupressus sempervirens* 'Swane's Golden' (PP3839) - Monrovia - Azusa, CA - Five Gallon - 9/22

88/0555 - *Dodonaea viscosa* 'Purpurea' - Monrovia Nursery - Azusa, CA - One Gallon - 9/22

88/0556 - *Juniperus virginiana* 'Idyllwild' - Monrovia Nursery - Azusa, CA - One Gallon - 9/22

88/0557 - *Magnolia grandiflora* 'Timeless Beauty' - Monrovia Nursery - Azusa, CA - Five Gallon - 9/22

88/0558 - *Photinia* Ind Princess' (TM P5237) - Monrovia Nursery - Azusa, CA - Five Gallon - 9/22

88/0559 - *Pinus thunbergi* 'Majestic Beauty' (TM P5078) - Monrovia Nursery - Azusa, CA - Two Gallon - 9/22

88/0560 - *Pittosporum rhombifolium* - Monrovia Nursery - Azusa, CA - Five Gallon - 9/22

88/0561 - *Prunus carolinana* 'Bright N'Tight' - Monrovia Nursery - Azusa, CA - One Gallon - 9/22

88/0562 - *Raphiolepis* 'Charisma' (TM PP5212) - Monrovia Nursery - Azusa, CA - Two Gallon - 9/22

88/0563 - *Raphiolepis* 'Enchantress' - Monrovia Nursery - Azusa, CA - Two Gallon - 9/22

88/0564 - *Raphiolepis* 'Indian Princess' (TM PP5862) - Monrovia Nursery - Azusa, CA - Two Gallon - 9/22

88/0565 - *Raphiolepis* 'Spring Rapture' (TM PP5215) - Monrovia Nursery - Azusa, CA - Two Gallon - 9/22

88/0566 - Raphiolepis 'White Enchantress' (TM) - Monrovia Nursery - Azusa, CA - Two Gallon - 9/22

88/0567 - Syringa vulgaris 'Lavender Lady' (PP1238) - Monrovia Nursery - Azusa, CA - One Gallon - 9/22

88/0568 - Cotoneaster 'Moon Creeper' - Turtle Creek Nursery - Mooresville, NC - Quart - 9/24

88/0569 - Ternstroemia gymnanthera 'Golden Seedling' - Turtle Creek Nursery - Mooresville, NC - 5 gal - 9/24

88/0570 - Cytisus scoparius 'Carla' - Flora Knoll Farms - Hendersonville, NC - Gallon - 9/25

88/0571 - Cytisus scoparius 'Red Favorite' - Flora Knoll Farms - Hendersonville, NC - Gallon - 9/25

88/0572 - Cornus florida 'First Lady - Golden Mutant' - Israel & Sons Nursery - Asheville, NC - 5 gallon - 9/25

88/0573 - Hibiscus Unk. Sp. (red foliated) - Israel & Sons Nursery - Asheville, NC - 1 gallon - 9/25

88/0574 - Agapanthus 'Bressingham Blue' - Rich Hartlage (Wayside) - Raleigh, NC - Division - 9/26

88/0575 - Abies X bornmuellerana - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0576 - Abies coahuilensis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0577 - Abies nordmanniana - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0578 - Abies religiosa - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0579 - Abies vejari - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0580 - Aristolochia durior - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0581 - Baccharis pilularis 'Twin Peaks' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0582 - Berberis thunbergii 'Crimson Velvet' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0583 - Buddleia davidii 'Burgundy' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0584 - Buddleia davidii 'Pink Charming' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0585 - Buddleia davidii nanhoensis 'Indigo' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0586 - Buddleia globosa - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0587 - Buddleia X weyeriana 'Sungold' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0588 - Callistemon linearis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0589 - Callistemon salignus - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0590 - Callitris oblonga - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0591 - Chaenomeles japonica 'Pygmea' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0592 - Cornus canadensis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0593 - Cupressus torulosa - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0594 - Delosperma cooperi - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0595 - Eucalyptus archeri - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0596 - Eucalyptus coccifera - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0597 - Eucalyptus cordata - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0598 - Eucalyptus glaucescens - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0599 - Eucalyptus gunnii - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0600 - Eucalyptus neglecta - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0601 - Eucalyptus nicholii - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0602 - Eucalyptus niphophila - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0603 - Eucalyptus nova anglica - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0604 - Eucalyptus parvifolia - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0605 - Eucalyptus perriniana - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0606 - Eucalyptus stellulata - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0607 - Eucalyptus subcrenulata - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0608 - Eucalyptus urnigera - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0609 - Euonymus fortunei 'Greenlane' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0610 - Forsythia 'Northern Sun' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0611 - Heteromeles arbutifolia - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0612 - Kalmia latifolia 'Heart of Fire' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0613 - Kalmia latifolia 'Pink Star' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0614 - Mahonia aquifolium - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0615 - Mahonia aquifolium 'Mayhan' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0616 - Mahonia aquifolium 'Compacta' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0617 - Myrica hartwegii - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0618 - Myrica pensylvanica - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0619 - Pinus durangensis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0620 - Pinus greggii - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0621 - Pinus johannis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0622 - Pinus koraiensis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0623 - Pinus maximartinezii - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0624 - Pinus pinceana - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0625 - Piptanthus nepalensis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0626 - Pyracantha coccinea 'Fiery Cascade' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0627 - Salix alba 'Vitellina' - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0628 - Salix exigua - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0629 - Sophora mollis - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0630 - Sorbus X arnoldiana - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0631 - Sorbus aria - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0632 - Sorbus forestii - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0633 - Xanthoceras sorbifolia - ForestFarm Nursery - Williams, OR - Liner - 9/28

88/0634 - Abies koreana 'Prostrate Beauty' - Iseli Nursery - Boring, OR - 3 Gallon/2' - 9/29

88/0635 - Cedrus brevifolia 'Bergman' - Iseli Nursery - Boring, OR - Liner/8" - 9/29

88/0636 - Cedrus deodara 'Deepcove' - Iseli Nursery - Boring, OR - 3 Gallon/3' - 9/29

88/0637 - Cedrus deodara 'Sanders Blue' - Iseli Nursery - Boring, OR - 3 Gallon/4' - 9/29

88/0638 - Chamaecyparis obtusa 'Meroke Twin' - Iseli Nursery - Boring, OR - Liner/4" - 9/29

88/0639 - Chamaecyparis pisifera 'Golden Pin Cushion' - Iseli Nursery - Boring, OR - Liner/3" - 9/29

88/0640 - Chamaecyparis pisifera 'Plumosa Compressa' - Iseli Nursery - Boring, OR - Liner/4" - 9/29

88/0641 - Cryptomeria japonica 'Biriodo Sugi' - Iseli Nursery - Boring, OR - 3 gallon/15" - 9/29

88/0642 - Picea abies 'Acrocona' - Iseli Nursery - Boring, OR - Liner/5" - 9/29

88/0643 - Picea abies 'Pygmaea' - Iseli Nursery - Boring, OR - Liner/5" - 9/29

88/0644 - Picea pungens 'Emerald Cushion' - Iseli Nursery - Boring, OR - 3 gallon/8" - 9/29

88/0645 - Picea pungens 'Procumbens' - Iseli Nursery - Boring, OR - Liner/8" - 9/29

88/0646 - Tsuga canadensis 'Albospica' - Iseli Nursery - Boring, OR - Liner/1' - 9/29

88/0647 - Tsuga diversifolia - Iseli Nursery - Boring, OR - Liner/4" - 9/29

88/0648 - Vitex heterophylla 'Montrose Nursery Selection' - Montrose Nursery - Hillsborough, NC - Qt. - 10/2

88/0649 - Cotoneaster dammeri 'Eichholz' - Monrovia Nursery - Azusa, CA - Five gallon - 10/04

88/0650 - Cotoneaster hybrid 'Hessei' - Monrovia Nursery - Azusa, CA - One gallon - 10/04

88/0651 - Cotoneaster X 'Shangri-La' (TM) - Monrovia Nursery - Azusa, CA - One gallon - 10/04

88/0652 - Hypericum frondosum 'Sunburst' - Monrovia Nursery - Azusa, CA - One gallon - 10/04

88/0653 - Juniperus horizontalis 'Huntington Blue' - Monrovia Nursery - Azusa, CA - Two gallon - 10/04

88/0654 - Juniperus scopulorum 'Blue Creeper' (TM PP5084) - Monrovia - Azusa, CA - Two gallon - 10/04

88/0655 - Juniperus virginiana 'Silver Spreader' (TM) - Monrovia Nursery - Azusa, CA - One gallon - 10/04

88/0656 - Pieris japonica 'Temple Bells' - Monrovia Nursery - Azusa, CA - Two gallon - 10/04

88/0657 - Sequoia sempervirens 'Soquel' - Monrovia Nursery - Azusa, CA - Five gallon - 10/04

88/0658 - Sorbus hupehensis 'Coral Fire' - Monrovia Nursery - Azusa, CA - Seven gallon - 10/04

88/0659 - Syringa vulgaris 'Blue Skies' (TM PPAF) - Monrovia Nursery - Azusa, CA - Five gallon - 10/04

88/0660 - Syringa vulgaris 'Angel White' - Monrovia Nursery - Azusa, CA - One gallon - 10/04

88/0661 - Weigela florida 'Minuet' - Monrovia Nursery - Azusa, CA - One gallon - 10/04

88/0662 - Weigela florida 'Red Prince' - Monrovia Nursery - Azusa, CA - Five gallon - 10/04

88/0663 - Magnolia grandiflora 'Brown Velvet' - Taylor's Nursery - Raleigh, NC - Five gallon - 10/04

88/0664 - Camellia sasanqua 'Cleopatra' - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0665 - Camellia sasanqua 'Hiryu' - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0666 - Camellia sasanqua 'Setsugeka' - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0667 - Camellia japonica 'Prof. Charles Sargent' - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0668 - Camellia japonica 'White By the Gate' - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0669 - Camellia japonica 'Debutante' - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0670 - Cornus kousa 'National' - Taylor's Nursery - Raleigh, NC - Bushel/4' - 10/04

88/0671 - Cornus florida 'Cherokee Sunset' - Taylor's Nursery - Raleigh, NC - Bushel/4' - 10/04

88/0672 - Cornus florida 'Cherokee Daybreak' - Taylor's Nursery - Raleigh, NC - Bushel/4' - 10/04

88/0673 - Chamaecyparis pisifera 'Filifera Nana Aurea' - Taylor's Nursery - Raleigh, NC - Half-Bushel - 10/04

88/0674 - Ilex vomitoria 'Straughns Dwarf' - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0675 - Fothergilla gardenii - Taylor's Nursery - Raleigh, NC - Three gallon - 10/04

88/0676 - Aesculus parviflora serotina - Woodlander's Nursery - Aiken, SC - One gallon/15" - 10/20

88/0677 - Aesculus pavia humilis - Woodlander's Nursery - Aiken, SC - Half gallon/18" - 10/20

88/0678 - Aesculus turbinata - Woodlander's Nursery - Aiken, SC - One gallon/1' - 10/20

88/0679 - Baptisia arachnifera - Woodlander's Nursery - Aiken, SC - One gallon(HP) - 10/20

88/0680 - Baptisia leucantha - Woodlander's Nursery - Aiken, SC - One gallon (HP) - 10/20

88/0681 - Baptisia megacarpa - Woodlander's Nursery - Aiken, SC - Qt.(HP) - 10/20

88/0682 - Baptisia minor - Woodlander's Nursery - Aiken, SC - Qt(HP) - 10/20

88/0683 - Baptisia sphaerocarpa - Woodlander's Nursery - Aiken, SC - Half gallon(HP) - 10/20

88/0684 - Betula uber - Woodlander's Nursery - Aiken, SC - One gallon/4' - 10/20

88/0685 - Callistemon salignum 'Viridiflora' - Woodlander's Nursery - Aiken, SC - Half gallon/15" - 10/20

88/0686 - Cleyera fortunei 'Variegata' - Woodlander's Nursery - Aiken, SC - 4" Pot/1' - 10/20

88/0687 - Cleyera japonica 'Hosoba Fukurin' - Woodlander's Nursery - Aiken, SC - 4" Pot/10" - 10/20

88/0688 - Daphniphyllum teysmanii - Woodlander's Nursery - Aiken, SC - 4" Pot/2' - 10/20

88/0689 - Dichotomanthes tristanicarpa - Woodlander's Nursery - Aiken, SC - One gallon/18" - 10/20

88/0690 - Gelsemium sempervirens 'Pale Yellow Selection' - Woodlander's Nursery - Aiken, SC - Qt. - 10/20

88/0691 - Harperocallis flava - Woodlander's Nursery - Aiken, SC - 3" Pot(HB) - 10/20

88/0692 - Illicium mexicanum - Woodlander's Nursery - Aiken, SC - Half gallon/2' - 10/20

88/0693 - Juniperus pinchoti - Woodlander's Nursery - Aiken, SC - Qt/1' - 10/20

88/0694 - Juniperus virginiana 'Hancock Co., GA Weeping Selection' - Woodlander's - Aiken, SC - Qt. - 10/20

88/0695 - Juniperus virginiana 'Oglethorpe Co., GA Weeping Select.' - Woodlander's - Aiken, SC - Qt. - 10/20

88/0696 - Lycium carolinianum - Woodlander's Nursery - Aiken, SC - Half gallon/3' - 10/20

88/0697 - Nyssa sylvatica biflora - Woodlander's Nursery - Aiken, SC - Qt./2' - 10/20

88/0698 - Osmanthus megacarpa - Woodlander's Nursery - Aiken, SC - Qt/1' - 10/20

88/0699 - Pinckneya bracteata 'Bostwick' (White clone) - Woodlander's - Aiken, SC - Half gallon/1' - 10/20

88/0700 - Sageretia minutiflora - Woodlander's Nursery - Aiken, SC - 3" Pot/8" - 10/20

88/0701 - Tutchera virgata - Woodlander's Nursery - Aiken, SC - One gallon/3' - 10/20

88/0702 - Wisteria macrostachya - Woodlander's Nursery - Aiken, SC - Qt. - 10/20

88/0703 - Wisteria sinensis 'Plena' - Woodlander's Nursery - Aiken, SC - Half gallon - 10/20

88/0704 - Yucca pallida - Woodlander's Nursery - Aiken, SC - One gallon - 10/20

88/0705 - Yucca treculeana - Woodlander's Nursery - Aiken, SC - Gallon - 10/20

88/0706 - Penstemon 'Garnett' - Atlanta Botanical Garden - Atlanta, GA - Qt.(HP) - 10/21

88/0707 - Buxus balearica - Atlanta Botanical Garden (From St. Louis Bot. Garden) - Atlanta, GA - Qt./2" - 10/21

88/0708 - Verbena tenusecta 'Alba' - Atlanta Botanical Garden - Atlanta, GA - Cuttings - 10/21

88/0709 - Acer ginnala 'Compacta' - Dr. Michael Dirr/U.GA - Athens, GA - Qt./2' - 10/22

88/0710 - Amelanchier arborea 'Autumn Scarlet' - Dr. Michael Dirr/U.GA - Athens, GA - One gallon/2' - 10/21

88/0711- Chimonanthus retuses 'Shadow Clone' - Dr. Michael Dirr/U.GA - Athens, GA - Rtd. cuts (3) - 10/21

88/0712 - Fothergilla gardenii 'Mt. Airy Clone' - Dr. Michael Dirr/U.GA - Athens, GA - Rootd cuttings (16) - 10/21

88/0713 - Hydrangea 'Anabelle' - Dr. Michael Dirr/U.GA - Athens, GA - One gallon/18" (3) - 10/21

88/0714- Hydrangea quercifolia 'Alice' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (2) - 10/21

88/0715 - Hydrangea quercifolia 'Allison' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (2) - 10/21

88/0716 - Hydrangea quercifolia 'Snowflake' - Dr. Michael Dirr/U.GA - Athens, GA - One gallon/18" - 10/21

88/0717 - Ilex verticillata 'Dutch Clone' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (3) - 10/21

88/0718 - *Ilex verticillata* 'Winter Gold' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cutting - 10/21

88/0719 - *Quercus* (Bracken's Selection - *palustris* X *phellos*?) - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (3) - 10/21

88/0720 - *Silene polypetala* - Dr. Michael Dirr/U.GA - Athens, GA - 3" pots (3) - 10/21

88/0721 - *Silene polypetala* X *virginiana* - Dr. Michael Dirr/U.GA - Athens, GA - 3" pots (3) - 10/21

88/0722 - *Ulmus parvifolia* 'Barbour Clone' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (12) - 10/21

88/0723 - *Ulmus parvifolia* 'Globe' - Dr. Michael Dirr/ U.GA - Athens, GA - Rooted cuttings (3) - 10/21

88/0724 - *Ulmus parvifolia* 'Vase' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (3) - 10/21

88/0725 - *Ulmus parvifolia* '#380' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (2) - 10/21

88/0726- *Viburnum dilatatum* 'Mt. Airy' - Dr. Michael Dirr/U.GA - Athens, GA - Rooted cuttings (2) - 10/21

88/0727 - *Acacia tortuosa* - South Texas (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/08)

88/0728 - *Bauhinia macranthera* - Chipinque, Mexico, 3,000' (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/08)

88/0729 - *Camarostaphylas* sp. - Mexico, 5,200' (John Fairey, Waller, TX) - Seed - 11/03

88/0730 - *Crataegus baroussana* - San Luis Potosi, Mexico, 8,200' (John Fairey, Waller, TX) - Seed - 11/03

88/0731 - *Litsea* sp. - Chipinque (west of Monterrey), Mexico, 4,000' (John Fairey, Waller, TX) - Seed - 11/03

88/0732 - *Manfreda* sp. - Chipinque, Mexico, 2,000' 8/88 (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/23)

88/0733 - *Persea* sp. - Chipinque, Mexico, 3,000' 10/24 (John Fairey, Waller, TX) -Seed - 11/03

88/0734 - *Pinus pinceana* - Saltillo, Mexico 6,800' 10/23 (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/23)

88/0735 - *Pithecellobium flexicaule* - Laredo, TX (John Fairey, Waller, TX) -Seed - 11/03 (Germ. & Pot - 11/23)

88/0736 - *Quercus cambyi* - Chipinque, Monterrey, Mexico, 3,400', 10/24 (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/23)

88/0737 - *Quercus cambyi* - Chipinque Park, Monterrey, Mexico, 3,400' 10/24 (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/23)

88/0738 - *Quercus cambyi* - Chipinque, Mexico, 2,500' 10/24 (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/23)

88/0739 - *Quercus risophylla* - Sierra de Madra Mt, Mexico, 3,600' (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/28)

88/0740 - *Quercus risophylla* - South of Monterrey, Mexico, 1,600', 10/24 (John Fairey, Waller, TX) -Seed - 11/03 (Germ. & Potted 11/28)

88/0741 - *Quercus* sp. - San Louis Potosi, Mexico, 7,000', 10/23 (John Fairey, Waller, TX) - Seed - 11/03 (Germ. & Potted 11/28)

88/0742 - *Styrax* sp.? - Chipinque, Mexico, 8/88 (John Fairey, Waller, TX) - Seed - 11/03

88/0743 - *Calycanthus floridus* 'Athens' - Cedar Lane Farm, Inc. - Madison, GA - One gallon - 11/06

88/0744 - *Lonicera sempervirens* 'Cedar Lane Select Form' - Cedar Lane Farm, Inc. - Madison, GA - Gal- 11/06

88/0745 - *Lonicera sempervirens* 'Sulphurea' - Cedar Lane Farm, Inc. - Madison, GA - One gallon - 11/06

88/0746 - *Magnolia grandiflora* 'Main Street' - Cedar Lane Farm, Inc. - Madison, GA - One gallon - 11/06

88/0747 - *Magnolia grandiflora* 'Symmes Select' - Cedar Lane Farm, Inc. - Madison, GA - One gallon - 11/06

88/0748 - *Rhododendron canescens* - Cedar Lane Farm, Inc. - Madison, GA - One Qt. - 11/06

88/0749 - *Trachelospermum jasminoides* 'Madison' - Cedar Lane Farm, Inc. - Madison, GA - One gallon - 11/06

88/0750 - *Abies squamata* - ? - Seed Germ. - 11/08

88/0751 - *Acer punbipalmatum* - ? - Seed Germ. - 11/08

88/0752 - *Alnus crenastogyne* - Holden Arb - Mentor, OH - Seed Germ. - 11/08

88/0753 - *Alnus hirsuta* - Holden Arb - Mentor, OH - Seed Germ. - 11/08

88/0754 - *Alnus japonica* - Holden Arb - Mentor, OH - Seed Germ. - 11/08

88/0755 - *Asclepias sulivantii* - ? - Seed Germ. - 11/08

88/0756 - *Camassia leichtlinii* var. *suksdorfii* - ? - Seed Germ. - 11/08

88/0757 - *Camassia quamash* - ? - Seed Germ. - 11/08

88/0758 - *Chimonanthus zhejiangensis* - Shanghai Bot. Garden - China - Seed Germ. - 11/08

88/0759 - *Dalbergia hupeana* - Shanghai Bot Garden - China - Seed Germ. - 11/08

88/0760 - *Erythronium oreganum* - ? - Seed Germ. - 11/08

88/0761 - *Eucommia ulmoides* - ? - Seed Germ. - 11/08

88/0762 - *Fokienia hodginsii* - ? - Seed Germ. - 11/08

88/0763 - *Fritillaria lanceolata* - ? - Seed Germ. - 11/08

88/0764 - *Hemerocallis dumorteri* - ? - Seed Germ. - 11/08

88/0765 - *Hemerocallis minor* - ? - Seed Germ. - 11/08

88/0766 - *Lotus corniculatus* - ? - Seed Germ. - 11/08

88/0767 - *Philadelphus brachybotrys* var. *laxiflorus* - ? - Seed Germ. - 11/08

88/0768 - *Picea purpurea* - ? - Seed Germ. - 11/08

88/0769 - *Pinus armandi* - ? - Seed Germ. - 11/08

88/0770 - *Pinus yunnanensis* - ? - Seed Germ. - 11/08

88/0771 - *Sorbus aucararia* - ? - Seed Germ. - 11/08

88/0772 - *Syringa amurensis* var. *japonica* - ? - Seed Germ. - 11/08

88/0773 - *Syringa josikae* - ? - Seed Germ. - 11/08

88/0774 - *Syringa swegiwrowii* - ? - Seed Germ. - 11/08

88/0775 - *Adonis aestivalis* - ? - Seed Germ. - 11/23

88/0776 - *Baptisia* sp. ? - NCSU Arb. - Raleigh, NC - 11/23

88/0777 - *Calycanthus floridus* - ? - Seed Germ. - 11/23

88/0778 - *Cercis griffithii* - ? - Seed Germ. - 11/23

88/0779 - *Cercis siliquastrum* #134 - Czech - Seed Germ. - 11/23

88/0780 - *Cercis siliquastrum* - Olympic Site - Olympia, Greece - Seed Germ. - 11/23

88/0781 - *Cercis siliquastrum* 'White Seedling' - Coll. at Greece/Turkey Border - Seed Germ. - 11/23

88/0782 - *Cercis siliquastrum* v. *siliquastrum* - Lisbon Bot Garden - Lisbon, Spain - Seed Germ. - 11/23

88/0783 - *Cornus nuttallii* - ? - Seed Germ. - 11/23

88/0784 - *Cornus wilsoniana* #345 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0785 - *Cotinus coggygria* - Holden Bot Garden - Mentor, OH - Seed Germ. - 11/23

88/0786 - *Cyclobalanopsis glauca* #40 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0787 - *Cytisus australis* - ? - Seed Germ. - 11/23

88/0788 - *Fraxinus xanthifolia* - ? - Seed Germ. - 11/23

88/0789 - ? *Fxiolirion tataricum* - ? - Seed Germ. - 11/23

88/0790 - *Gentiana calycosa* - ? Seed Germ. - 11/23

88/0791 - *Hosta kikutii* - ? - Seed Germ. - 11/23

88/0792 - *Liriodendron chinensis* #108 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0793 - *Liriodendron chinensis* #89 - Lushan Bot Garden - Lushan, China - Seed Germ. - 11/23

88/0794 - *Liriope platyphylla* #472 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0795 - *Liriope spicata* #473 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0796 - *Magnolia denudata* #111 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0797 - *Manglietia yunnanensis* #116 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0798 - *Mortonia greggii* - ? - Seed Germ. - 11/23

88/0799 - *Myrica cerifera* v. *pumila* - NC Bot Garden - Chapel Hill, NC - Seed Germ. - 11/23

88/0800 - *Nyssa sinensis* #330 - Hangzhou Bot Garden - Hangzhou, China - Seed Germ. - 11/23

88/0801 - *Roscoea alpina* - ? - Seed Germ. - 11/23

88/0802 - *Roscoea cautleoides* - ? - Seed Germ. - 11/23

88/0803 - *Roscoea purpurea* - ? - Seed Germ. - 11/23

88/0804 - *Securnega suffruticosa* #281 - Czech - 11/23

88/0805 - *Taxodium ascendens* - ? - Seed Germ. - 11/23

88/0806 - *Thermopsis fabacea* - ? - Seed Germ. - 11/23

88/0807 - *Akebia quinata* 'Japanese Variegata' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0808 - *Ardisia pusilla* (villosa) - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0809 - *Cleyera japonica* BSG 275 - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0810 - *Colletia cruciata* - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0811 - *Cuphea hyssopifolia* 'Alba' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0812 - *Erysinium linifolium* 'Variegatum' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0813 - *Forsythia* 'Lynwood Gold Sport - Susan Gruninger' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0814 - *Fuchsia mangellanica* 'Papoose' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0815 - *Juniperus X media* 'Daub's Frosted' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0816 - *Lonicera syringantha* - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0817 - *Ophiopogon jaburan* 'Variegatus' - Glasshouse Works - Stewart, OH - Division - 11/24

88/0818 - *Punica granatum* 'Gosai-Ryu' BSG 1476 - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0819 - *Punica granatum* 'Kanoko Suisho' BSG - Glasshouse Works - Stewart, OH - 5" - 11/24

88/0820 - *Punica granatum* 'Nejikan' BSG 1968 - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0821 - *Punica granatum* 'Nochi-Shib' BSG 1471 - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0822 - *Punica granatum* 'Sarasa Botan' BSG 1470 - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0823 - *Punica granatum* 'Toyosho' BSG - Glasshouse Works - Stewart, OH - 1' - 11/24

88/0824 - *Serissa foetida* 'Helm-Puterbaugh' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0825 - *Serissa foetida* 'Kioyta' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0826 - *Serissa foetida* 'Kowloon' - Glasshouse Works - Stewart, OH - Cuttings - 11/24

88/0827 - *Thuja occidentalis* 'Wansdyke Silver' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0828 - *Weigela* 'Argentea Marginata Variegata' - Glasshouse Works - Stewart, OH - 3" RC - 11/24

88/0829 - *Zelkova serrata* 'Furi Keyaki' - Glasshouse Works - Stewart, OH - Cuttings - 11/24

88/0830 - *Acer ginnala* 'Durand Dwarf' - ? - 1 Gal/12" - 11/24

88/0831 - *Andrachne colchica* - ? - 1 Gal/12" - 11/24

88/0832 - *Cornus pumila* - ? - 1 Gal/12" - 11/24

88/0833 - *Berberis hookeri* - Gossler Farms - Springfield, OR - 15"/1 Gal - 11/25

88/0834 - *Daphne mezereum* 'Album' - Gossler Farms - Springfield, OR - 6"/1 Gal - 11/25

88/0835 - *Disanthus cercidifolius* - Gossler Farms - Springfield, OR - 18"/1 Gal - 11/25

88/0836 - *Forsythia* 'Mini Gold' - Gossler Farms - Springfield, OR - 15"/1 Gal - 11/25

88/0837 - *Hamamelis X intermedia* 'Bonny Brook' - Gossler Farms - Springfield, OR - 1 Gal/12" - 11/25

88/0838 - *Hamamelis X intermedia* 'Sunburst' - Gossler Farms - Springfield, OR - 1 Gal/12" - 11/25

88/0839 - *Hamamelis X intermedia* 'Hiltenbury' - Gossler Farms - Springfield, OR - 1 Gal/12" - 11/25

88/0840 - *Hamamelis vernalis* 'Christmas Cheer' - Gossler Farms - Springfield, OR - 1 Gal/12" - 11/25

88/0841 - *Magnolia grandiflora* 'Pioneer' - Gossler Farms - Springfield, OR - 1 Gal/12" - 11/25

88/0842 - *Magnolia X* 'Marjory Gossler' - Gossler Farms - Springfield, OR - 1 Gal/12" - 11/25

88/0843 - *Nandina domestica* 'Charmein' - Gossler Farms - Springfield, OR - 1 Gal/12" - 11/25

88/0844 - *Schizostylis* 'Oregon Sunset' - Gossler Farms - Springfield, OR - Divisions - 11/25

88/0845 - *Stachyurus praecox* 'Magpie' - Gossler Farms - Springfield, OR - 2'/2 Gal - 11/25

88/0846 - *Magnolia X* 'Garnet' - Otto Eisenhut - Switzerland - 1' BR - 11/27

88/0847 - *Magnolia X soulangiana* 'Burgundy' - Otto Eisenhut - Switzerland - 1' BR - 11/27

88/0848 - *Ilex vomitoria* 'Yellow Berry' - Louisiana Nursery - Opelousas, LA - 4" RC - 11/29

88/0849 - *Illicium mexicanum* - Louisiana Nursery - Opelousas, LA - 10"/Qt - 11/29

88/0850 - *Magnolia grandiflora* 'Harold Poole' - Louisiana Nursery - Opelousas, LA - 18"/Gallon - 11/29

88/0851 - *Magnolia grandiflora* 'Orbit' - Louisiana Nursery - Opelousas, LA - 3" RC - 11/29

88/0852 - *Magnolia X* 'Freeman' - Louisiana Nursery - Opelousas, LA - 2'/Gallon - 11/29

88/0853 - *Pinckneya pubens* 'Carpenter Road Pink' - Louisiana Nursery - Opelousas, LA - 6"/Qt - 11/29

88/0854 - *Aquilegia akitensis* - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0855 - *Arenaria balearica* - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0856 - *Bolax glaberrima* 'Nana' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0857 - *Cotoneaster* 'Himalaya Clone' - Ed Wood/Bonsai Village - Wilsonville, OR - 3" Pot - 11/30

88/0858 - *Cotoneaster* 'Teulon Porter' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0859 - *Cryptomeria japonica* 'Ryokyu Gyokyu' - Ed Wood/Bonsai Village - Wilsonville, OR - 3" Pot - 11/30

88/0860 - *Cryptomeria japonica* 'Tansu Broom' - Ed Wood/Bonsai Village - Wilsonville, OR - 3" Pot - 11/30

88/0861 - *Dianthus simulans* - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0862 - *Hysela reniformis* - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0863 - *Iberis sayana* - Ed Wood/Bonsai Village - Wilsonville, OR - 3" Pot - 11/30

88/0864 - *Iris setosa* 'Dwarf' - Ed Wood/Bonsai Village - Wilsonville, OR - Division - 11/30

88/0865 - *Laurentia fluvialis* - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0866 - *Picea pungens* 'Jean Iseli' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" - 11/30

88/0867 - *Saxifraga umbrosa* 'Primuloides' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0868 - *Scleranthus uniflorus* - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0869 - *Sisyrinchium angustifolium* 'Alba' - Ed Wood/Bonsai Village - Wilsonville, OR - Division - 11/30

88/0870 - *Sisyrinchium bellum* - Ed Wood/Bonsai Village - Wilsonville, OR - Division - 11/30

88/0871 - *Sisyrinchium macounii* 'Alba' - Ed Wood/Bonsai Village - Wilsonville, OR - Division - 11/30

88/0872 - *Tanacetum densum* 'Amani' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0873 - *Thymus* 'Elfin' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0874 - *Thymus serpyllum* 'Minor' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0875 - *Tsuga canadensis* 'Aurora #4' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0876 - *Tsuga canadensis* 'Canby #5' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0877 - *Tsuga canadensis* 'Jean Iseli #3' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0878 - *Ulmus parvifolia* 'Corky Bark' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0879 - *Ulmus parvifolia* 'Hokkaido' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0880 - *Ulmus parvifolia* 'Seiju' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0881 - *Ulmus parvifolia* 'Yatsu Busa' - Ed Wood/Bonsai Village - Wilsonville, OR - 2" Pot - 11/30

88/0882 - *Narcissus canaliculatus* - DeHertogh Research - Raleigh, NC - 20 Bulbs - 12/01

88/0883 - *Narcissus cyclamineus* - DeHertogh Research - Raleigh, NC - 20 Bulbs - 12/01

88/0884 - *Narcissus lobularis* - DeHertogh Research - Raleigh, NC - 20 Bulbs - 12/01

88/0885 - *Narcissus obvallaris* - DeHertogh Research - Raleigh, NC - 100 Bulbs - 12/01

88/0886 - *Narcissus* 'Acropolis' - DeHertogh Research - Raleigh, NC - 25 Bulbs - 12/01

88/0887 - *Narcissus* 'Ambergate' - DeHertogh Research - Raleigh, NC - 30 Bulbs - 12/01

88/0888 - *Narcissus* 'Baby Moon' - DeHertogh Research - Raleigh, NC - 150 Bulbs - 12/01

88/0889 - *Narcissus* 'Barrett Browning' - DeHertogh Research - Raleigh, NC - 150 Bulbs - 12/01

88/0890 - *Narcissus* 'Bridal Crown' - DeHertogh Research - Raleigh, NC - 150 Bulbs - 12/01

88/0891 - *Narcissus* 'Cyclops' - DeHertogh Research - Raleigh, NC - 30 Bulbs - 12/01

88/0892 - *Narcissus* 'Dick Wilden' - DeHertogh Research - Raleigh, NC - Bulbs - 12/01

88/0893 - *Narcissus* 'Duet' - DeHertogh Research - Raleigh, NC - 100 Bulbs - 12/01

88/0894 - *Narcissus* 'Flower Record' - DeHertogh Research - Raleigh, NC - 20 Bulbs - 12/01

88/0895 - *Narcissus* 'Frileuse' - DeHertogh Research - Raleigh, NC - 150 Bulbs - 12/01

88/0896 - *Narcissus* 'Garden Princess' - DeHertogh Research - Raleigh, NC - 150 Bulbs - 12/01

88/0897 - *Narcissus* 'Hawera' - DeHertogh Research - Raleigh, NC - 70 Bulbs - 12/01

88/0898 - *Narcissus* 'Johann Strauss' - DeHertogh Research - Raleigh, NC - 350 Bulbs - 12/01

88/0899 - *Narcissus* 'Las Vegas' - DeHertogh Research - Raleigh, NC - 150 Bulbs - 12/01

88/0900 - *Narcissus* 'Little Beauty' - DeHertogh Research - Raleigh, NC - 10 Bulbs - 12/01

88/0901 - *Narcissus* 'Karelia' - DeHertogh Research - Raleigh, NC - 200 Bulbs - 12/01

88/0902 - *Narcissus* 'Osiris' - DeHertogh Research - Raleigh, NC - 30 Bulbs - 12/01

88/0903 - *Narcissus* 'Pasternak' - DeHertogh Research - Raleigh, NC - 30 Bulbs - 12/01

88/0904 - *Narcissus* 'Petit Four' - DeHertogh Research - Raleigh, NC - 120 Bulbs - 12/01

88/0905 - *Narcissus* 'Pink Pride' - DeHertogh Research - Raleigh, NC - 20 Bulbs - 12/01

88/0906 - *Narcissus* 'Pippit' - DeHertogh Research - Raleigh, NC - 400 Bulbs - 12/01

88/0907 - Narcissus 'Prizewinner' - DeHertogh Research - Raleigh, NC - 70 Bulbs - 12/01

88/0908 - Narcissus 'Rafael' - DeHertogh Research - Raleigh, NC - 200 Bulbs - 12/01

88/0909 - Narcissus 'Red Hill' - DeHertogh Research - Raleigh, NC - 30 Bulbs - 12/01

88/0910 - Narcissus 'Spellbinder' - DeHertogh Research - Raleigh, NC - 180 Bulbs - 12/01

88/0911 - Narcissus 'Sundial' - DeHertogh Research - Raleigh, NC - 100 Bulbs - 12/01

88/0912 - Narcissus 'Thalia' - DeHertogh Research - Raleigh, NC - 150 Bulbs - 12/01

88/0913 - Narcissus 'Unique' - DeHertogh Research - Raleigh, NC - 40 Bulbs - 12/01

88/0914 - Paracralium morilimam - DeHertogh Research - Raleigh, NC - 10 Bulbs - 12/01

88/0915 - Praeslans unicum - DeHertogh Research - Raleigh, NC - 10 Bulbs - 12/01

88/0916 - Puschinia libanotica - DeHertogh Research - Raleigh, NC - 10 Bulbs - 12/01

88/0917 - Carya mexicana T4M-26-112088 - 6,000', La Penita, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0918 - Chimaphila sp. T4M-48-112288 - 8,300', ? (John Fairey, Waller, TX) - Seed - 12/05

88/0919 - Cupressus mexicana (arizonica?) T4M-28-112088 - 7,000', San Jose de los Bouguillas, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0920 - Dasyilirion longissimum T4M-50-112288 - 5,800', Dv.Arroya, Mex (J. Fairey,, TX) - Seed - 12/05

88/0921 - Dasyilirion sp. (like texana) T4M-53-112288 - 5,200', Dv. Arroya, Mexico (John Fairey, Waller, Tx) - Seed - 12/05

88/0922 - Decatropis bicolor T4M-24-112188 - 4,200', San Isido Canyon, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0923 - Diospyros palmeri - 1,400' Linaves, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0924 - Fraxinus cuspidata T4M-63-112388 - 4875', Linaves, Mex.(John Fairey, Waller, TX) - Seed - 12/05

88/0925 - Litsea sp. T4M-43-112188 - 7,225' Mt. Potosi, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0926 - Quercus polymorpha T4M-13-112088 - 4,000', Cienga, Mex(John Fairey, Waller, TX) - Seed - 12/05

88/0927 - Quercus sp.? (polymorpha?) T4M-2-111988 - 1,600', Bustmente, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0928 - Quercus sp.? T4M-22-112188 - 4,200', San Isidro, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0929 - Quercus sp.? T4M-12-112088 - 4,000', Cienga, Mexico (John Fairey, Waller, TX) - Seed - 12/05

88/0930 - Rhus copallina var. lanceolata - John Fairey - Waller, TX - Seed - 12/05

88/0931 - Juniperus virginiana 'Tripartia' - Dr. J. Reckin - Werbellin, East Germany - Cuttings - 12/11

88/0932 -Symporicarpos 'White Hedge' - Dr. J. Reckin - Werbellin, East Germany - Rooted Cuttings - 12/11

88/0933 -Thuja plicata 'Aureovariegata' - Dr. J. Reckin - Werbellin, East Germany - 6" liners - 12/11

88/0934 - Weigela 'Gustave Mallet' - Dr. J. Reckin - Werbellin, East Germany - Rooted Cuttings - 12/11

88/0935 - Magnolia X 'Big Pink' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0936 - Magnolia X 'Dark Shadow' - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0937 - Magnolia X 'Darrell Dean' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0938 - Magnolia X 'Deep Purple Dream' - David Ellis - Magnolia Nur. - Chunchula, AL - Liner - Summer 88.

88/0939 - Magnolia X 'Elisa' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0940 - Magnolia X 'Full Eclipse' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0941 - Magnolia X 'JG #21' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0942 - Magnolia X 'Jon Jon' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0943 - Magnolia X 'Mary Nell' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0944 - Magnolia X 'Pink Goblet' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0945 - Magnolia X 'Royal Crown' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0946 - Magnolia X 'Sangeal' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0947 - Magnolia X 'Sweet Sixteen' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0948 - Magnolia X 'Tina Durio' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0949 - Magnolia X 'Todd Gresham' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0950 - Magnolia X 'Todd's 49er' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0951 - Magnolia X 'Winelight' - David Ellis - Magnolia Nursery - Chunchula, AL - Liner - Summer 88.

88/0952 - Fuchsia 'Prosperity' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0953 - Penstemon 'Charles Rudd' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0954 - Forsythia X 'Tremonia' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0955 - Philadelphus 'Galahad' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0956 - Sambucus nigra 'Guincho Purple' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0957 - Forsythia X intermedia 'Spectabilis Variegata' - Richard Hartlage - England collection - Cuttings 88.

88/0958 - Hypericum kouytchense - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0959 - Hypericum X inodorum - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0960 - Hypericum pseudohenryi - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0961 - Hypericum 'Eastlrich Gold' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0962 - Clematis heracleifolia - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0963 - Clematis X Jouiniana praecox - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0964 - Clematis viticella 'Abundance' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0965 - Clematis viticella 'Alba Luxurians' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0966 - Clematis viticella 'Minuet' - Richard Hartlage - England collection - Cuttings - Summer 88.

88/0967 - Clematis viticella 'Purpurea Plena Elegans' - R. Hartlage - England collection - Cuttings - Summer 88.

88/0968 - Hordeum jubatum - Richard Hartlage - England collection - Cuttings - Summer 88.