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The Group for BEARDLESS IRISES of the British Iris Society

(formerly the S.S. & J. Group)

NEWSLETTER NO. 39 - OCTOBER, 1996.



THE GROUP'S OFFICERS:

Chairman: Mr. Ray Bomford, The Hills, Tanhouse Lane, Beoley, REDDITCH, Worcs, B98 9AB.
Vice Chairman: Mrs. Hilda Goodwin, Corner Cottage, School Road, GREAT BARTON, Bury St. Edmunds, Suffolk, IP31 2RT.
Secretary: Mrs. Anne Blanco White, 72, South Hill Park, London, NW3 2SN.
Treasurer & Membership Secretary: Mr. Philip Allery, 199 Walsall Rd, ALDRIDGE, Nr. Walsall, West Mids. WS9 OBE
Newsletter Editor: Ms. Sue Pierce, 89 High St. Measham, SWADLINCOTE, Derbys. DE12 7HZ
Seed Distribution Officer: Mr. Gary Lewis, Ranclu Lodge, Stone St. WESTENHANGER, Kent. CT21 4HS.
Librarian: Mrs. Jennifer Hewitt, Haygarth, Cleeton St. Mary, CLEOBURY MORTIMER, Kidderminster, Worcs, DY14 OQU
Honorary Auditor: Mrs. L. Wilkins, 17 Lancaster Avenue, ALDRIDGE, Nr. Walsall, West Midlands. WS9 8RE.

REGIONAL REPRESENTATIVES:

Eastern Area: Mrs. Shirley Ryder, Toadshole Cottage, Old Road, FEERING, Colchester, Essex CO5 9RN.
London Area: Mrs Anne Blanco White. As above.
North Western Area: Mr. Ray Wilson, Dale Head, 100 Blackburn Rd. CHORLEY, Lancs. PR6 8TJ.
Southern Area: Mr. Adrian Whittaker, 'Chestnuts', Hilden Way, LITTLETON, Winchester, Hants. SO22 6QH.
West & Midlands Area: Dr. John Beal, Ashleigh, Barnsley Road, SCAWSBY, Doncaster, DN5 8QE

SPECIALIST HELP:

Japanese Iris Specialist: Mrs Anne Blanco White. As above.
Pacifias Specialist: Mr. Ray Wilson. As above.
Sibirica Specialist: Mrs Jennifer Hewitt. As above.
Spuria Specialist: Mr. Adrian Whittaker. As above.

OVERSEAS CONTACTS:

Japanese: Mrs. Evelyn White, Editor, 'The Review', The Society for Japanese Irises, RFD 2 Box 980, Auburn, ME 04210, USA.
Pacifias: Lewis & Adele Lawyer, Ed. & Sec. -Treas., SPCNI 'Almanac', 4333 Oak Hill Road, Oakland, CA 94605, USA.
Sibiricas: Mrs. J. Hollingworth, Editor, 'Siberian Iris', 120 Sherwood Road, East Williamstown, MI 48895, USA.
Spurias: Carole Speiss, Editor, Spuria Iris Society's 'Newsletter', 6204 N 15th Avenue, Phoenix, AZ 85015, USA.

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THE AIMS AND OBJECTIVES OF THE GROUP:

To foster communication between members in Great Britain and overseas by the exchange of ideas, seeds and plants;
to help newcomers with their interests and problems; and to report on new work in hybridisation.

CHAIRMAN'S REMARKS

I have to confess that I have missed much of the Iris season. In June I was lucky enough to be in S.E. Tibet with a group of botanists and specialist gardeners. I hope that you will not resent the parading of my good fortune. For any plant lover it was an unparalleled experience. We were roughly in the same region from whence Kingdon- Ward in the 1920's and Ludlow and Sherriff in the 1930's and late 1940's collected so many of their finest plants. Whilst those professional plant hunters went by foot with native porters and ponies to carry their tents and provisions we went for quite long periods by Land Rover type vehicles. We did however do quite a lot of walking over passes and the occasional side valley.

Since they took over Tibet in the 1950's the Chinese have widened and adapted many ancient foot tracks. This is to facilitate among other things troop movements into Tibet and the removal of vast quantities of felled timber from Tibet. These roads are still primitive and narrow and often at precipitous heights. They must be quite precarious and fragile especially during and following the monsoon season. No tarmac of course, just clouds of dust. We saw evidence of many past landslides and can only hope that vehicles were not carried away with them.

It was an added privilege to be in the company of world authorities on Rhododendron. Kenneth Cox of Glendoich led the Group and his father Peter came with us. They could recognise Rhododendron species at 500 paces. We probably saw a minimum of 40 different ones. In passing, to anyone who would like to go on such a Botanical Tour (a better term than foreign holiday) but who consider themselves as being too old or unfit, let me assure them that the average age of our 16 members must have been well over 60 - or close to it. The eldest, admittedly an experienced Alpine mountaineer, was 72. As long as you can walk for 12/15 miles, taking your own time, all is well. We all crossed the famous Do Shan La pass. The ancient track was still covered with snow and we trudged through a partial 'white-out' then on to the southern side of what are still part of the Himalayan range. Here we endured three wet nights in tents. It rained or drizzled 90% of the time and absolutely everything was misted up if not continually dripping wet. But we survived and found it an unbelievable area for plants. By all accounts when seed time arrives in early autumn the pass is cut off by deep snow. So it seems that many of these plants will not reach our gardens in volume. In any case I expect they would resent our drier areas; but they would feel at home on the western seaboard.

Compared with the previous year the season was at least 10 days behind, just as it was at home before I left. In 1995 Iris chrysographes was just emerging from the bud. At that time I collected a fair amount of seed from the remnants of the 1994 seed pods. Little bits that had not been blown out or eaten by grazing animals or pests. In contrast I collected no worthwhile seed at all this year. From memory the colour was a pretty uniform dark purplish blue over several sites. Certainly nothing approaching 'Black Knight' appears in the wild.

Now although the germination has been pretty poor from year old seed I have about 20 seedlings now about 1 1/2 " high. It would be nice if someone would like to have 3 or 4 plants to grow in isolation if at all possible to keep the wild plant going. I know that chrysographes is not at all rare but suspect that sibiricas being what they are in many gardens they will have hybridised. Let the Treasurer know if you would like to have some. With a fine netting as used against carrot fly and by hand pollination some keen soul might soon (5- 6 years) have a good population of one of the finest of all Iris species. I hope against hope that someone will have the time and patience to do so. With so much of the garden in disarray, I cannot trust myself to do it properly!

Apart from I. chrysographes and typical I. decora we saw few iris species; at least no others in flower. We did however find what we took to be a 2 1/2' high version of decora. The roots are similarly fleshy and the yellow colour of Eremurus roots. I think that Kenneth Cox will get the botanists in Edinburgh to determine its status. Unfortunately we only saw it once, as is true of so many other plants, and no old seed pods at all.

When I got home of course the garden was in greater chaos than ever. One of the more pleasurable tasks was to prick out some 75 I. spuria hybrid seedlings. The parents flowered while I was away a year before so I have yet to see its quality and colour. I have attempted to grow spurias from BIS seed for several seasons with very indifferent success germination wise. The high germination % this time resulted I am sure from growing home grown pods immediately they ripened. I suspect, without any scientific proof of course, that many Iris species may share with for instance Primula, Daphne, Paeonia and Helleborus, the fact that freshness of seed almost to the point of immaturity gives the best results. (Yes, the best iris results I've had to date was with fresh SS&J seed, and older Versicolor and Ensata seed especially seems to germinate poorly. But then, so does my own bearded seed, which is often sown fresh from the pod. Not of species of course though. Ed) The parent plant I grew from seed selected from the RHS Lily Group Seed list. I am pretty sure the donor would be Mrs. Ryder of Toadshole Cottage. She has described in a previous issue how she obtained several named hybrids from America. Now if I grew a single pod- full of seed from each of 70 plants and repeated it for a further generation I would soon need 10 acres of garden to grow them all. It would be illuminating to hear if large scale plant breeders choose batches of seed at random and discard the remainder. In other words do the required improved attributes have to appear in the first generations? I realise that the possible permutations of getting one superior plant must be mind- boggling and the cost of growing every available seedling quite staggering. It is a great mystery to me and I can see the attraction of growing species that have taken centuries to become uniform.

I have now to be careful and tactful in what I propose. I do not wish in any way to tread on the toes of our seed managers. Nor do I wish to imply any criticism of the seed storage conditions. May I suggest that the seed lists of specialist societies such as ours might be 'turned on their heads' to some little degree? Could we investigate a request list from you the members in addition to the present availability list: then, however obscure the required seed it could be despatched to a keen grower as soon as it is ripe. These growers are the only ones who would give it undivided attention. As I have mentioned, however well stored, many plants species, not just Iris, would benefit from early sowing. I would welcome your opinions.

Best wishes to you all.

Ray Bomford

SECRETARIAL SECTION

The fact is that with the Group properly re-established, your Secretary has very little to do these days. (Piffle! Ed) The serious labour is undertaken by Philip Allery and Sue Pierce and very satisfactorily too. As you may or may not have noticed, I have been chairing the Joint Iris Committee this year and there is one matter which I should like to bring to your attention while waving each of my hats around my head: there is a reasonably good supply of bearded irises entered for the trials from British breeders, but there is a paucity of such plants from breeders of beardless forms. Spuria and Ensata growers forward, please. This ties in with our Chairman's Remarks. We could very well run a 'plants and seeds wanted' corner for specific requirements as well as the plants and seeds offered by those of us with some to spare. And if the iris trials at Wisley are to continue, there must be fresh irises to replace those that fail and those that have just become rather elderly.

You will see from the newsletter heading that a decision has been taken to change the name of the Group to "The Group for Beardless Irises of the British Iris Society". The Group now encompasses interest in fourteen different forms of irises so it was a decision that was over-due. With your support it will continue to flourish.

Anne Blanco White

REPORT OF HON. TREASURER AND MEMBERSHIP SECRETARY

MEMBERSHIP- Members will be saddened to learn of the death in December last of Professor D.A. Dixon of Whitburn, Sunderland. A hospital consultant orthodontist, he had taken early retirement on health grounds. His interests apart from gardening included researching Hadrian, fly fishing and making stained glass forms incorporating glass and minerals on a slate base. On hearing of Professor Dixon's death I conveyed to his widow, Mrs. Joyce Dixon, the Group's sincere condolences in her loss. It was then that I learned of two ways in which the Group might be able to help her. The first is to identify, locate and register, in her husband's memory, an iris to be named 'Hadrian's Fancy' which was raised by Professor Dixon, which Anne considers to be either a 40 chromosome sibirica or a calsisib. I have sent photographs to Jennifer Hewitt and Anne Blanco White for identification. Did Professor Dixon give this plant to any member of the Group? The second is to advise Joyce on the plants in her garden; and to recommend future action. Members of the Group for several years, Joyce's ill-health had prevented her from active gardening in recent years, but she is continuing membership of the Group and has sent a generous donation. Any member who expects to be in the Sunderland area and could call to view the garden should notify me, and I will make the necessary arrangements.

We welcome to membership Mr. & Mrs. Gregory Guthrie of Brantford, Ontario, Canada; Mrs. N. Harris of Norwich; Mr. & Mrs. R.A. Wise of Iver, Bucks, who have re-joined; Mr. & Mrs. Peter Farrell of Tamworth, Staffs; Mr. Robert Kontak of Camillus, New York; introduced by Jennifer Hewitt following her trip to Massachusetts this year. All new members are asked to write articles for the Group to tell us a little about themselves; their gardens and the irises in which they have an interest. I met 'Greg' and Beverley Guthrie when they visited Britain for the marriage of their eldest son Joel to our eldest grand-daughter Rachel. A very happy and enjoyable period indeed. One meeting even included a torchlight tour of the garden. Peter and Wendy Farrell of Hopwas, Nr., Tamworth are active members of the West & Midlands Iris Group for whom Peter acts as Hon. Treasurer. Mrs. Norma Harris is a keen member of the Hardy Plant Society, for which she is Norfolk and Suffolk Group Secretary, and Plant Sales manager. She has a very large pond which has either a natural clay or a puddled bottom which is topped up in summer from the neighbouring stream. Mrs. Harris has gradually created several large beds around this for moisture loving plants. Group members can look forward to some interesting reports from Mrs. Harris.

FINANCES- A Building Society balance at 1st. Oct. of £508.80 with approximately £27 owed to the Group by the BIS indicates a satisfactory financial state. (See my further report in "Late News" on page 27. - Philip). Expenditure in 1996 to date has been offset by very generous donations to supplement subscription income. The net cost of the March newsletter was approximately £130. Subscription arrears as at 1st Jan. last amounting to £37, have been reduced by £10.50 only, which is quite unsatisfactory. Drastic action is called for. Very simply, in cases where a subscription is payable the Newsletter will be withheld until payment has been received.

Improved library facilities for those who wish to benefit from them have now become desirable. Several new publications are due and for purposes of purchase I propose to set aside £100, to be 'topped up' annually, if necessary. This will be established by specific donation only and £80 having been raised so far which is included in the above balance. Dr. Currier McEwen has generously donated a copy of his new book 'The Siberian Iris' for Group Library use, written for the beginner as well as for the experienced grower. (I needed a note-pad by me whilst reading it! Ed.)

Organised meetings have been considered previously to be out of the question. It now appears possible to have such a meeting and Show on the first or second Sunday of July annually. With a readily accessible venue in the West Midlands it is necessary to establish the extent of support before proceeding further. Please let one of us have your views.

Donations to date amount to £136.50. Our thanks go to our Chairman, as well as Joyce Dixon, John Carter, Peter Maynard, and John Wilkins for their generous support during the period under review. Plant and seed sales have contributed a further £57 and £9.25 respectively, and our grateful thanks go to Anne Blanco White, Jennifer Hewitt, Norman Payne and Jane Cole, (plant sales) and Gary Lewis (seed sales). The Group's thanks are also due to Berney Baughen for free design work and typesetting which substantially reduces the cost of the Group's new stationery, following its change of name; a generous practical donation. Another such is from B. Charles Jenkins of Scottsdale, Arizona who has sent a large packet of spuria seeds for inclusion in the seed list, in a similarly generous fashion to that of Currier McEwen and Dale Hamblin last year. The '97 subscription rates are to remain at £2.50 for the UK & EEC ; and £3 for overseas. Newsletter costs now exceed subscription income. Paper, printing and postal costs have increased and it will be necessary to keep subscription rates under close review. Donations are always welcome and enable the former to be kept at a minimum. In the meantime please bring your subscription arrears up to date; chasing them is a tiresome waste of time which I can no longer afford. The possibility of reciprocal arrangements can always be considered. There may not be sufficient room in this Newsletter package to send you your personal 'flyer' but details of your membership subscription will be given on your address label. Now it is up to you. Remember- No SUBSCRIPTION, No NEWSLETTER!. Why not spare a moment to send me your 1997 subscription NOW. It would be a great help. Many thanks! Please support the Group in any way that you can. Happy gardening!

Philip Allery

EDITORIAL

Firstly, I must refute Anne's statement of inactivity, since she has, at the very least, suffered all my enquiries and idiocies in an uncomplaining and uniformly helpful spirit, as have Jennifer and Philip. Without this unfailing help this NI would be delivered to you in a state much nearer chaos than I would like anyone to have any idea of. I would also very much like to thank- in a heartfelt fashion- all those who've pulled out their various stops for me, often at short notice, and sent re-printing permission and/or copy for inclusion which has made this issue a sight more interesting than it might have been. You are the main reason that doing this job is worthwhile. Whilst I am obviously very pleased to be able to include fascinating material about the various doings of the cognoscenti, I am actually gathering it more for dissemination to the ordinary gardener who might discover that they are interested in the information, than I am for those knowledgeable folk who most probably receive the publication from which I've copied anyway. While I realise that -for instance- very few of us are considering the genetic freight of those we pollinate and cultivate in great depth, I can never know precisely what information might be useful, and endeavour to pass on whatever comes my way that seems interesting. Being vastly ignorant, just about everything that passes through my hands is new to me, and some of it incomprehensible, but I expect that it will all be appreciated somewhere by someone. Now, all this is basically leading around to a renewed plea to the ordinary gardeners amongst us for whom all this is largely done. I am aware of a lot of ignorance on my part when it comes to cultivating my irises, let alone hybridizing with them in a 'daubist' fashion, as so many of us so enjoy, but simple omissions

in my gardening knowledge still take me by surprise, and being an rampant egotist, I fondly imagine that if there are gigantic lesions in my body of knowledge, others may well have them too, at whatever levels, if undoubtedly rather smaller. The Newsletter is a forum where, unlike most gardening books (some authors are kind exceptions) one can ask questions and hope to be answered, share one's mistakes with others so that they may avoid the pitfalls, recommend and entertain. Therefore, it's vital that the general membership do not feel that simply because there is a lot of erudite material in the NI, that they ought not to write in since their level of knowledge is minimal by comparison. Please, most of us are ordinary mortals after all, with feet of clay often just as evident in the garden as elsewhere, in both contexts. Let's try to keep the information in here as broad as possible since, let's face it, the experiences of 'Joe gardener' -positive and negative- are directly helpful to others of his breed in their seasonal efforts to get it right, or even just keep it alive. I print all the articles from Joe gardeners that I receive, and always wish there was more since it's often such entertaining stuff. I share my own gardening inadequacies with you (ask Philip about the rest) in the hope that you might be tempted to join in. While the 'hard-core' information that I endeavour to include is most interesting and valuable- I hope to others of you as well as myself- let's have some fun too! In the last throes of finalising the NI I get my light relief from the spellchecking system and its efforts of association. People's surnames were the funniest, but totally unrepeatable, so how about- 'Janice Sheepskin' for 'Chesnik', and Hibiscus cockiness for coccineus? I trust you to come up with more intelligent stuff.

On a more personal note I wish to thank Jane Cole, for being unfailingly helpful in the face of editorial pesterings, and with John Smith of the Water Garden Nursery, along with Anne, Margaret Criddle and Jennifer Hewitt, for sending me wonderful plants that will ensure that I have something to write about regarding appropriate irises and not simply the joys and woes of being Editor. Suz Winspear, Geoff Wilson, Herr Harald Mathes and Mr. Domingo have all been generous enough to share with me Arils that will grow in the open and from these I hope- in my haphazard fashion- to possibly come up with reliably hardy seedlings so that more of these fabulous creatures can be let loose on the great out-doors for the enjoyment of such lazy gardeners as myself.

Ed

REPORT ON WISLEY'S SIBIRICA TRIAL 1993-1996

From time to time the Joint Iris Committee finds something to worry about in the various trials at the RHS gardens- ants' nests can result in unhappy plants, fungi appear among mulches of bark (but do not seem to do any harm), and more rarely, cultivation methods or the situation of a particular trial may affect overall performance. There are also inexplicable failures- the odd variety that just doesn't seem to like Wisley, or one such as the McEwen sibirica 'Ruffles Plus' which produced large clumps full of bloom in 1990-'93 but which by '96 had almost disappeared. Each three year trial is planted in a new position so it is not a case of exhaustion of the ground, and anyway, large quantities of manure and compost are dug in before the fresh site is planted. In general the standards of preparation and cultivation are very high, and most of the sibiricas planted in 1993 made excellent growth and flowered well. So quite a number of Awards of Garden Merit (AGM) were recommended. At the time of writing some of these have yet to be confirmed by the RHS Council, but this is usually a formality. Varieties which did not reach AGM standard may not have grown as well (some are being given a second chance): may not have had the quantity or quality of flower which meets modern expectations- the JIC does not come with preconceived ideas on form but there are flowers which are not attractive, for example with parts too narrow for their size; and in a few cases, wrong plants have been supplied by the growers (we all know how labels can wander or plants grow into their neighbours). Three plants, all different, under one name, are an interesting (and puzzling!) example.

Those whose AGMs were given in 1993 are mostly very well known. They are the Marjorie Brummitt varieties 'Anniversary', 'Cambridge', and 'Sea Shadows'; 'Ruffled Velvet', and 'Orville Fay' from Currier McEwen, and 'Wisley White' (RHS). In 1995, AGMs went to 'Butter and Sugar', 'Silver Edge', and 'Shirley Pope' (all McEwen); to dark blue 'Oban' and blue bicolor 'Glaslyn' (Harry Foster, '89 & '90); to 'Zakopane' (Bartlett '95), deep violet, 'Berlin Ruffles' (Tamberg '93), darkish blue, and to another from Germany, the pale yellow and white 'Welfenprinz' (Ahlburg '90), plus the famous 'White Swirl' which is in the ancestry of so many award winners in many countries. By 1996 the trial was at its best and perhaps the hot summer of '95 helped to produce quantities of bloom, with the aid of adequate watering which Wisley can supply. These are the cultivars which have been recommended for AGM (all are diploids unless stated):

'Annemarie Troeger' (Tamberg '80) mid blue self, white signal.

'Dreaming Yellow' (McEwen '69) creamy, falls open yellow.

'Glanusk' (H. Foster '90) mid blue, falls edged white, tetraploid.

'Harpwell Happiness' (McEwen '83) white with yellow- green veins, tetraploid.

'Isla Serle' (H. Foster '91) pale violet standards, rich blue falls, green signal, tetraploid.

'Mikiko' (Tamberg '93) crisp creamy white.

'Perfect Vision' (Bartlett '96) light blue standards, mid- blue falls, turquoise style arms, tetraploid. (Name chosen by the Iris fund for the Prevention of Blindness.)

'Regency Belle' (McEwen '85) violet- blue bitone, paler blue style arms, tetraploid.

'Reprise' (Warburton '86) violet self, repeat bloomer in USA and Trial.

'Roisin' (Hewitt '96) lavender- pink bi-tone, white style arms. (Pronounced Rosheen.)

'Rosselline' (Hewitt '96) lilac- pink standards, red- violet falls.

'Smudger's Gift' (Burge/Smith '96) Swiss raised light blue, tinged violet, tetraploid.

'Weisse Etagen' (Tamberg '84) white tetraploid, semi- vertical form.

Two 40 chr. hybrids (from the Chrysographes sub- series) gained AGM in 1995. They are the light blue 'Splashdown' (Hansford '72) and tall 'Cleeton Double Chance' (Hewitt '95), creamy white with violet speckles.

Some which did not quite make it included 'Exuberant Encore' (McEwen '85), a violet - blue tetraploid which has short unbranched stems in its first bloom period, but taller branched ones when it repeats, which it does at Wisley. Tomas Tamberg's nice short 'Berlin Little Blue' ('93) and the tall dark blue tet. 'Silberkante' which has white edged falls, together with the deep coloured tet. 'Prussian Blue' (all three registered in '93), are all worth places in the garden, as is 'Chandler's Choice' (McEwen '94) a very deep red tet. which flowers more freely in Britain than one of its parents, Hubbard'. The latter is a revelation in the USA but I was also amazed to see how washed out my 'Elinor Hewitt' ('92) was in Massachusetts this year. It does not, perhaps, like Wisley though here it grows very well and though small, its red standards and violet falls make a colourful clump. It grew and flowered equally well in Massachusetts but the colour was very disappointing.

Many of the irises with AGM, or near misses, will be or are available through the BIS sales scheme or from nurseries, as well as others from the trial which are well worth growing- they may do better for you than for the RHS!

Jennifer Hewitt

WISLEY'S ENSATA TRIAL REPORTS

After three years the very first trial of iris ensata at Wisley has now ended with a new trial starting next year. For the past two years there has been a superb display in the trials field which has left the public gasping at the sheer size and beauty of the flowers. Subject to confirmation, from the original 49 entries, 25 varieties have received the AGM which reflects the very high standard of the plants. With so many lovelies, it is very difficult to choose any one as an overall favourite, but three which appealed to me are 'Fringed Cloud', a pure white with neat violet stitching to the petal edges, 'Continuing Pleasure', a pale lavender blue with white veining, and 'Magic Opal', an opalescent pink with a subtle purple flash on the falls. There are many more super varieties that if grown properly would enhance any garden. Many of the senders of plants kindly allow the BIS to have surplus material from the trial to sell for society funds and a list of plants so available can be obtained from Ray Jeffs, Nutfield Nurseries, Crab Hill Lane, South Nutfield, nr. Redhill, Surrey, RH1 5PG. However, about a third of the entries were supplied by commercial growers and naturally all material is returned to them. The two main concerns from where the plants can be obtained are Wychwood Carp Farm, Farnham Road, Odiham, RG25 1HS, and Norman Payne, 84 Whatley Avenue, Merton Park, London, SW20 9NU. I'm sure that if you sent them an SAE, they would send you a list of available plants. If you've not grown ensatas before, then why not try a few. The modern varieties are really something special.

Ian Smith.

I am very grateful to Ian for allowing me to persuade him to write reports on the JIC and such trials and shows as he visits, and thereby ease the burden on those already up to their eyeballs, if snorkelling, and only hope that our association will be a long and fruitful one of much interest to those of you who have been bitten by the bugs mentioned. He was unaware at Trial time that I would approach him for a piece, since I was lamentably ignorant of the fact that it was coming to a close, so this report came from memory alone and is therefore a short one.

Ed

Part of this report must be left until next year because of the way that the awards system works: an Award of Merit is now effectively a show bench award only. In spite of that, it mostly has to be given in the field for the ensatas because we never seem to see them in shows any more. Actually, you probably could get them to shows with a little extra effort because they can be forced, or should I say encouraged, to flower earlier if you want them to. The AM, then, is given to plants with spikes of such quality that the members of the JIC think would qualify for first prizes if they did appear at a show. It does not follow that the same plant would gain an AGM. The AGM is given to a plant which not only has good flowering spikes and plenty of them- although taken singly, they may not be up to showbench standards- but which also grows consistently well in the garden. It has to stand up well to all that the British weather can throw at it- whether a wet or dry summer, high or low temperatures, high winds or high humidity. And, which is relevant here, the award has to be approved by the RHS council and this is not done until the end of the year after a late meeting by the JIC to ensure that we haven't changed our minds. So, if you see AM beside a plant's name in a catalogue you can be sure of good exhibition spikes and probably good breeding potential, but it may need more TLC in the garden than a similar AGM.

Which being said, it was a good year at Wisley and in general all the plants did well. The irrigation system gave trouble and watering had to be done by hand, but plants grew satisfactorily and flowered admirably and in reasonable time. Not only did we judge the trial proper on the Portsmouth Field, but all the other ensatas, and there are dozens of them. Planted along the edge of the 'canal' at the bottom of the rockery, along the old stream ditch beside it and up the new stream that runs down from Bowles's Corner. Oh, and at the top of the rockery too. I reckon our tours of the ensatas cover about a mile each time. There is a problem with the canal in that when one duck decides on a particular point at which to leave the water, all the others follow in its footsteps and if those happen to go over an ensata, it is just too bad for the iris. Nevertheless, since this year saw the end of one trial and selections for the next we ended up with a howl of misery from the Trials Office; there was space for only 50 plants on the Portsmouth Field beds and we had chosen some seventy candidates. Compromise was approved and some plants will continue to be judged in their present sites around the garden. Which is all very well, but some of those plants have already been at Wisley for six years and many others come from a collection sent by a Japanese donor. We do need more British raised seedlings so that as the present specimens outstay their welcome, there are others to replace them. And for this year's awards? AMs went to 'Continuing Pleasure', 'Flying Tiger' and 'Hue and Cry'. The last two can be bought from Norman Payne and the first through Ray Jeffs on application with an SAE.

Anne Blanco White

BIS SUMMER SHOW '96 AT WISLEY: BEARDLESS & SPECIES IRISES

PCIs were the brightest spot amid the gloom of the late season this year in Wisley's Potting shed, the 11 entries in Class 22 stole the show. Visitors were keen to know where to get them and how to grow them. They illustrated the point that exhibiting is not just about winning prizes- unplaced vases can be just as good at publicising irises. As it was, the judges had a hard time selecting the winners and almost all the others were in with a chance.

Bob Wise not only produced good flowers, but staged them well too and that can count at crunch time. His seedling 8/94, a large bright yellow with red veins, and 'Celtic Copper', bred by Maureen Probert, with wide yellow falls veined brown, stood out. He took the class and the Hewitt trophy for the best vase in the Division. Peter Maynard's 5 stems were arranged to face outwards all round the vase, so were not as effective when seen from the front. Getting several stems with their own- and differing- ideas to co-operate is difficult, but, when your flowers are as good as Peter's were, it's especially important to make the effort. His three seedlings with broad petals and a rather flat form contrasted interestingly with the smaller, more up and down flowers of 'Banbury Welcome' and a pink/red seedling. These, and others of this form in other entries, although perhaps looking somewhat out-dated to BIS eyes, were admired by the visitors for their colours and patterns, who asked if they were good garden plants- and could be reassured by their track records. Eileen Wise's lovely vaseful had one damaged petal right at the front, and was placed third. Perhaps if it had been better hidden, the judges would have missed it?

Two of Bob's seedlings were later Referred for Further Assessment (RFA) in Wisley's trials: 4/94- a deep purple, and 1/96- a fascinating tricolour with deep pink standards, velvety deep red falls and buff-yellow styles with red-brushed crests.

Entries in close contention included Berney Baughen's group of nicely mixed colours and his wife Alice's pleasant tan self- Joe Ghio's 'Going West', and a bright mauve Wise seedling. Brian Price showed his seedling 92/C/3 along with his own two named yellows, 'Little Tilgates' and 'Falstaff Cottage', the former being large flowered and subtly coloured in cream, greyed lavender and soft yellow. Clive Russell had two seedlings from Ghio seed RFA- JG93/1-A, a broad yellow self, and JG93/1-B, a ruffled yellow marked maroon with a lot of personality. This was definitely the best class in the show.

Neither of the two entries in class 25 could manage 5 sibirica spikes with an open flower apiece, but two vases of slightly imperfect Dutch bulbous hybrids added a splash of colour. We really ought to have more of these in a wider cultivar range. They may be the ones most familiar to the public, but flower shops only stock a few varieties.

No-one could muster a collection of species irises, but Class 30 had 12 single species entries in pots and vases, making it another highlight of this part of the Show. The range of species and their origins was wide. At first sight, Peter Maynard's *Californicae* in yellow with red signals, seemed to be in the wrong class, but were not cultivars, but grown from seed guaranteed to have been wild collected. Just which species they belong to is presumably still uncertain. Second was Mary Tubb's exemplary *I. variegata*, and third was Pauline Brown's entry of a very fine *I. missouriensis*. Other entries of interest were Sidney Linnegar's *I. pallida* ssp. *cengialtii*, collected in Hungary, *I. typhifolia*, shown for probably the first time in Britain by Bert Bailey, but the small deep violet sibirica-like flowers were not at their peak. Evansias were represented by *I. japonica*, *confusa* and *tectorum*, Spurias by *I. graminea*, *Tripetelae* by *I. setosa* ssp. *canadensis*, the very short slaty blue often labelled 'Nana' or 'Dwarf Form'. *I. germanica* 'Kharput' didn't open in time.

At least one visitor enquired as to why non-irises were being shown in the classes for Iridaceae. Peter Maynard triumphed here with numerous orange spikes of *Homeria collina*, and one yellow one. He scooped second too with *Libertia grandiflora*, beating Ray Jeff's *Sisyrinchium* 'Californian Skies' into third, although it had many more open flowers on it in the afternoon.

More PCTs appeared in Division IV for seedlings. Brian Price won Class 35 with 'Flagstaff Cottage' and seedling 92/C/3, one of the best to my eye. Bob Wise's second was RFA 14/93, a deep purple-violet self, and 1/93, a very big flower of basically, white flushed and veined violet, lime yellow in the heart, with deeper yellow signals. In Class 36, Norah Scopes had two very unusually and attractively marked PCTs which were RFA. 'Floating World' had dark reddish-violet standards and style arms, both edged paler, and horizontal falls whose reddish signals were surrounded by red-violet bands with the rest of the blade being white, finely and densely veined reddish-violet, most densely at the edges. Seedling PC106 had violet standards and style arms, the latter blue streaked, and falls with small light yellow signals, then a blue-violet band, then violet veined white and finally a solid violet rim.

Doubtless other years will see this section better filled and different irises will have their day, but it was good to see the late spring of '96 making it the PCT's year.

Jennifer Hewitt

SOUTH OF WATFORD

This has been one of our less helpful years to date. You may recall that we had a severe drought last summer. 4" of rain in September simply ran straight off the surface of the soil. I was quite unable to do any replanting because I couldn't get a fork in the ground before about February. On the whole, the plants have survived in reasonably good form, but what really set them back was dark days and cold nights into the early summer. In addition, there was an unusually dry winter and we did not start the year with the ground properly saturated. I was unable to follow my prescription and water the beds early in the year, but serious mulching does seem to have kept things going. Mercifully, we have had 3" of rain in the last August fortnight. What is more, it came in the form of heavy showers which meant that most of it soaked into the plants and ground.

Old established sibiricas flowered well, but smaller plants did poorly. Some pseudacorus forms did well in flower beds and some did not though the ones in the ditch were in good form as might be expected. You will remember my troubles with 'Chance Beauty'? well, one plant flowered true to name. Don't all rush to try to get it because there isn't enough of it. It will take some time to build up stocks again.

The spurias have been a mixture of 'I will' and 'I won't'. The London ones have access to underground water and some seedlings of Monspur 'Cambridge Blue' decided that anything 'Shelford Giant' could do, they could do too and they did. Fine upstanding spikes. Plants at Wisley were, on the whole, doing well. The late Peter Wood's 'Russian White' is well worth acquiring if it comes into the BIS sales list and so is his form of *I. musulmanica*.

Pacificas did not do really well because they suffered from severe frost damage except where they were growing in sheltered conditions. The new award for these plants, a painting of Marjorie Brummit's 'Banbury Beauty' by Pauline Dean, went to Peter Maynard's 'Goring Ace' which richly deserved it.

After what looked like a disappointing start to the season, the ensatas took off most enthusiastically. The trial bed on the Portsmouth field were really impressive, though some of the plants at the bottom of the rock garden show signs of being in urgent need of replanting. Nevertheless, a range have been selected as suitable for further assessment for the AGM. The really disappointing one, which is a great shame, is McEwen's 'Southern Son'. This really had me going with its height and splendid branching when it was first planted in the garden, but it has deteriorated steadily since that first summer. I'm afraid the moral is that ensatas do not like the drainage supplied by nearby root systems (? of a pampas grass) when planted in a flower bed. The plant in the trial bed has done much better, but I suspect that if these summers are to persist this plant will really require a permanent supply of running water.

Incidentally, we are disappointingly short of ensatas seedlings coming before the JIC. Now that we have a trial established it seems a pity to let it be closed down because nobody offers plants. And since a number of these plants will be on off this year when the trial is replanted, this is a good opportunity to start some serious work on them. Particularly those which can be easily grown in a flower bed.

Interestingly, the plants which really benefitted most from last summer seem to have been the LA's. I have a number of English raised seedlings which, in a state of disgraceful neglect, did their best and flowered in spite of all the snails could do. They set a small amount of seed too, and I would like to know what the pollinator is. Whether I can harvest the seed remains to be seen after the police invasion, but nevertheless an interesting point was raised at Malvern; a visitor there told me that she was happily growing and flowering these plants somewhere a little further north and I do know that they are surprisingly frost resistant. My feeling is that in this country it may be a question of how soon the soil warms up in spring that governs the flowering potential. The cold clay here in Sussex definitely slows things down but, in London, where they are in a bed which is fed by a spring, they seem to do quite nicely. I suppose I'd better take the soil thermometer up to London and check the bed temperature through the year. Might be interesting at that.

Anne Blanco White

IRIS INFORMATION

The BIS hopefully still has copies of Currier's 'The Siberian Iris'. Write to Neville Watkins, Hon Literature Secretary, 31, Larkfield Road, Farnham, Surrey GU9 7DB, enclosing a cheque for £25 which covers postage too. I do apologise for omitting this from the BIS Newsletter, those of you who I've inconvenienced, please feel free to send me rude letters, all editors are masochists at heart. Mrs. Criddle informs me that there's a substantial saving to be made for British members (at least) in buying from the BIS. Postage I imagine. An extremely thoughtful gentleman has provided me with a copy, for which I'm extremely grateful, so I've no knowledge of the 'ins & outs' but if Margaret says that's the case, that's good enough for me.

AIS SPURIA AWARDS FOR 1996

ERIC NIES MEDAL:	59 votes	'Chocolate Fudge'	Hybridizer:	O. D. Niswonger.
Runners Up:	42 votes	'Countess Zeppelin'	"	B. Hager.
	27 votes	'Sonoran Senorita'	"	F. Wickencamp.
AWARD OF MERIT:	60 votes	'Highline Snowflake'	Hybridizer:	E. McCown.
	47 votes	'Color Focus'	"	C. Jenkins.
Runners Up:	30 votes	'Oro De Sonora'	"	F. Wickencamp.
	24 votes	'Fixed Star'	"	B. Hager.
	24 votes	'Tiny Lou'	"	B. C. Jenkins.
HONORABLE MENTION:	43 votes	'Sonoran Sunset'	Hybridizer:	F. Wickencamp.
	43 votes	'Zulu Chief'	"	B. C. Jenkins.
	29 votes	'Sonoran Skies'	"	F. Wickencamp.
	21 votes	'Infini'	"	G. Corlew.
	20 votes	'Copper Trident'	"	B. Hager.

Spuria Iris Society Newsletter Summer 1996

THE MITCHELL MEDAL 1995 was won by 'Sierra Dell', from a cross of a Lawyer seedling (XP4P), by 'Sierra Butterflies'(Lawyer'84). Both parents can be traced back 3 generations to *I. munzii* -derived material from Thornton Abell, Joe Ghio, and Lee Lenz. From the colour photograph of Lewis's watercolour shown, it looks to be very pale blue with a yellow flush on the falls, of an open form. Runners up were 'California Mystique' and 'Big Money', both Joe Ghio's.

SPCNI 'Almanac' Fall '95. A Guide to the PCI by V A Cohen is available from the BIS. Ed

A.I.S. JAPANESE IRIS AWARDS 1996:

W.A.PAYNE MEDAL: Joint first;	46 votes	'Edge of Frost'	M.Dienstbach:	46 votes	'Kalamazoo'	A.Hazzard
Runners up:	39 votes	'Iapetus'	S.Innerst;	30 votes	'Electric Rays'	T.Aitken
AWARD OF MERIT:	85 votes	'Butterflies in Flight'	T.Aitken;	27 votes	'Little Snowman'	A.Vogt
Runners up:	26 votes	'Amethyst Wings'	W.Ackerman;	24 votes	'Silverband'	Bauer- Coble
HONORABLE MENTION:	36 votes	'Bellender Blue'	Bauer- Coble;	28 votes	'Epimetheus'	S.Innerst
	27 votes	'Pink Dace'	J.Copeland	25 votes	'Cascade Storm'	L.Reid
	21 votes	'Cascade Spring Dress'	L.Reid			

Our thanks go to Evelyn White for this information.

PCI CHECKLIST 1996- This is updated from the '95 copy. Part 1 lists and describes the Registrations 7 Introductions of named Garden Cultivars and Hybrids, and named, registered and introduced Inter-Series Garden Hybrids. Part 2 covers the Californicae species, their general geographical location and parallel information about natural hybrids; common names and synonyms are listed, and native habitats by State and County. Part 3 lists those hybridizers who have registered or introduced PCIs and their varieties alphabetically under their surname and also by year of introduction; species and hybrids most frequently used as parents are identified. A Historical Section follows, tracing the recognition of the wild PCI as suitable garden subjects, the first written description in 1829, and the development of hybridizing, dominated initially by the English. Part 4 lists the awards from 1914 to the present.

SPCNI 'Almanac' Spring 1996. Vol XXIV, No.2

SPURIA CHECKLIST- the 1995 edition includes all those registered and/or introduced through '94, around 600 varieties, nearly 200 more than the 1985 edition. Each entry is a direct copy of the AIS registration book description, plus awards received through '94. There is also a list of all known species, biographical sketches of the hybridisers, a list of spurias as parents, AIS spuria awards, and sources of spurias. Write to Floyd Wickencamp, Librarian, 10521 Bellarose Drive, Sun City, AZ 85351- 2241. Spuria Iris Society 'Newsletter' Summer 1996. Anyone interested in the above, I recommend contacting the Group Librarian. Ed.

ENSATA SEEDLINGS AND CULTIVARS ON OFFER- Clive Russell has very kindly offered 6 hybrids which will probably divide into 5 clumps each. Due, he thinks, to overcrowding, only one flowered in '96, but the others will be blue or white, with some having six falls. Will anyone interested in divisions of these please contact me at the earliest opportunity. Clive needs someone to handle the splitting and distribution, which I am happy to do should enough buyers be found, but I do not have the space to house 30 divisions. If there is someone prepared to either take this job off my hands or house most of these until I've sold them all, please do come forward since this is a valuable opportunity that we should make the most of. These plants came originally from seed received from Japan by Ray Jeffs. Clive is also offering the spurias 'Shelford Giant' and 'Media Luz'. Those interested please contact him at 47 Station Road, New Barnet, Herts. EN5 IPR. The member in Essex who supplied him with the spurias has also given him some siberian seedlings which need to be assessed, Clive states, by 'someone more competent than myself' who should take them on. Anyone with the appropriate knowledge, please help Clive out. Ed.

PLANTS FOR SALE

'Roy Davidson', 'Phil Edinger', 'Regal Surprise', 'Limbo', 'Seuver Fourses', 'Seuver Punch', 'Seuver Syllabub', 'Seuver Thrumenty'. £5.00 each, profits to the Group, enquiries to Anne Blanco White.

Dr. John Beal has very kindly made available plants of his spuria which he will register in '97. I imagine that they'd be grateful for some settling in time, so anyone interested please contact me next autumn when I will dig them presuming they've survived. I can divide my barrel of pseudacorus cream form for anyone who'd like it. £3.50 each, profits to the Group. I have seedlings from pseudacorus variegata too, all green so far (2nd year) but if anyone wants to try them, 50p each please. All these prices will of course include the postage. I may have a very few ensata cvs splittable in the spring, contact me if you're interested. Ed.

The Chairman is very anxious to extend the Scheme since increased income from it will limit the need to increase membership subscriptions. You will have read what he has to say on seeds, so if you have any specific requests for seeds or plants please let one of us know and we'll do our best. I have had a splendid show of poppies this year, in pastel shades of mauve, pink and red. Members who would like seed should send me two 1st class stamps. (I will keep back seed of *Arum italicum italicum* until December in case of interest. Ed) Next year I will need to split various plants of *hemerocallis*, a border perennial; various *ensatas*, including ex Wisley Trial plants and some donated by Currier McEwen, and plants of Pacific Coast Irises. Net profits will be donated to the Group for library development and a project which I will mention in the next Newsletter.

Philip Allery

AIS SCHOLARSHIP

Jean Witt has kindly enlightened me as to the existence of this. The AIS has established an Iris Research Scholarship which is open to researchers in countries other than the US. Their first has been awarded to Professor Zhou Yong-hong who is to study the cytology of the Crested irises subsection *Lophiris* (*Evansia*) in Yunnan and Sichuan. Jean writes that *I japonica* and its relatives are peculiar in that over the years, many chromosome counts with different numbers have turned up, and many different forms. She hopes that Prof. Zhou will be able to answer such questions as; are *confusa* and *japonica* a single, reliable species, or two good ones; or are they a swarm of hybrids? Interested parties are encouraged to write to Jean at; 16516 25th Street NE, Seattle, Washington 98155, USA.

Jean adds that Dr. Waddick's *I. speculatrix* from his Chinese collection has finally flowered for her, and that it's 'cute, but fussy about location'!

GET WEAVING...

Did you know that many iris leaves are very good for basket weaving? In particular, Japanese and *pseudacorus* because they are more fibrous than other forms. Daylilies may also be used.

ISA NSW Newsletter, Feb. '96

FORTHCOMING BOOK ON PACIFIC COAST NATIVE IRIS

The SPCNI plans a book to rival Currier's comprehensive publications, and they are accumulating funds and information if anyone wishes to contribute. Watch this space-unless you subscribe to the 'Almanac' of course!

Ed.

An Adaptation of: HYBRIDISING WITH WATER IRIS SPECIES. St. Louis '95.

During my study of growing wild iris species, I fell in love with *I. versicolor*. I observed and followed up on several colonies over three to four years. Observation revealed several unknown factors about the relationships of soil with morphology and polychromy. The condition of reblooming could be understood, while the irregular appearance of multipetaled flowers must have been due to genetic inheritance. Many of the collected plants were used in various crosses to improve the color range and increase adaptability to garden conditions. The first inter-specific crosses were made in 1984 (*I. versicolor* x *Lensata*) and confirmed by chromosome count in 1987. (G. Laublin). In 1987, W. H. Perron & Co. Ltd. accepted *I. versicolor* in its official Research and Development Programme. With a grant from the National Research Council of Canada (NRC), W.H.Perron signed a contract with the Institute de Recherché en Biologie Vegetale (IRBVM) of the University of Montreal, at the Botanical Garden in Montreal, Canada. The scientific aspect was conducted by Dr. G. Laublin with the supervision of Prof. Dr. Mario Cappadocia. This aspect of the project has been; to develop a method of embryo culture; to develop a method of micro-propagation using tissues from species of the Series *Laevigatae*; and to compare variation between leaf cell, ovary, root and meristem culture methods. The somatic embryogenesis culture technique should be easily transferred to commercial methods that accelerate marketing of new cultivars. Chromosome analysis informed us quickly and allowed us to identify the success or failure of crosses before they bloomed. This helped us to modify our hybridising program and to keep up with our anticipated breeding developments.

Series *Lavigatae* Crosses

Iris virginica var. *virginica*. Southern Great Blue Flag.

This species grows wild from Virginia south to northern Florida and westward to Texas. Chromosome count (G. Laublin) $2n=70$ and $2n=72$. Grows best in an acid soil, damp places or in shallow water; leaves are dark green, leaves and stems are arching. Flower stems have one or two branches, flowers are 6-8cm wide with yellow signal blotch near the haft, standards are as long or shorter and narrower than falls. Seed capsules are from 4-7cm long and 2cm wide, 3 cornered to cylindrical with 3 carpels containing a single row of seeds per carpel. Seeds are D shaped, flat, dull and corky, slightly bigger than seed of *I. virginica* var *shrevei*. Seeds need warmth and moisture to germinate. Seedlings need 3-4 years before they set flowers. Plants need winter protection in Montreal.

Crosses of *I. virginica* var *virginica* and *I. pseudacorus*, *Lensata* and *I. laevigata* have been reported, but they did not have ornamental value.

Crosses of *I. virginica* var *virginica* ($2n=72$) x *I. versicolor* (=x *Virga-versi*) ($2n=90$). Hybrid seedlings are vigorous with stiff leaves, branched flower stems. Flowers are bigger and bloom in 3 or 4 years from seed.

Crosses of *I. versicolor* x *I. virginica* var *virginica* ($2n=72$) (=x *Versi virga*) ($2n=90$). Seedlings have bigger flowers and are earlier blooming; they flower in second or third year from seed.

Crosses of *I. virginica* var *shrevei* x *I. virginica* var *virginica* (=x *virginica*). Seed gave plants with sturdy leaves and stems blooming in their second and third year from seed.

Crosses of *I. versicolor* by *I. virginica* var *virginica* ($2n=70$) gave sterile and moderately fertile plants and the same for reversed crosses.

Iris virginica var *shrevei* Northern Great Blue Flag.

This subspecies occurs in the Mississippi Valley, south to Louisiana, east to the Great Lakes, Ontario and northeast to the St. Lawrence River, as far as Quebec City. Plants are established in marshes and wet meadows. I found one plant in the turf of a football field. *I. virginica* var *shrevei* adapts better to higher pH and grows well in a slightly acid garden soil. Leaves are sturdy with a central midrib, stems are erect with some branching. Flowers show a variety of forms and colors. Seed capsule is longer than in *I. virginica* var *virginica* (7-12cm, diameter 2cm.) 3 cornered to cylindrical with 3 carpels each of one row of D shaped, dull, corky seeds, which germinate easily. Most seedlings bloom in their second year and are better adapted to northern gardens.

Natural Crosses:

Wherever *I. virginica* var *shrevei* and *I. versicolor* grow side by side they cross or backcross. (Dr. Edgar Anderson, *Introgressive Hybridisation* 1949). This hybrid population has been identified and named *I. x robusta*. I have collected such hybrids and analysed them at $2n=90$. Such populations are maintained by inbreeding. This could be part of the confusion in the identification of species. *I. x robusta* may cross again with *I. virginica* var *shrevei* (*I. x robusta* x *I. virginica* var *shrevei*). For example, *I. versicolor* 'Murrayana' (analysed at $2n=80$) is such a hybrid maintained by inbreeding. Its seeds are dull and corky. Another example, *I. versicolor* 'Tetraploid' has been analysed at $2n=200-210$ chromosomes; its forms and leaves are like *I. virginica* var *shrevei*. Plant appears to be sterile. I would class this cultivar as a hexaploid *I. virginica* var *shrevei*. *I. versicolor* analysed as $2n=105$, are in fact triploid *I. virginica*, $3n=105$.

Controlled Crosses:

I. virginica var *shrevei* x *I. versicolor* and reverse crosses have been made. In order to obtain good and fertile hybrids, take a superior clone of *I. versicolor* ($2n=108$) as pod parent and fertilise with pollen from *I. virginica* var *shrevei* ($2n=72$); seedling will be $2n=90$.

Crosses of *I. versicolor* x *I. virginica* var *shrevei* ($2n=70$) give infertile or some moderately fertile plants. Reverse crosses of *I. virginica* var *shrevei* ($2n=70$) x *I. versicolor* have a pattern more like *I. virginica* var *shrevei*. Seedlings have been analyzed as $2n=89$.

Hybrids *I. x robusta* and reverse crosses have erect leaves and stems. Many hybrid seedlings are purple-violet to brown in color during the growing season; stalks are dark purple. Flowering season is later than *I. versicolor*. The cultivar 'Gerald Derby' must be one of these hybrids.

Hybrids *I. x robusta* ($2n=90$) and *I. virginica* var *shrevei* x *I. versicolor* ($2n=90$) may be back crossed to *I. virginica* var *shrevei*, but in order to obtain fertile seeds, it should be fertilised by pollen of *I. virginica* var *shrevei* ($2n=70$). This hybrid seedling has been analysed as $2n=80$.

I have not made crosses using *I. virginica* var *virginica*. I would presume results would be the same or similar.

Iris versicolor. Bigger Blue Flag.

This is a well established species in New Foundland southward to Carolina, north to Hudson Bay and Manitoba, south toward the Mississippi Valley to Texas. *I. versicolor* prefers marshes, wet meadows, ditches, lake shores and riverbanks, but does not like to stand in shallow water for more than a few days. It has the highest number of chromosomes of any wild growing iris species, ($2n=108$). Edgar Anderson demonstrated that *I. versicolor* is an amphidiploid* hybrid of *I. virginica* var *shrevei* ($2n=70$) and *I. setosa* ($2n=38$) ($2n=108$). It acts like a tetraploid hybrid with exceptional fertility and vigour. Leaves are light green, mostly without ribs and the arching stems have 2-3 branches each with 3-4 flowers. Standards are half the size of the falls, capsule is 4-8 cm long and 2.5cm in diameter. The capsule is edged to cylindrical with 3 carpels each containing two rows of dark brown, smooth, D-shaped seeds. This is one way to identify the species.

Natural Crosses:

Introgression with *I. virginica* has already been mentioned. It also hybridises with *I. setosa* var *canadensis*. Plants have been named *I. x sancti-cyriana* (J. Rousseau. 1950). I have collected individual plants among *I. setosa* with more vigour. One of these plants had mature seeds smaller but similar to *I. versicolor*.

Controlled Crosses:

I. versicolor has been crossed with and by *I. virginica* var *shrevei* and *I. x robusta*. Intensive work involving crosses of *I. versicolor* x *I. laevigata* will be discussed in the section on the latter.

Crosses of *I. versicolor* x *I. pseudacorus* have been reported giving some hybrid seedlings. Crosses seem to give fertile seeds only if *I. versicolor* is the pod parent. My one experience with such crosses is that they have never given fertile seed from crosses involving *I. pseudacorus* as pod parent. I have some seedlings from crosses of *I. versicolor* x *I. pseudacorus* that I hope will bloom in '95.

Crosses of *I. versicolor* x *I. ensata* have been made by me and Monique Dumas-Quesnel. Again *I. versicolor* is used as pod parent and *I. ensata* as pollen parent. Only one reverse cross has given fertile seeds and only a single seedling survived and had never had any flowers. *I. versicolor* ($2n=108$) x *I. ensata* ($2n=24$) = *I. x versata* ($2n=66$). *I. x versata* is vigorous, the leaves are stiff with midribs, stems are branched, flowers are as large or larger than *I. versicolor* and there are more flowers than *I. ensata*. Flowering season is with *I. versicolor* and into the later *I. ensata* season. They are good garden plants and need a lot of water during the flowering season. *I. x versata* ($2n=66$) is in most cases infertile, but some seedlings demonstrate moderate fertility as pod and pollen parent if back crossed with *I. versicolor*. Hybrids are self sterile and do not pollinate other hybrids. The following cultivars have been registered: 'Oriental Touch', 'Enfant Prodige', 'Purple Polka', 'Violet Minuet', 'Bee Flamenco', 'Sweet Tango', 'Red Raspa', 'Purple Cha Cha', and 'Go Go Boy'.

(*Amphidiploid is the original term for an allotetraploid in which the progenital species were strictly diploid, e.g. *I. pumila* (tetraploid) arising from *I. tatica* x *I. pseudopumila*- both diploid. *I. pumila* ended up keeping nearly all the chromosomes from both parents. Anne Blanco White.)

Back Crosses with I. versicolor or I. ensata:

From our first back cross of *I. versata* x *I. versicolor*, we got one pod with 12 fertile seeds. All germinated. From 12 plants we got two with exceptional vigor which were analyzed as $2n=120$ (Dr. James Waddick has suggested these be named *I. x bivensata*). The hybrids are vigorous with strong leaves; stems have up to 6 branches, and flowers are larger than in *I. versicolor*. They are fertile if crossed by same or other $2n=120$ hybrids which are stable. They accept pollen from *I. x versata*, *I. versicolor*, *I. virginica* and their hybrids. Registered cultivars are 'Belle Promise' and 'Nouvelle Age' (*I. x versata* ($n=54$) x *I. versicolor* ($n=38$), $2n=120$). From the same pod we analyzed 8 plants as $2n=38$ *I. setosa*. Plants were fertile and the next generation was analyzed at $2n=38$. These *I. setosa* are slightly more vigorous, but similar in pattern to *I. setosa* var *canadense*. This happened repeatedly in similar crosses, which led to vivid discussions, but was never well explained. The same pod also gave 2 plants later confirmed by chromosome analysis as $2n=70$, *I. virginica* var *shrevei*. These plants, selfed, had fertile seeds. Seedlings have been analyzed at $2n=70$. We never got plants with $2n=72$, as one may find in wild stands.

Problems: Does *I. x versata*, if backcrossed to *I. versicolor* act like a tetraploid and as a diploid in combining parent plants related to *I. versicolor*, a new combination (*I. versicolor* $2n=108$ plus $n=12$ from *I. ensata*) with $2n=120$.

Back Crosses of *I. x versata* by *I. ensata* analyzed as $2n=78$ ($66+12$): This back cross is rare. Plants are sterile as both pod and pollen parents. Classed as *I. x reensata* and the registered cultivar 'Enfant Prodige' is such a hybrid. The flower pattern is similar to *I. ensata*, leaves arched, stems branched and with vigorous growth.

I. laevigata Japanese Iris Kakitsubata.

I. laevigata occurs in Japan and Eastern Asia. This water iris grows wild in marshes, ponds, on lake shores and standing in shallow water. Its height is from 30-90cm; leaves are light green without obvious midribs; stems are rigid, 70cm high, bearing 2-4 flowers up to 15cm in diameter; falls are ovate and drooping, standards upright to 6cm long and 1.5cm wide. Capsules are elliptical-cylindrical, 7cm long, about 6cm in diameter; seeds are flat, semi-round, brown and glossy. Flowering in May- June, some plants reblooming. This beautiful iris is little known and rarely cultivated. The species has been confused with *I. ensata* (syn. *I. kaempferi*) which is not a water iris, but both have been admired, cultivated and improved by devoted people in Japan. Dr. Akira Horinaka published a book relating to wild and cultivated *I. laevigata*. He describes more than 70 cultivars poorly known in the Western world. We should grow more and improve *I. laevigata* in our ornamental gardens and learn how to cultivate and protect them during our long, cold winter months.

Controlled Crosses of I. laevigata:

Akira Horinaka has made crosses using *I. versicolor* ($2n=108$) as pod parent with *I. laevigata* ($2n=32$) as pollen parent. Fertile seeds gave vigorous seedlings. A cross of *I. laevigata* as pod parent and *I. versicolor* as pollen parent did not produce any fertile seeds. As in crosses of *I. versicolor* x *I. ensata*, *I. versicolor* being a hybrid proves to be more receptive to other pollen. Hybrids are called 'Versi-lae' and have more vigor and larger leaves than both parents; stems are branched with 3-4 flowers per branch; flowers are the size of *I. versicolor* but their season is earlier, their falls larger and their standards longer. Flowers that I have seen, and color photos in Dr Horinaka's book all show the same pattern in the falls, inherited through hybridizing with *I. setosa*. Hybrids appear to be self sterile. Akira Horinaka reported obtaining seeds from some pods. It may be that hybrids are crossed back to *I. versicolor* as a hybrid x *I. versata*. I obtained a red hybrid from the hybridiser and have back crossed it with *I. versicolor* and got two good seeds. Many of the hybrids are registered and named in Japan. 'Jina' (purple-red), 'Akai hikari' (clear wine-red), 'Suma' (pink), 'Anna' (wine), 'Mari' (mauve-rose), 'Rima' (dark pink), and many others still unnamed. The same hybridizer has crossed *I. setosa* ($2n=38$) by *I. laevigata* ($2n=32$) and obtained a seedling similar to *I. setosa* var *hondoensis* ($2n=53,54$) which may be a natural hybrid of these two species. Is it a water iris? Dr. Yabuya reported obtaining amphidiploid seedlings from crosses between *I. laevigata* and *I. ensata* from embryo cultures treated with colchicine.

Crosses of *I. virginica* x *I. laevigata* have been reported, there is no mention whether the hybrids are fertile or not.

Crosses with *I. pseudacorus* have been reported from England. *I. pseudacorus* ($2n=34$) x *I. laevigata* ($2n=32$) seedlings have been reported as growing vigorously.

Akira Horinaka reports a cross of Louisiana Iris using that as the pollen parent and *I. laevigata* as pod parent, from which he obtained seedlings.

I. ensata (syn I. kaempferi). Japanese Iris. Hanashôbu.

This species is often confused with *I. laevigata*, but *I. ensata* (Thunb.) has yellow signal lines extending down the hafts from which white lines extend over the fall. Leaves are 2.5cm wide compared to only 1.5 in *I. ensata*; the capsule is 7cms long and 2.5cms in diameter, whilst that of *I. ensata* is 4.5-6cms long and 1.8cms wide. *I. ensata* seeds are maroon brown, flat, semi-rounded, and arranged in three carpels. Seed collected from cultivated plants may give seedlings with the whole color spectrum of *I. ensata*. It has been cultivated and improved by lovers of Hanashôbu for over 500 years. Larger flowers and color variation in modern JI's have made it popular. Developments made by Japanese and American hybridizers have produced new forms with an extended bloom season. With the increasing numbers of tetraploid hybrids, one can expect new progress by inter- and intra- specific crosses.

Inter-specific Crosses of I. ensata

I. ensata ($2n=24$) used in most crosses has been made using this species as the pollen parent.

Crosses of *I. versicolor* x *I. ensata* have been described under *I. versicolor*. It is worth mentioning that the dominance of most expressions in hybrids is from *I. versicolor*; only flower color is dominated by *I. ensata*. Crosses involving tetraploid *I. ensata* should improve expressions and hopefully establish fertility in hybrid seedlings.

Crosses involving *I. virginica* x *I. ensata* have given seeds which have been raised using embryo culture.

Crosses of *I. laevigata* x *I. ensata*; amphidiploid hybrids were produced using colchicine treatment. Crosses of *I. ensata* as pod parent x *I. laevigata* did not produce any fertile seeds.

Crosses of *I. pseudacorus* x *I. ensata*. Successful crosses have been reported (Tomina & Sakurai '72 and Yabuya '84 & '85), chiefly by using *I. pseudacorus* as pod parent, resulting in mostly yellow flowers resembling that species with the markings of JI's. No reverse cross has been reported. I made up to 100 crosses both ways but never got any fertile seed when *I. ensata* was the pod parent. Best results have been obtained from crosses of *I. pseudacorus* 'Ecrû' (white, from seeds obtained from SIGNA seed exchange) as pod parent pollinated by purple *I. ensata* seedlings. The capsule had 4 seeds, producing 4 seedlings which bloomed the second season. First to bloom was a white with a pink halo surrounding its yellow signal, and yellow style arms. The second was purple-wine with a darker halo, surrounding a yellow signal, with pink and orange style arms. The fourth to flower was rose veined dark purple, a purple halo around a yellow signal and creamy orange style arms. Unfortunately these hybrids tend to have yellowish leaves and are sterile. In using tetraploid plants of both species in future crosses one could obtain fertile hybrids.

I. pseudacorus. Yellow Flag

The only representative of Series *Laevigatae* found in Europe and North Africa. This has been introduced into North America where it is naturalised in marshes, on lake shores and in wet meadows. Plants grow 30-100cms high; leaves are grey-green, 30-100cms long, 2-3cms wide; flowers are yellow, 9-11 cms wide with a brown pattern in the centre, falls 7cm long, 4-5cms wide; standards are 2.5cms long, 0.5cms wide; capsules are 7-10 cms long and 1.2 cms wide, smooth and cylindrical; seeds are D-shaped, flat, light brown and arranged in one row in each of the 3 carpels. Pendant capsules are ornamental in the fall, seeds are easily grown. This is a water iris and will grow in still water as much as 30cms deep; they may form masses and invade watersides. (Best I've seen are at Slimbridge. No sheep. Ed.) Capsules should be removed right after blooming. Will also grow in dry soil. Several varieties and natural mutations are well known: p. var *bastardii*- sulfur yellow flowers; var *folia-variagata*- leaves with yellow stripes; a white flowered form; var *flore-plena*- double flowering; 'Superba' (syn 'Golden Queen')- yellow, without brown pattern; 'Keukenhof'- dwarf form to 30cms; 'Ecrû'- white; 'Turnipseed'- creamy yellow; 'Primrose Monarch'- clear yellow; 'Fahl Ilge'- grayish yellow tetraploid; 'Ilgenold'- golden yellow tet.; 'Beuron'- pale yellow tet.; 'Donau'- medium yellow tet.; 'Sun Cascade'- new double yellow; 'Linda West'- white rebloomer; 'Golden Daggers'- falls notched, yellow.

Crosses of *I. pseudacorus*: 'Holden Clough'- natural cross of *I. chrysographes* x *I. pseudacorus*; The following are all 'Holden Clough' seedlings; 'Roy Davidson', 'Golden Dagger', 'Phil Edinger', 'Holden's Child', 'Berlin Tiger', and 'Holden Clough' x *I. versicolor*- 'Dissappointer'.

Conclusion: It is amazing to read reports concerning Iris species crosses from around the world. Lots of pioneering work has been accomplished in hybridizing with these species. Intra- and inter-specific crosses have been made in order to obtain better plants for the home garden. With better knowledge, more study, and increased observation, combined with present technology, we are able to accomplish things that were considered unrealistic; but they no longer are. Hybridizing is like building bridges- who is the first to cross them? We are all optimists. I see your garden full of wonderful, reblooming beardless irises. Do I have the right to dream? To all Irisarians- a good hybridizing and growing season!

Tony Huber.

(Note: If any group member would be interested in the inclusion of items on reblooming beardless irises please let me know. Philip Allery)

Appendix: Registered cultivars of *I.versicolor* (2n=108)

Cultivar	Height	Color	Signal
'Kermesina'	60cms	F. red. S. dark pink	Yellow
'Carolinaea'	50cms	F. light blue, S. blue (Small flowers)	White
'Between the Lines'	40cms	F & S lilac on white	White
'Candystriper'	45cms	F. & S. white veined pink	
'Cat Moussam'	65cms	F. dark violet blue S.violet	Yellow
'Claret Cup'	50cms	F. wine red, S. dark pink	Yellow
'China Blue'	45cms	F. clear blue, S. lilac	White
'Mint Fresh'	45cms	F. white veined red	Yellow
'Little Rhyme'	40cms	F. & S. white	Green
'Mysterious Monique'	50cms	F. dark violet purple veined white	
(Mysterious Monique's pattern appears to be a hybrid of <i>I.versicolor</i> x <i>I.sibirica</i> (2n=28))			
'Rougette'	45cms	F. wine red, S. dark pink	Yellow
'Royal Purple'	50cms	F. purple, S. violet	?
'Shape Up'	45cms	F. red violet, S. purple	White
'Whodunit'	65cms	F. & S. white veined violet	
'Wild Hearts'	55cms	F. & S. orchid pink	Pale brown
'Wild Wine'	50cms	F. wine red S. dark pink	Yellow

Cultivars of *I.versicolor* registered by W.H.Perron:

'Canaletto'	70cms	F. bright purple, S. light purple	Yellow
'Chagall'	60cms	F. violet, lilac edge, S. lilac veined purple	Yellow
'Cezanne'	70cms	F. violet zoned white, S. violet	Yellow
'Da Vinci'	70cms	F. deep violet zoned white, S. violet.	Bright yellow
'Goya'	65cms	F. violet, S.lilac (spice fragrance)	Yellow
'Kierghoff'	50cms	F. light purple red, S. light red	Bright yellow
'Matisse'	80cms	F. dark violet, large white center, S. blue violet (sweet fragrance)	White
'Monet'	60cms	F. pale violet, S. lilac	Yellow
'Riopelle'	65cms	F. striped rosy mauve over large white zone, S. light rosy mauve (sweet frag)	Yellow
'Pellant'	65cms	F. violet, large white centre, S. med. violet	Yellow
'Vlamink'	70cms	F. red purple, S. deep violet blue	Yellow

Registered cultivars of *I. x versata* (*I.versicolor* x *I.ensata*)

'Bee Flamenco'	110cms	F. light mauve, darker border, purple halo around deep yellow veined signal, S. light mauve (sweet fragrance).	
'Go Go Boy'	105cms	F. veined light violet, white lines near centre, S. light violet, dull yellow signal haloed violet.	
'Oriental Touch'	105cms	F. dark medium violet, S. medium violet, central line near pointed light creamy yellow signal	
'Purple Cha Cha'	105cms	F. dark violet, creamy line below dull yell signal, S. violet (sweet frag).	
'Purple Polka'	105cms	F. & S. dark violet (slight sweet fragrance)	Bright yellow
'Red Raspa'	105cms	F. dark purple, darker around signal, S. purple-violet	Dark yellow
'Sweet Tango'	90cms	F. light blue, S. dark violet blue	Pointed bright yell
'Violet Minuet'	105cms	F. dark violet blue, lined white @ signal base, S. blue violet (sl.sw.frag).	Creamy yellow

Registered Cultivars of *I. x biversata* (*I.versicolor* x *I.ensata*) x *I.versicolor*)

'Nouvel Age'	75cms	F. dark violet purple, S. purp violet	White & yellow, pointed
'Belle Promesse'	90cms	F. velvety deep violet, darker around sig, S. violet blue	Dark yellow, sanded dark purple

Registered Cultivars of *I. x reensata* (*I.versicolor* x *I.ensata*) x *I.ensata*)

'Enfant Prodiges'	110cm	F. violet blue, signal haloed deep violet, S. lilac, styles white	Deep yellow
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('Oriental Touch' x *I.ensata*)

I must apologise to M. Huber for publishing his speech so much later than the others from the St. Louis Symposium of '95, but I didn't have a transcript of it when the last NI went out. He has most kindly sent an abstract of his speech given this year in Leesburg, Virginia, on 'Hybridisation with *I. versicolor*.' which will appear in the next NI. I can only hope that he will be kind enough to send us other updates. Our thanks go again to Dr. Waddick for making this material available.

Ed.

An Adaptation of 'TETRAPLOID SIBERIANS FROM A GERMAN POINT OF VIEW'

Max Steiger, the Iris breeder from Southern Germany who became famous for his CaRe - strain of JI's (1), may have been the first German hybridizer to convert a Siberian iris to the tetraploid level; in 1964 he described the improved characteristics of an *I. forrestii* he had made tetraploid by colchicine treatment. I found this development very interesting. However, since Max was a very shy distributor of his breeding products, all his achievements were lost when he died a few years later. Tetraploid Siberians had nearly disappeared from my memory, when I noticed Currier McEwen's article on this subject in the BIS Year Book of '66 (2). Much in contrast to Mr. Steiger's short note, this article was a scientifically well based and detailed description of how to double the chromosome set of an iris. My interest was immediately revived, and I decided to use the method with my own seedlings. I started in 1971, and since then we have registered the following 19 tetraploid Siberians.

'Breiter Start**	1978	mid- blue.	'Berlin Ruffles'	1993	mid- blue
'Lichterfelde**	1978	mid- blue, white lines on falls	'Berlin Sky'*	1993	light blue
'Wide White #	1979	white	'Big's Child'	1993	mid- blue, large flowered.
'Fanny Heidt'	1980	dark blue	'Germantet One'	1993	deep blue
'Zweites Hundert'	1984	light mid- blue	'Prussian Blue'	1993	deep, velvety blue.
'Weisse Etagen'	1984	white	'Silberkante'	1993	dark blue, white edge.
'Stout Darling'	1988	greyish mid- blue	'Berlin Lance'	1993	white
'Viel Schnee'	1990	white	'Dunkler Wein'	1995	dark wine- red
'Berlin Purple Wine'	1990	wine-red	'Plissee'	1995	dark blue, white edge
			'Schwefelbuete'	1995	light yellow/ white

First generation tetraploids. # Periclinal chimera, genetically diploid. With the exception of 'Weisse Etagen', all these cultivars either are, or contain our own conversions. (*A chimera in which the distinct tissues are arranged concentrically. Anne Blanco White.)

In 1972 Currier generously sent me some of his early tetraploid seedlings. Among them were two second generation ones. When I found the first possibly converted plants among my own treated seedlings, I was therefore able to test them by using their pollen on proven tetraploids. The cultivars 'Fanny Heidt', 'Weisse Etagen' and 'Zweites Hundert' come directly from these crosses. Another source of early tetraploid varieties was Eckhard Berlin from southern Germany, who had started his colchicine treatments slightly earlier than I did. His varieties 'Laurenbuhl' and especially 'Nicklassee' (Lake Nicklas) were used in my breeding program. 'Germantet One' is a cultivar derived from solely German conversions. Later on I used named varieties from Currier McEwen and more recently, those from Bob Hollingworth, as partners for my own conversions. The seedlings from crosses with Bob's varieties are still under observation. In our breeding we have always looked for seedlings with at least a touch of the classical Siberian shape (upright stds, semi- flaring falls), but the crop of this type was low in number. Since 1971 I have done some colchicine treatments of 28chr. Siberians every year, and conversions in all color classes have appeared. A conversion we have called 'Big Potential', which is not yet registered, had proven to be a powerful parent for large flowered varieties. Most of the newer conversions have only been used for one or two test crosses and their genetic potential is still insufficiently explored.

Temporarily forgetting my opinion that 40 chr. siberians should be placed in a separate series Chrysographes, I would like to add some notes on tetraploid Sino- Siberians. The real pioneer in this field is Eckhard Berlin, who once had a group of a dozen converted seedlings in different colours. In addition to pollen he allowed me to take from exhibition spikes of this group, he sent me a black- violet seedling which I gave the garden name of 'Eckhard's Dunkle'. For reasons which I didn't understand, Eckhard did not get any second generation seed from his group of Tetra- Sino- Siberians. When I pollinated 'Eckhard's Dunkle' with pollen of my own Sino- Siberian conversions, I got some seed yielding second generation plants with clearly tetraploid characteristics. Most of them were again the dark violet colour, but the plants were tall and vigorous, producing large flowers with nearly upright standards. In the meantime I am growing a forth generation of this type and some variations in colour are beginning to appear. However, I am somewhat puzzled by the still rather low fertility of these hybrids.

Looking back over our joint efforts with tetraploid Siberians, we can ask three questions:

What Have We Achieved? We have larger and broader flowers in deeper and more velvety colours, strong ruffling, stronger flower stems and wider leaves. The availability of tetraploid Siberians has made hybrid groups like Sibcal, Sibcolor and 3/4 Sibirica- 1/4 Setosa hybrids possible.

What Have We Lost? We have nearly lost the classical shape of the Siberian flower as Currier forecasted in his BIS article (2). Most tetraploid Siberians have to be admired from above and have limited garden effect from a distance. The fertility of even advanced generation cultivars seems to be reduced compared to diploid cvs (at least in my climatic conditions). The floriferous lifetime of a clump seems to be reduced in many cases, due to the production of stronger roots, rhizomes and leaves. This leads to a higher frequency of replanting.

Where Have We Failed? We have failed to develop and apply successfully a clone treatment which would have enabled breeders to utilize the best diploid in 'undiluted' form in the tetraploid breeding process. The success of such a method is demonstrated by the enormous speed of development of tetraploid daylily cultivars. Instead of this we are using seedlings of uncertain genetic quality as the source of our tetraploid breeding material. We failed, perhaps for natural reasons, to induce the increase of the gene pool. That could have happened by merging the 28 with the 40 chr. Siberians at the tetraploid level. Eckhard Berlin claims to have some hybrids from crosses of the two tetraploid groups, but my own repeated efforts have never produced a single viable seed. We failed to spread interest in our own conversion work and tetraploid breeding efforts to more than a handful of enthusiasts world wide. The future of this fascinating field of breeding is, therefore, not yet safely established.

(1) Steiger, Max. 1964 Tetraploide Iris kaempferi. Nachrichten- blatt der Deutschen Iris- und Liliengesellschaft Nr.3/1964:87- 89

(2) McEwen, C., 1966. Tetraploidy in Siberian Irises. The Iris Yearbook 77-84. London: BIS 1966

THE NEED FOR IRIS RESEARCH

In my role as scholarship chairman, overseeing the awarding of our AIS scholarship for graduate study in the plant sciences, I receive every year research proposals which make me green with envy. I keep thinking- if only we could apply some of the methods outlined for other plants to increasing our knowledge of the genus *Iris*! Our byelaws state that 'encouragement and support of scientific research' is one of our societal goals. I believe that increasing our support specifically for iris research would be desirable. We have been fortunate in the past to have had good basic studies of chromosomes (Randolph) and floral pigments (Henderson), but much remains to be done. Many questions about iris genetics and taxonomy which could be answered by today's methods of studying DNA remain unanswered. The problem of pests and diseases probably heads the list. Could genes for borer resistance be inserted into the bearded iris genome? Disease resistance is being added to crop plants- it is not outside the realm of possibility for iris! (Though perhaps impossibly expensive at present.) Are there naturally rot resistant species in the wild with such a gene or genes already available for crossing into the bearded or beardless groups? We should check this out.

Although we deal with the variability of color and pattern with every cross we make, we still do not know what causes, for instance, the stitched or dotted pattern we call *plicata*. Dotted patterns are not limited to bearded irises. They exist in the beardless as well, in such things as hybrid 40 chr. Siberians, and in *I. laevigata*, and in the Japanese. Are the genes for dotting the same in all these groups? The causes of anthocyanin dotting have been studied in other flowers- do any of these causes apply to irises? Veining patterns on the falls are essentially in the same position throughout the genus- are they controlled by the same gene or genes? Could pattern- that is, petal borders and centres (spots or signals of contrasting colors- be due to mutations of the same sort that cause white- edged variegated leaves? That is, are they mutations which occur in one or more of the structural layers that make up the leaf or petal rather than in the flower as a whole? And if surface layers can differ from the interior layers from which pollen and ovules are developed, what does this do to color ratios?

What makes the old diploid *variegata* 'Honorabile' so accident prone? Over the years it appears to have produced more sports than any other bearded iris; 'Sherwin-Wright', a yellow self, 'Kaledoscope' with erratic splashes of anthocyanin; 'Joseph's Coat', with erratic splashes of yellow; also an un-named white/violet amoena. All of these revert to the red and yellow colors of 'Honorabile' upon occasion. Seedlings of 'Sherwin Wright' come out with purple falls as if 'Honorabile' had been used instead, and 'Kaledoscope' and 'Joseph's Coat' set few if any viable seeds. Do the germ cells undergo mutation as well? How can erratic, reversible mutations affect anthocyanin pigment in one plant and yellow plastic pigments in another? Is this the same mutation that Allan Ensminger has been working on in 4n TB? This peculiar behaviour should not be dismissed as of interest to MTB breeder only. After all, 'Honorabile' was among the background varieties that went in to today's TB. Furthermore, at diploid level, this sporting propensity appears to be a source of additional variations in color and pattern.

In TB, what is the barrier that keeps us from having petals as vividly tangerine colored as the beards? I'm thinking of our pink flowers with watermelon beards- why are there no petals of this intensity of plastid pigment? Black irises can have equally black beards- apparently there is no barrier to anthocyanin intensity between beards and petals. Since we now have beards of various colors on flowers of contrasting colors, pigment must be inherited independently in beards and falls- what limits the lycopene intensity in petals? If we could break this barrier, we would have tomato red irises right now! Pigment studies in groups other than bearded would be helpful, especially with regard to presence or absence of flavone co-pigments.

Chromosome studies are still needed on some of the recently introduced species. Surely, providing chromosome counts on new species as they come into cultivation ought to be an ongoing project.

Isozyme analyses are used to determine relationships between species in other genera. There are many questions about the genus *Iris* that would benefit from this and related types of research. For instance, analysis of the various 'species' now lumped under *I. spuria* might make it possible to determine which, if any, actually warrant specific status. Are the species with 44 chr. merely tetraploid forms of the extant 22 chr. diploid species, or did they arise as hybrids between extant or extinct species? *I. versicolor* was considered by Edger Anderson to have arisen as a post-ice-age hybrid between *I. virginica* and *I. setosa* subsp. *canadensis*. There is no real doubt of this, and Tony Huber tells me that if one grows enough *I. versicolor* seedlings, a few will revert to resemble their long- ago parents. Studies on this trio could add to our information about the behaviour of fertile inter- specific hybrids. They might also tell us whether *I. setosa* subsp. *canadensis* is deserving of specific status, as some have thought. How much does it differ genetically from the Alaskan forms? Might we obtain even better garden flowers from crossing *I. virginica* with the Alaskan forms, with their taller stems, better branching, and brighter, clearer colors? Does *I. tenuis*, the narrowly endemic species from Clackamas County, Oregon, really belong with the Crested Irises? A serious attempt needs to be made to cross it with such things as *I. cristata* and *I. gracilipes*. Studies are needed to ascertain the degree of relatedness or non- relatedness. How closely related are the *Pseudoregelias* to the bearded? Or, for that matter, are they related to the Crested? How is it that Pacific Coast Irises and the Chinese Siberians cross so readily, separated as they are by the entire Pacific Ocean? (Plate tectonics? Ed) Brian Mathew, in his book *The Iris*, has lumped a wide range of bearded 'species' under *I. germanica* for lack of information about their real relationships. Here is another problem begging for contemporary research. Additional collection of plants from Turkey and other places would be helpful in sorting out this puzzle. Several blue- flowered irises which are not part of the Louisiana hybrids occur to the south and east of the Mississippi delta. How these relate to *I. hexagona* is still debatable....should they be varieties or are they species in their own right?

Introducing tetraploidy with colchicine has been used successfully with Japanese irises and with Siberians. Tomas Tamberg has produced fertile Cal-Sibes this way. Could that technique be applied to other groups of now- infertile hybrids? For that matter, would it be to our advantage to turn some of the hardiest, most disease resistant diploid bearded into tetraploid to increase our TB gene pool, which has had little augmentation in decades?

Our AIS members work hard at developing many different sections of the genus *Iris*, and at promoting them as worthwhile plants for diverse garden uses. Basic research into taxonomic relationships, further identification of pigments, and genetics of pattern inheritance, have the potential for opening up additional fascinating hybrid groups, as well as adding to general botanical knowledge. Our local societies and regions have already shown an interest in supporting our general scholarship program financially. We hope they will consider being even more supportive of a scholarship specifically for iris research.

Jean Witt. AIS Bulletin #301 April 1996

UP-DATE:

In the President's Message in the Fall, 1996 edition of the SIGNA Newsletter he announces that the SIGNA Scientific and Research Grant Committee have awarded \$1500 to scientists in China to support research efforts on iris. There is much in this newsletter which will be of interest to Group members so I will send a copy to Sue, your Editor, for her attention.

Philip Allery.

Prof. Dr. Nasr El- Emary Reports on his Research

I am always hesitant about writing on my irises for the Newsletter. This is because I should write something meaningful to the friends reading it, especially after the excellent efforts made of writing on a computer, printing on good quality paper and improving its contents. Anyhow, the story of my irises started more than 20 years ago. I have received seeds from the BIS and AIS and also from Mr. Bruce Richardson of Canada who kindly sent me rhizomes of many species. Now I can say that I have 34 types of very healthy, beautifully flowering and multiplying species. At the same time I have collected seeds from some of them and I will try to plant them this autumn. Although the temperature during the summer in Assiut ranges from 35- 45 °C, I have managed to protect my Irises during these hard times by sheltering them in the shade of other plants.

The most bothersome problem to me as a phytochemist, is that some of the species which I have received with specific names, started to give flowers of different colours. I think a species should give one and the same distinctly coloured flowers, otherwise there might be a suspicion that they are hybrids. (Anne agrees with you. Ed.) In phytochemistry, studies with hybrids always give false results and every collection gives different results. So, I have to watch my irises carefully and only study the chemistry of pure species and not hybrids. Although I am not an iris grower or a florist, I have succeeded in maintaining 34 of over 102 species in a very good condition suitable for my studies, and I hope to be able to increase the number of pure species in my collection.

As a Pharmacist and phytochemist I am concerned mainly with isolating biologically active compounds from natural sources, especially medicinal plants. Nowadays, the hazards of using synthetic drugs are well documented and observable everywhere in the drastic carcinogenic reactions of many drugs. The World health organisation (WHO) launched a campaign in 1977 to return to natural medicines called the 'Green wave' or 'Back to Nature', stating that we should go back to using natural sources in order to obtain safer drugs for the treatment of virulent diseases like cancer, AIDS etc..... There are published claims for possible anti-cancer or anti-AIDS compounds from different plants including some Iris species. So, I am interested in studying the chemistry of many species, although up till now our results have not been satisfactory. This fact of the presence of anti-cancer compounds from Iris species will add to the importance of these beautiful ornamental plants.

In plant taxonomy and chemotaxonomy, there are many facts upon which plant species have been classified. Each species has its own specific biogenetic and enzymatic pathway systems for building up its active compounds, and samples collected from the same species in different locations show negligible differences on chemical analysis. On the other hand, hybridization between different species introduces different genetic factors which merge and produce different morphological and biogenetic characters in the new generation. This fact is reflected in the biogenetic pathway and changes the enzymatic system from that of the original species, thus changing the mechanism whereby compounds are built up. So it is preferable in our phytochemical studies that we have pure species for analysis and so ascertain that our results are reliable.

List of Iris species that grow very well in our Experimental Station of Medicinal Plants:

From Seeds:

I. atropurpurea	I. pardancanda	I. spuria 'Lenkoran
I. carthaliae alba	I. sanguinea violaceae	I. spuria 'Lovely One'
I. carthaliae yellow / white	I. spuria 'Bali Bali	I. spuria 'Now This'
I. dichotoma	I. spuria 'Barbara's Kiss	I. spuria 'Universal Peace'
I. musulmanica	I. spuria 'Finally Free'	I. spuria 'Zeal'
I. orientalis	I. spuria 'Janice Chesnik'	I. spuria mixed yellow

Iris species from seed that do not thrive: I. sintenisii (weak); I. spuria 'Elan Vital' (weak with unhealthy growth); I. tectorum (weak).

From Rhizomes:	I. croatica; tall type	I. nelsonii (yellow)
	I. croatica; short type	I. pallida
	I. halophila var alba	I. swertii
	I. kashmeriana	

Iris species from rhizomes which do not thrive: I. tectorum blue form (weak) : I. versicolor (weak).

On the other hand, I have lost the following species and hope to re-acquire them and thereby complete my collection. I especially appreciate receiving any species of bulbous Irises since I only have the one bulbous species- I. tingitana:

I. aphylla (var polonica), I. albertii, I. balkana, I. benascens, I. bolleyana, I. bracteata, I. bucharica, I. confusa, I. drasistensis, I. foetidissima, I. fortioissima (red seed), I. graeberiana, I. graminea, I. lillyrica, I. litalica, I. japonica, I. Jordana, I. kerneriana, I. lactea, I. laevigata, I. magnifica, I. milesii, I. nelsonii (red), I. nertschinskia, I. orientalis, I. pontica, I. reginae, I. samariae, I. sanguinea, I. sanguinea violaceae, I. setosa, I. setosa (blue-violet), I. sisyrinchium, I. tenax, I. trosana, I. varbossiana, I. versicolor, I. versicolor (pink), I. virescens, I. virginica, I. xiphoides, I. xiphium.

Prof. Dr. Nasr El-Emary, Dept. of Pharmacognosy, Faculty of Pharmacy, Assiut University, Assiut 71526, A.R. Egypt.

Nasr has sent photos to show just how contented the thriving ones are, and they do indeed look rather happy. Anyone who can help him in his quest for more pure species to grow for his research, I'm sure he'd be very pleased to hear from you.

Ed

NOTE: The B.I.S. has a scheme for sending plants abroad to those countries which require a phytosanitary certificate. Details will be given in the next newsletter.

Philip Allery

Extracts from & adaptation of: STUDIES ON THE FLOWER PIGMENTS OF JAPANESE GARDEN IRIS, *Iris ensata*. Thunb.

Introduction: A main objective in the breeding of Japanese garden irises is the creation of novel flower colors. This species produces purple, reddish purple, bluish purple, light purple, pink and white flower colors due to flavonoid pigments, the main components of which are anthocyanins. Under the influence of flavones, the flower colors become further modified. Carotenoids play only a minor role at the base of the falls. In spite of these variations, this plant is lacking in flower colors such as blue, red, yellow and orange. Therefore, to find useful anthocyanins for breeding and to clarify the blueing effect on the flower color due to copigmentation between anthocyanins and flavones, we have analyzed the anthocyanins and flavones of Japanese garden iris and its wild forms by high performance liquid chromatography (HPLC) procedures. Anthocyanins consist of an aglycon, an anthocyanidin, linked with one or more sugar residues as occasionally with one or more acid groups. The most important anthocyanidins are Pelargonidin, Cyanidin, Peonidin, Delphinidin, Petunidin and Malvidin. These differ only in the degree of hydroxylation and methylation of the B-ring. All of the principal anthocyanidin pigments listed above except Pelargonidin occur in Japanese garden iris.

Table 1: Types of major anthocyanins in flowers of *Iris ensata*:

No.	Types of major anthocyanins
1	Delphinidin 3RGac5G (delphinidin 3- (p- coumaroyl) -rutinosido -5- glucoside.)
2	Cyanidin 3RGac5G
3	Peonidin 3RGac5G
4	Malvidin 3RG5G- Petunidin 3RG5G
5	Malvidin 3RGac5G- Petunidin 3RGac5G
6	Petunidin 3RGac5G- Malvidin 3RGac5G
7	Petunidin 3RGac5G- Delphinidin- 3RGac5G
8	Cyanidin 3RGac5G- Peonidin 3RGac5G
9	Malvidin 3RGac5G (malvidin 3- rutinosido -5- glucoside.)
10	Petunidin 3RGac5G

As shown in Table 1, the cultivated varieties and wild forms of Japanese garden iris are classified into 10 types on the basis of different components of major anthocyanins. The most important for this discussion are the first five. Delphinidin 3RGac5G, cyanidin 3RGac5G and peonidin 3RGac5G are useful for the creation of novel flower colors such as blue, red and magenta. Malvidin 3RG5G-petunidin 3RG5G is useful for deacylation of other anthocyanins such as cyanidin 3RGac5G, peonidin 3RGac5G and delphinidin 3RGac5G. Malvidin 3RGac5G-petunidin 3RGac5G is the most common among major anthocyanin types. Therefore, it is regarded as the basic one for the species.

The breeding strategy for a blue flower: Delphinidin is a key anthocyanin for breeding a blue flower (Saito 1989). In our studies the variety 'Chitosehime' was the only one containing delphinidin 3RGac5G but its flowers are bluish purple and not truly blue (Yabuya 1991). On the other hand, there are some variation of flower colors within some anthocyanin types, e.g., malvidin 3RGac5G- petunidin 3RGac5G type varieties which exhibit flower colors such as purple, reddish purple and bluish purple (See Tables 2 & 3. Notably, the bluish purple varieties 'Suiten- isshoku', 'Hekikai' and 'Yokonotama' and showed stronger blueing effect on the flower color than 'Chitosehime' in spite of the latter's delphinidin content. Table 2 presents comparison of flower colors, the visible max (the wavelength of the light of maximum absorption) of fresh flowers, anthocyanin types, and flavone contents among 11 varieties. Among the 10 malvidin 3RGac5G- petunidin 3RGac5G type varieties, flower color variation such as reddish purple, purple and bluish purple were observed, and the bluish purple varieties showed the longest max of fresh flowers, followed by purple and reddish purple ones. (Table 2 (Omitted here. Ed)). This shows that the blueing effect on the flower color of the varieties is indicated by the max and the flavone content among the malvidin 3RGac5G- petunidin 3RGac5G type varieties, e.g., their bathochromic effect (positive shifts in the wavelengths of the maximum light absorption) was significantly correlated with their flavone content ($r = 0.887^{**}$) (Fig 2. (No scanning facility, sorry. Ed)). Flower colors are known to be influenced by copigmentation and the vacuolar pH values of epidermal flower cells (Takeda 1980, Brouillard 1988, Goto & Kondo 1991). Table 3 (Omitted here. Ed) indicated that there was no significant correlation ($r = 0.176$) between max and pH of the fresh flowers. Hence there is no particular relationship between colors and pH of flowers among malvidin 3RGac5G- petunidin 3RGac5G type varieties of Japanese iris.

HPLC chromatograms of anthocyanins and flavones in the blueish purple varieties of malvidin 3RGac5G- petunidin 3RGac5G type, 'Suiten isshoku', 'Hekikai' and 'Yokonotama' are shown in Fig 3A- C and 4A-C. All of these varieties were characterised by the same two major flavones, one of which was identified as isovextrin (apigenin 6- C- glucoside, Fig 4A-C). The above results, therefore, indicate that the blueing effect on the flower color of the blueish purple varieties depends on copigmentation between the anthocyanins (malvidin 3RGac5G and petunidin 3RGac5G) and the flavones (isovextrin and the unknown one). The HPLC chromatograms of the anthocyanins and flavones in the delphinidin 3RGac5G type variety 'Chitosehime' are shown in Figures 3D and 4D and are characterised by the low flavone content, with isovextrin the only major flavone (Table 3, Fig.4D). Moreover, the blueing effect on the flower color in this variety was clearly weak, compared with the blueish purple varieties in the malvidin 3RGac5G- petunidin 3RGac5G type as shown in Table 2. Therefore, in spite of its delphinidin content, 'Chitosehime' is a poor cultivar for blueing effect because of its weak exhibition of copigmentation due to its low flavone content.

From the above results, the achievement of blue flowers in Japanese garden irises may be obtained through copigmentation between delphinidin 3RGac5G- petunidin 3RGac5G type. Specifically, one hybridization between the variety 'Chitosehime' and the blueish purple varieties may be suitable. Currently, F1 hybrids and their progenies between 'Chitosehime' and 'Suiten- isshoku' are being analyzed for their anthocyanins and flavones.

The breeding strategy for red and magenta flowers: According to Wiering and Vlaming (1984), the red flower colors of *Petunia hybrida* result from cyanidin 3-glucoside (cyanidin 3G) and cyanidin 3- rutinoside (cyanidin 3RG). In Japanese garden iris, however, the cyanidin 3RGac5G cultivar 'Telotri -I' exhibited pink flowers. Deacylation* of cyanidin 3RGac5G, therefore, is prerequisite for the creation of red flowers in this plant. Moreover, since deacylation of malvidin 3RGac5G- petunidin 3RGac5G in Japanese garden iris was reported by Hayashi et al. (1978), Ishikura and Yamamoto (1978) and Yabuya (1991), the deacylation of cyanidin 3RGac5G may be performed through the transfer of deacylation genes from varieties of this type to 'Telotri -I'. Peonidin 3RGac5G or cyanidin 3RGac5G types exhibited magenta (purplish red, pink and purplish pink flowers (Yabuya et al. 1994), although vivid magenta flowers of petunia were dependent on peonidin 3RGac5G or cyanidin 3RGac5G (Wiering & de Vlaming 1984). In the former case, the peonidin 3RGac5G varieties 'Miyabi' and 'Hinomai' produced light magenta and magenta flowers rather than vivid magenta. Both varieties, however, offer the potential to breed for the vivid magenta flowers with high concentrations of peonidin 3RGac5G in Japanese garden iris, because this difference in color may be due to a quantitative change in the pigment. Acknowledgement: I wish to express my gratitude to Dr. Currier McEwen who critically corrected the manuscript.

Dr. Tsutomu Yabuya. Miyazaki University.

(*Deacylation. Acyl: a radical (RCO) derived from an organic acid by loss of hydroxyl from the carboxy group. Acylate: the introduction of an acyl radical into (a compound); acylation hydroxyl: really hydroxyl group or radical. The neutral or positively charged group .OH/ the negatively charged hydroxide ion. Deacylation- the removal of such a hydroxyl. Anne Blanco White.)

Dr. Yabuya has very kindly sent me copies of his reports on related research, which will appear in similar format later on. I am very pleased to be able to offer these to you, and grateful to him for making it possible.

Ed.

JAPANESE IRIS NECROTIC RINGSPOT DISEASE

A new iris disease caused by an isometric virus was reported at a meeting of the phytopathological society of Japan by Dr. Yasukawa in 1982. It has been named 'Japanese iris necrotic ring disease' on the basis of its characteristic lesions which show spindle shaped necrotic rings on leaves of the Japanese iris. (Figure 1 - Omitted: No scanner. Apologies. Ed.) However, most Japanese Irisarians did not know about this disease till quite recently. According to my examination of references, in 1977 Atsuko Honda reported in the Japan Iris Society journal that Japanese iris plants sometimes show yellow mosaic lesions and necrotic rings on their leaves. She suggested the presence of a virus as the cause, but tests for viruses were not done. I believe her report was the first about the disease.

PATHOGEN- In 1982 Yasukawa related the isolation of a spherical virus from Japanese iris plants which showed necrotic spindle-shaped streaks or rings on the leaves. He named it 'Japanese iris necrotic ring virus'(JINRV). The properties of nucleic acid and coat protein of the virus indicate that it is a new member of the carmovirus group, which includes the carnation mottle virus, the meron (sic. Ed) necrotic spot virus, etc. But the virus differs from any previously recognised carmovirus in the host range. Previously described viruses of iris- MIMV (Mild iris mosaic virus), SIMV (Severe iris mosaic virus), and Iris fulva mosaic virus- are flexuous and filamentous and belong in the poty virus group. JINRV is readily distinguishable from these viruses in host range, serology and other properties.

HOST RANGE- The virus has a narrow host range in Iridaceae. In a transmission test by Yasukawa, all test plants of the Japanese irises showed necrotic rings on inoculated leaves, but the virus only induced symptomless infections in the inoculated leaves of Iris sanguinea and Iris laevigata. It had not yet been tested in bearded irises. The virus failed to infect any other plant families.

APPEARANCE- Japanese iris cultivars differ greatly in reaction to the disease. Dr. Yaskawa reported that there are three types of lesions in Japanese iris plants naturally infected with the virus. These types are distinguishable on the leaves of the plants. The first type of lesion is necrotic rings (Figure 1 - Omitted. Ed). In this type, the spindle shaped necrotic rings or streaks are found on the leaves. The lesions tend to appear as chlorotic rings and streaks at first, but the chlorotic areas later turn brown and necrotic in many cases. In the flowering season, the necrotic rings and streaks develop also on the flower stalks, the terminal leaves, and the spathes. The leaves later turn red-brown from the tip towards the base in a few weeks. However, the rhizome and roots remain firm. The third form of lesion seems due to differences in the tolerance of different cultivars.

ENVIRONMENTAL EFFECT- This disease can occur at any time during the growing season. The lesions are more pronounced in the flowering season and in weakened plants which have not been divided and replanted for a long time.

TRANSMISSION- How the virus is transmitted in nature is still unclear. The other viruses have been shown to have been transmitted by aphids, but this does not seem to be the case with JINRV. I think one way the virus may be transmitted is by scissors, as the virus is sap-transmissible. When we replant and transplant Japanese iris, we often clip their leaves with the scissors. The virus is probably distributed all over Japan through transplanting.

CONTROL- A practical cure is not known. Once a plant is infected, the virus is permanent in virtually all parts of the plant as long as it lives. The vigor of the plant does not seem to be markedly reduced. The flowers of the infected plants are normal in size and shape, and the rhizome and roots remain firm. According to my field survey, the virus causes more damage in weakened plants in gardens that are not well groomed than in healthy plants in well maintained gardens. It is important to practice good culture when growing Japanese irises. Good cultivation techniques will control the damage by the virus, but not eliminate the virus from infected plants. In Japan, most Japanese iris growers have repeatedly replanted infected plants without knowledge of the virus, but wise growers have destroyed plants that show irregular spots on the leaves, even though they did not have phytopathological knowledge of the cause.

A rational approach for the control of JINRV may be to test and release only those varieties showing tolerance for the virus. This work should be practised in Japan. Serological tests are necessary for reliable detection of the virus in different cultivars. The distinct necrotic rings which are useful for diagnosis develop late and do not occur in all cultivars.

Mr. Hiroshi Shimizu

Note regarding Mr. Shimizu's article

(Currier McEwen)

At the JI Convention in Maryland in June '95 Mr. Hiroshi Shimizu gave an excellent talk on the Japanese iris ring disease, which is published above. He took back to Japan 9 JI's that had leaf lesions. Subsequently he reported that all were negative for the virus. It is to be hoped, therefore, that the disease does not now exist in the USA. Nevertheless, in view of the large number of JI's being imported each year, it seems probable that sooner or later it will appear here. All growers of JI's are urged to be alert to this new disease. I am currently engaged in a disease project sponsored by the AIS's Scientific Committee. Please tell me of any suspicious examples of the disease that you may observe. (Dr. Currier McEwen, RRI Box 818, South Harpswell, ME 04079.) The leaf lesions of the viral disease must be distinguished from those caused by thrips, which are so commonly seen in many JI's in the US. The thrips live at the base of the plants where the leaves enfold each other. There they rasp the leaves, which, as they grow, show the reddish-brown rasped lesions at the base of the leaves. In contrast the larger necrotic ring and mosaic lesions caused by JINRV tend to be located at the upper levels of the leaves. For confirmation of thrip damage one can unfold a leaf and identify the thrip with a magnifying glass. They are seen as tiny black or white ant-like insects.

AIS DISEASE PROJECT 1994-1995 An Adaptation

On the whole there appears to have been little to worry about in 1994 regarding the 5 'listed' diseases in the project, the only exceptions being the experiences in Kevin Morley's garden and mine.

Disease 'A' - Scorch-like Disease: This continued to be the disease of principal concern but appeared to be no longer the serious problem suggested by Knopnadel's disastrous outbreak. That was controlled and he more recently reported only a few isolated examples of it among his siberians and JTs. He is sure that the flea beetle (*Aphona onostata* Goeze - syn *coerulea*, Fouroroy) found in his diseased plants was involved in his outbreak as the disease has been under control since the use of insecticides. He has not had tests done for fungi and has used no fungicides ('94). Hager, Hewitt, Miller, Nicholls and Tamberg reported a few scattered examples of the disease in '94 and, apparently for the first time, it occurred in 3 mature siberians at Marty Schafer's and Jan Sack's huge planting of siberians in summer '95; but the Abrego's, Fulton, Mahan, Rogers, Schneider, Waite and White reported none. Kiyamoto found none in his siberians, JTs and TB's but there were 4 examples of it among the 60 spurias. Al Rogers wonders if their cold, showery or hot and dry weather which is never hot and humid, might account for the lack of scorch.

All the siberians and JTs with features of scorch that have been studied for fungi through '94 in various parts of the US have been reported positive for *Rhizoctonia*, with or without *Fusarium*, *Pythium*, or *Phytophthora*. Kevin Morley's experience is mentioned under Disease 'B'. He now believes that the disease that resulted in loss of 10-20% of his siberians several years ago was root rot (what we have been calling scorch) due to *Rhizoctonia*. If so, there were unusual features because the plants did not die at once but showed lack of bloom for a season before some died in the third year: others recovered without treatment. His use of metalaxyl has given partial control but the disease is still present. Lorena Reid's experience also needs special comment. Her report is limited to 40chr. siberians and JTs. The affected plants start growing in early spring in normal fashion but only to the height of 4-6" when growth stops. Leaves remain green for a few more weeks and then start yellowing, turn brown, and the plant dies. Aside from the stunting, the features are those of scorch, i.e. rotted roots but the rhizomes appear normal and the leaves, though browned, remain attached. Lorena had no tests done for fungi. The other experience requiring special discussion is that in my own garden. For many years I have selected and saved each year plants, both siberians and JTs, that I wanted for breeding or possible introduction. They had accumulated to such a degree that in late '93 Sharon and I replanted about 1/3 of the garden, discarding cvs no longer need for breeding, and we moved many of the JTs I have received from Japan in order to have them all together in a special area. This was done mostly in late September and early October, a time unsuitable for planting in our area. In spring '94, a number of these were dead. Some others started to grow but rather poorly and eventually showed the features of scorch. Counting the plants that were dead in the spring and those with scorch, I lost about 20 plants, a few siberians, but mostly JTs. I assume that in those with scorch, the late transplanting and winter damage made them susceptible. There was no scorch noted in the siberians and JTs that had not been moved and thus far I have seen none (Sept'95).

Disease 'B' Brown Streak Disease: As originally reported, John Coble saw it only in 'Purple Parasol' and it continued in that cv in Ensata Gardens in '94. Terry Aitken also reported leaf lesions in this cv and in his seedlings involving it through two generations, but identified it as disease 'C'. At Seaways, it affected the only two clumps of this cv some 10' apart and was also in 'Fuji', the plant next to one of the clumps, but not the plant on the other side and neither of the plants adjacent to the other clump. In all these plants, the lesions, like those at Aitken's, were dots and dashes and not streaks like those in John Coble's photos. All the plants of 'Purple Parasol' at Sharon Whitney's Earheart Garden which had come from my Seaways planting also showed dots and dashes. Chandler Fulton noted a questionable example of disease 'B' in one siberian and Tamberg reported features of it in perhaps 1-2% of his siberians. No evidence of disease 'B' was seen in 'Purple Parasol' by either Lorena Reid or John White. Kevin Morley's serious problem with what he calls his brown midrib disease (his photos look to me like those of John Coble's disease 'B') continued under partial control after intensive use of 'Subdue' (metalaxyl). *Helminthosporium* (cause of leaf spot in bearded irises) was identified as associated by Roberts at Michigan State but a laboratory at the University of Missouri in Columbia found *Rhizoctonia*.

Disease 'C' - Dots and Dashes: Aitken's and my observations of this in 'Purple Parasol' have been mentioned. Coble originally reported disease 'C' in 'Knight in Armor' and it continued in '94. In my clump of it, the lesions are more like wide brown streaks. Lorena Reid and John White saw no disease in their plants of this. In my large planting of other JTs, many in '95 -including some from Japan received in the last 3 years- showed dark brown dots on some leaves by late September. In contrast, except for a few plants with borers, no leaf lesions of any sort were seen in the siberians growing in the same 1/2 acre bed. Similarly, Tamberg found no evidence of disease 'C' in his large number of siberians, nor did Fulton, Kiyamoto, Schmieder or Waite.

Special Situations

Summary of Disease Experience at Rice Creek Gardens: Charles and Betty Addison are the 25th participants in this project. They started to grow JTs in '92 with 1/4 acre of 20 varieties. The plants did well that year and came through the winter successfully but in '93 they began to show yellowing of the leaves and poor growth, they died rapidly, showing rotted roots. Laboratory study at the University of Minnesota proved positive for *Rhizoctonia* and *Fusarium*. A somewhat similar disease in their large planting of daylilies was positive for *Rhizoctonia* and *Pythium* in '92. Some varieties were resistant and they now grow only these. Essentially all the 20 varieties of JTs died and the Addisons have given up trying to grow them. Intensive treatment with 'Banrot' (thiophanate-methyl) was useful in the daylilies but appeared to be of no help in the JTs. Their siberians have been little affected by the disease.

Harvey Buchite, County Agricultural agent, believes the problem with the JTs was scorch. In the hemerocallis he has identified what is probably an onion maggot in the roots associated with bacterial rot. An insecticide is therefore now used. The Addisons are taking part in a trial of composted bark inoculated with disease resistant micro-organisms developed by Hoitink at Ohio State University. This had been shown to be suppressive to *Pythium*, *Phytophthora*, *Rhizoctonia* and *Fusarium* in greenhouse trials but has not as yet appeared to be impressive in the Addisons field trial.

Norton's Garden, South Harpswell, Maine: I had given these friends a large number of JTs to plant around their pond and in '93 these were magnificent, practically causing traffic jams in passing cars, but in '94 they showed unhealthy growth and poor bloom. The major problem affected perhaps 15% of the plants scattered here and there in the beds. They had received no protective sprays and thrips damage was obvious, but in addition, leaves and stalks were moist and dark brown. Stalk lesions extended into the buds which followed suit and died.

As in scorch, leaves remained attached to apparently normal rhizomes and the roots were rotted. Laboratory study showed *Rhizoctonia* in roots and buds. If this problem was scorch, its damage to stalks and buds was far more severe than I have ever seen. In scorch as I know it, leaves turn lighter brown and stalks and buds rarely get a chance to develop. Possibly this was scorch and thrips combined with some other agent. The second and more minor problem was thrip-like lesions in the leaves, but when felt they were small raised flecks. The Division of Plant Industry of the Maine Dept. of Agriculture discovered eggs in the leaf tissue. These were thought to be of either small tree crickets or leafhoppers, their very small size pointing to the latter. None hatched in the lab. so a definite identification was impossible. This was a new pest problem to me. '95 saw no re-occurrence of either these lesions or of the scorch-like disease. The remaining plants are healthy and have grown and bloomed well. The only treatment given in '95 was dimethoate in the spring to control thrips.

Additional Notes: Bob Hollingworth reported what appeared to be two types of disease among his siberian irises in '95. In about 10% of them (but not in JI's or TB's) leaves started turning yellow-brown at the tips, later spreading to the entire leaf. Central leaves were chiefly affected and they pulled away easily. The rhizomes were not mushy at the crown but neither were they normal and the roots were rotted. The affected plants recovered and Bob doesn't think that it is a milder form of the severe infestation with *Sclerotium rolfsii* he experienced some years ago. *Rhizoctonia* has been identified in the diseased plants. The other problem in his huge garden is the customary small number of widely scattered plants with the scorch-like disease.

There was a rumour going around that Bob and John had had such a severe disease problem that they'd had to start afresh in a new garden. Happily, like most other rumours, it was untrue. They have indeed created a new large garden area near the old beds but this is to overcome the problems of monoculture, not disease. This will enable them to leave areas fallow or planted up to other crops. John reported the customary small number of widely scattered plants with the scorch-like syndrome.

Miscellaneous: Chandler Fulton lost most of a number of 40chr. siberians brought from Oregon but attributes this to the excess heat and moisture of the new climate rather than disease. Al Rogers mentioned that he had 'plenty of borers' and no thrips in his JI's although they are quite prevalent in the daylilies. These reports surprised me as I had thought that iris borers did not occur on the West Coast and have assumed that thrips is an inevitable problem with JI's. David Schneider reported an outbreak of disease in the bearded after a period of rain but none in the beardless. John White had some soft rot in 6 of his 366 TB's but none in siberians or JI's. Being a hybridizer there are two pests in my garden which are of especial concern, the iris bud fly (*Orthochaeta dissimilis*) and earwigs. The former is more of a problem in Massachusetts but is increasing in Maine. Marty Schafer uses a heavy spray of dimethoate to at least partly control the bud flies. Earwigs are found eating anthers and styles in many of my JI's although I do not recall seeing them in the siberians. Perhaps that is merely a matter of timing since there is a months difference between the bloom times.

Discussion: Diagnosis of a disease in the absence of a proven causative agent or a specific laboratory test or feature has to depend on symptoms or physical features which are recognised as characteristic of a specific disease. Experience of diseases 'B' and 'C' bear this out, the diagnostic features varying so widely in various gardens that one wonders whether they are not the same disease presenting differently in different times and locations. The etiologic basis of 'B' also needs explaining. 'Purple Parasol' is so susceptible that one suspects a genetic base. However, plants of this cv in some gardens have failed to host it. I do not remember that it had the leaf lesions when it was named, although I cannot be sure, but it is hard to believe that it could have received the Payne Award in '80 if it had had them at that time. It is possibly a virus since they can be in seeds and hence could appear in seedlings but not necessarily in all. 'C' and 'D' may also be viral and the recognition of JINRD proves that JI's can be susceptible to viruses. In 'A', a specific microbial cause remains uncertain. Sjolund's identification of mycoplasma-like organisms in bearded irises is, I think, quite convincing, but in small trials over 3 years he found none in JI's or siberians. Knopnadel's control of his outbreak with insecticides intimates flea-beetles as disease agent or the agent permitting invasion by another lethal one. In our studies in the US, only fungi have been identified (notably *Rhizoctonia*, *Fusarium*, *Pythium* and *Phytophthora*) but only this year, I believe, have insects been looked for and healthy control plants included in the laboratory studies. The four fungi are, I believe, ubiquitous in garden soils and presumably also in plants but ordinarily cause no harm. Under adverse conditions might they become the sole pathogen, or merely enable the major pathogen to enter? Do they become pathogenic in roots already damaged by another agent such as an insect? Might they be completely innocent as causes, merely increasing in numbers as they live in roots already rotting from the effects of another agent? I am afraid that our results today offer no answers to these questions. I believe that at present it is best to think of scorch not as a disease with a single cause but as a syndrome with common features that may have different causes. Hence I suggest that we term disease 'A' the root rot syndrome.

Plans for the Future: I doubt that there is much more to be gained from gathering anecdotal reports, although accounts of any new or unusual outbreaks of disease will be important. We need to try and identify causative agents and except for John Coble's samples of 'Prairie Bunting' sent to Agdia, I know of no tests done for viruses in our disease project. Laboratories have a limited number of serological tests for viruses and thus cannot identify one not on their list. A research laboratory willing to undertake studies for the isolation and identification of a new virus would, I am sure, be expensive. The diseases we now suspect to be viral affect relatively few cultivars, so perhaps the practical approach is to eliminate them. Similarly, laboratory identification of suspected fungi or insects as causes of the root rot syndrome will require a serious research type approach meeting the demands of Koch's postulate including the isolation of the suspected agent in pure culture and using it to induce the disease in healthy plants. Such an attempt was made by Dimock before 1959 using *Fusarium*, *Pythium* and *Rhizoctonia* in bearded irises but with negative results. (Dimock. AW in 'Garden Irises' ed. LF Randolph. AIS 1959). If a laboratory with the necessary resources and a sincere interest could be found, I would urge that any necessary funds be obtained. If such efforts are not undertaken, I fear we will have failed in our main purpose. Perhaps, as in the case of viral studies, this is academic since disease 'A' appears no longer to be the severe threat that prompted the undertaking this disease project. There is no certainty, however, that it will not recur. I believe that in '96 we should continue to send diseased plants plus controls to Bruce Watt for his search for both fungi and insects. I also believe that it is extremely important that those of us involved continue the trial of treating 'scorched' plants with the combined solution of thiophanate-methyl and metalaxyl. This simple experiment may give valuable information as to the fungal nature of the disease as well, perhaps, of being of immediate practical use in saving plants.

FOR THE ATTENTION OF ALL BABY BOOMERS

We, the previous generation, are survivors and have good reason to celebrate. Consider the changes we have witnessed.

We were born before radar, television, penicillin, polio shots, frozen foods, photocopiers, contact lenses, Frisbees and The Pill.

We were before credit cards, laser beams and ballpoint pens; before pantyhose, dishwashers, clothes dryers, electric blankets, air conditioners, drip-dry clothing and before Man walked on the moon.

We got married first then lived together. How quaint can you be! We were before house-husbands, gay rights, computer dating, dual careers and computer marriages.

We were before day care centres, group therapy and nursing homes. We had never heard of FM radio, tape decks, electric typewriters, artificial hearts, word processors, yoghurt and guys wearing earrings.

For us, time sharing meant togetherness, not computers or condominiums. A chip was a piece of wood, hardware meant hardware and software wasn't even a word.

In 1950 the term 'making out' referred to how you did in an exam. McDonalds and instant coffee were unheard of.

In our day, grass was mown, coke was a drink and pot was a thing you cooked stew in. Rock music was grandma's lullaby and AIDS were helpers in the Headmaster's office. We were certainly not before the difference between the sexes was discovered but were surely before the 'sex change'.

We made do with what we had and were the last generation that was so dumb as to think that you needed a husband to have a baby.

And then consider, what on earth will today's kids tell their children that they had to do without.

Iris Society of Australia - New South Wales Region. Newsletter. August 1996

THE LURGI FILE

Call to mind a foxy brown streak, just beneath the cuticle of the leaves of, say, an *ensata*. What would you surmise? Rust? Well, maybe not, you tell me. I only acquired it and its host in '95 and being easily rattled I sluiced it with copper solution and the young leaf came up clean, but due to the appetite of an unmentionable mollusc, it didn't really show enough of itself for me to be sure. I can't even remember whether there were pustules earlier on, I thought that there were, but then I assumed it to be rust (until told it might not be) so I didn't really examine it. The first piece I had rotted hastily, so it may not be wonderfully robust. This affected plant rotted its main rhizome off this spring, but the offsets are still with me- so far. I have only just ventured into bucketed moisture lovers, so it is, of course, most likely to be bad wifery that has laid it low. 'It', by the way is 'Mysterious Monique', and I'd be very pleased if someone could allay my fears in one direction or another.

This is a deviation, so pure SS&J'ers had better skip to the next article here. I have a recently acquired SDB, which came with a note saying it had rust. I can only presume that the supplier assumed that I already had it in my bearded, since he reckoned that around 60% of his were susceptible. Well, I haven't, and being of a panicky disposition, as you know, was aghast at the thought of acquiring it. I do try to avoid spraying, since it always involves noxiousnesses that I tend to get drenched with (Oh, but you must only spray on STILL days, even if there never are any. Silly me.) so I didn't fancy acquiring a fungus- invisible when dormant- that would need regular deluges of toxins. I am assured that while nothing will eradicate it, it's kept inactive by an annual spray of such as 'Tumbleblight' early in the year, when foliage growth is just starting. Apparently, once it's far enough advanced to be visible, you've got it for the season. Last year I had it on the little spurges and some violets, but I felt safe in assuming all these to be different fungal relatives since I hadn't noticed it on anything apart from these two species. This year, IB 'Pot Luck' was rowed out on the allotment from the garden- where it had always been 'clean' and promptly sprouted pustules- from the stress I suppose- and now all sorts of cvs are showing it. I diffused 'Roseclear' around since that was in the cupboard, but maybe not frequently enough since it's still visible, if not quite so hearty. Anyone out there with experience of rust on irises, please do give us your views.

Ed

NEMESISIRIS

You know that baby, Claire, who is always hovering over someone's shoulder in the Mercury advertisements? Well, that is what Nemesis does with me- always nipping back to see if there isn't a little trouble to be stirred up. The latest effort is quite splendid and it concerns what I can only call the Suever Series of *pseudacorus* x *versicolor* hybrids raised by Dr. Jack Ellis over the last 25 years or so. The best known is probably 'Regal Surprise' with its violet falls and creamy yellow standards and there is also 'Limbo'. In spite of their names, they have the same breeding as the ones which are giving me trouble now. When Jack first decided that some of these plants were worth the attention of the BIS, they came before a JIC. For reasons which are probably better not gone into in print, they fell by the way and Jack did nothing further about them apart from giving me some plants. They did well under rather uncongenial conditions and I spread them around, mostly under 'catalogue' numbers. (Jack's students worked on them and there had to be some check.) Then last year it happened that I was in Sussex just before a JIC and the plants were in a flowering condition which permitted them to be taken to London and reintroduced to that committee with an explanation. One plant received an A.M. which meant it had to be named. So I got in touch with Jack and said firmly that if he didn't take action, I would, and offered a selection of names. Between us we did do something and you will find several Suever names in the Registrations of the 1995 Year Book. There was one slight hiccup in that Jack was afraid that I had confused 'Limbo' with 'Seuver Punch'. Live material convinced him that I hadn't. The problem here is that if you describe the plants casually they sound identical, but see two flowers side by side and they are quite different.

So now I had to settle down with a lot of slides and the rather cursory description of the flowers in the Year Book (6 cheers for Currier, his are actually useful! Ed) and try to attach the right names to the right plants and line up a full description. If you are really lucky, I might even get it done for the next NL so that you will be able to identify your plants properly- if you still have them. This is in no way simplified by trying to ensure that plants owned by another member, who has supplied slides, are correctly identified. It is very trying when a series of flowers which have been photographed on the same film under the same lighting conditions seem to bear no resemblance to the written descriptions. The moral, I'm afraid, is that you photograph the flower carefully so as to show the essential markings at the time you name it. The photographing should be done in full daylight, but in light shade, especially for blues if you don't have a heat filter. Dappled shade should be avoided because the highlights from the sun may confuse the automatic timing of the camera and any blue flower in the sunlight will come out red. Even then the light will catch the flower so that it has different colouring from what you normally see in the flower bed.

Meantime, may I say that the London patch which has Seuffers and LAs in it looks awful as a result of four policemen ploughing through it at midnight in a hopeful search for a villain who wasn't found. Mind you, as water hazards go that one is tricky since they had to jump to a higher level over an almost invisible little wire fence. Never mind, that bed is due for digging up anyway.

Anne Blanco White

'ASHFIELD CLEMENTINE', A NEW BRITISH 'FLAT' SIBIRICA

I don't think that I seriously noticed my new Sibirica before spring '94. I have an acre of garden and (Hellebore) nursery here and late spring is the busiest time of the year. Most chance seedlings are weeded out, or only left if they have a decent space in which to grow, unless they are needed for a particular reason. Here the climate is comparatively dry and sunny, and an exceptional period of sunshine in late spring or early summer, as in '94, can mean a fleetingly short flowering season for sibiricas. It is a time of year too when most time is devoted to caring for planned seedlings, and weeding becomes more frantically accomplished. Having a nursery seems to mean that my garden's spring tidy-up, you see, is later than most people's- much later.

However, this little seedling had emerged fortuitously in a little patch where there was space enough to grow, and I had left it. Suddenly in the late spring and early summer of '94 this now substantial grassy clump came alive with colour. It reminded me instantly but loosely of a blue clematis, except it is a more vibrant shade of violet blue than 'Perle d'Azur', for example, ever is. The flat flower has different qualities to the usual Siberians, in some ways it has fewer visually 'hidden' areas, and this means that to me at least it gives an impression of greater simplicity. As with many daisies, sunflowers and clematis, its flat form for me has an exuberant, almost sun-seeking quality. My immediate thought was that it needed to be planted amidst lime green ground cover, and with an obliging blue clematis planted near it.

For me, one major drawback to the viability of Siberians as garden plants is the fact that if we get a hot spell of weather at flowering time, this can then be dismally short. How much nicer it would be if a second flush of flowers appeared later on. This occurs with certain *Helleborus orientalis* hybrids and it is a characteristic I am trying to spread to a wider and better variety of colour forms, for example. Jennifer Hewitt very kindly helped me to register 'Ashfield Clementine' with the BIS and AIS and advised me that crossing with some American remontants might eventually do the trick. She very generously let me have a selection to try with- particularly 'Dreaming Yellow', 'Lavender Light' and 'My Love'.

Now, my experience of Siberians is comparatively simplistic. I have grown a selection regularly for over 30 years and seen many in other people's gardens, but even so this is a very limited experience. With the Hellebore hybrids, for example, over recent years I have seen thousands in many parts of the UK and I think that I have a good idea now of what is available and what is possible. This means that I tend to see new flowers- and foliage- in an increasingly discerning way, and my ideas as to what characteristics I like and am developing are continually sharpened and consolidated. I certainly don't have this 'eye' with Siberians. Eventually I may have. Meantime, due to Jennifer's generosity I have added to my Siberian stocks the tetraploid 'Exuberant Encore', together with 'Blue Moon' and 'Sui Iri', and these may soon further enlarge my perception. I should like to breed a 'flat' remontant Siberian, like 'Ashfield Clementine' in form and colour, and one that performs thus regularly and reliably. Even if I do not eventually succeed, the effort and interesting record keeping to do with the parents and their offspring will themselves be a terrific adventure! I am increasing the parent by division at present, ('96.) and have established a bed of seedlings, to see if the 'flat' characteristic breeds true. No flowers on these yet, probably due to the two very dry summers. At the moment my water table is 8' below the surface, and I have lost a lot of other plants. 'Sugi Iri' bloomed this year, but none of Jennifer's other sibiricas have, this one is lavender, and a 'normal' shape, with seemingly no record of remontancy, so not a suitable partner for 'Ashfield Clementine', but I live in hope of some of the others showing more interesting blooms next year. 'Ashfield Clementine' confirmed its loveliness gain for me this year, it seems to make certain other sibiricas I see seem wishy- washy. How prejudiced I am!

Anne Watson.

MOISTURE LOVERS AMOK IN THE MUCK

My bed of moisture loving irises has been flourishing this year. Originally their patch had been in very sticky clay at the lower end of the paddock, first used for growing raspberries, which had had horse manure added. This area, prior to these, had housed TB's for a spell after quantities of gritty sand and home made garden compost had been dug in. Although this had raised it slightly, it was still too wet for the latter, and after one torrential downpour of several hours it had a considerable moat around it! Among the sibiricas 'Blue Forty' was particularly floriferous and seemed to be in bloom for weeks. 'My Love' and 'Soft Blue', which were planted there last year from a dry clayey spot under a conifer, have settled in well and flowered too. Several bought through the BIS a few years ago are really beginning to put on a show now; 'Cambridge', 'Butter and Sugar', 'Dance Ballerina Dance', 'Kobaltblau' (what a stunner) and 'Splashdown', which has romped away. My only disappointment has been 'White Swirl' which, as a large clump, has failed for the second year to produce any flower at all. (I've 'Hubbard' doing much the same with me, it arrived in April of '93, has amassed 39 fans to date and looks like an archetypal tet- fabulous broad, blue-green arching foliage- but a stem? Hah! Can someone out there enlighten us ignoramuses, ignorami, and end our years of frustration? I could do with some help with suffixes too...Ed)

Several varieties of pseudacorus have grown so vigorously over the last 3 years or so that they're now rubbing shoulders. I have two of the 'ordinary' bright yellow one, one ex Wisley and the other collected years ago from the local canal. The first has the usual slight brown markings on the falls, whilst the other has none. The double form 'Flore Pleno' from Anne Blanco White, put up two stems this year. Remarks

varied from "Amazing!" and "Fascinating!" to "What a mess!" I thought it was great, a sort of hose in hose iris. It has not set seed so the bees obviously found it confusing too! (Doubled flowers are often sterile, sexual parts having mutated into petals or petaloids, or whatever. Ed)

Several named forms of versicolor flowered well too; 'Silvinton; a pale blue, 'Party Line' and 'Pink Peaks' which are both pink, one with yellow style arms. My favourite was 'Mysterious Monique', those dark, dark petals with their white flashes really stood out, and it had particularly good branching compared to the others. I have I.versicolor from BIS seed, with 'Kermesina' under a Victoria plum and x robusta 'Gerald Derby' growing under a dry south wall. These will be moved in due course but are quite happy where they are! I have just been given one fan of laevigata variegata which I've potted up and stood in a broken bucket until I have the opportunity to resuscitate the pond.

Jane Cole

If only I'd known that 'Gerald Derby' wasn't a moisture lover! (I believe it to be so! - Philip). I've been growing it for years in a water barrel since it outgrew its 5l pot, and has it ever flowered? You guessed it. May I say here that a lot of things seem to be quite happy with the lack of care and flower anyway, just to prove that they can. I've recently sent two ex BIS PCI seedlings to Jane since they thrive on my allotment, without special treatment, so hopefully we'll find out whether or not that was a fluke (I must test the soil) or whether lime tolerant seedlings are quite frequent. Most of the rowed out babies either died instantly or protractedly, but enough survived to flowering size for some encouragement.

Ed

OVERWINTER CARE OF JAPANESE IRISES

In late autumn all foliage and stalks which have turned brown should be cut off as close to the soil as possible. Burn them! Seeds in excess of your requirements should be sent to the Group Seeds Officer and the B.I.S.

As winter approaches the real danger to JI's is not from cold but from icy conditions at root level. Where plants have bloomed in late spring or early summer, followed by several months of high temperatures such as we experience here in the UK, this year it is likely that new root growth extends into mid-November. As JI's develop roots some 3/4" above the old root system, these are likely to be just under the surface of your bed, just below last season's mulch. Further mulching is beneficial.

In late November to mid December, undertake a final clearance of weeds and spread a 2" thick mulch over the whole of the bed. If available to you at your local nursery, then spread a layer of Christmas tree branch trimmings. I appreciate that some members may be reluctant to use peat moss (Arggh! Ed.) but my experience with a straw cover is that problems can arise with the absorption of nitrogen from the ground. This year I am experimenting with sawdust and wood shavings with rabbit manure. The same problem may arise. However, the resulting nitrogen deficiency can be corrected by the use of a quick acting nitrogen fertiliser before spring growth starts.

Where your plants have been grown in pots there are several ways of protecting them during the winter, but make sure that they never become bone dry. The easiest way is to dig a trench in vacant ground to a depth 4" deeper than that of the pots to be protected and cover with soil. The ground can then be covered with a protective mulch. This method was suggested by the late V.H. Humphrey from whom I purchased my first Japanese iris cv. Alternatively the pots can be plunged in an insulated outer pot or a deep bed of mineral wool, coir or peat (!!!Ed) and covered with netting to protect from disturbance during the winter. A heated or unheated greenhouse (which I prefer) or an indoor conservatory are other alternatives but if used make sure the plants are kept just moist. The date of bloom may be advanced if heat is used.

Another point, particularly with newly divided plants, is to maintain a regular check of the soil pH. This protection is only necessary during one winter in four or five. Norman Payne who gave me considerable help in the bagging of my plants at the Trials Ground at Wisley for sale for the benefit of the Group tells me that he takes no special precautions at Merton Park.

Philip Allery

I must stress that the last one was my first winter with JI's, but for those of you who, like me, are not organised enough to be as correct as Philip in your treatment of them, mine are in perforated florists buckets and spent the last winter in cardboard boxes with newsprint balled up and stuffed into the larger outer bucket that would ordinarily hold the water. I had bloom this year, but I must say that mine don't look as good as Philip's bucketed bunch. Having not enough vacant ground for a complete garden path, I've none spare for trenches, and Anne recommended the above method, which I was only relieved to comply with. Experimentally, mine are in JI No.3. (A mix of three parts Ericaceous compost; one part well composted cow or horse manure; and one part small horticultural grit, all parts by volume, is recommended - Philip). If they don't survive, I'm sure you'll hear all about it. Adrian Whittaker tells me that he's tried over a dozen and in these dry summers always has to resort to tap water at some point 'and that's the beginning of the end'. So far I've only a very few and my rainwater barrel (must get another!) has coped.

Ed

PACIFIC COAST IRISES- REMARKABLE BEAUTIES STILL RARELY GROWN

Many years ago, in the 1950's, I saw I. hoogiana at Bees nursery in Cheshire, it looked both elegant and beautiful. After joining the BIS I had the opportunity to grow some Pacificas from seed, among them was I. munzii or a close hybrid. It turned out to be a superb plant, almost an equal to I. hoogiana. Unfortunately after flowering for two years- whilst keeping it in a greenhouse- it died and for whatever reason I have, so far, been unable to obtain a similar plant. But I keep on trying. So started my attraction to Pacificas. My pleasure has been stimulated by seeing the Pacificas shown by Bob Wise and the late Harry Foster and although I have little interest in showing nevertheless the results of their endeavours provided a stimulus to seek better plants and retain the best of the old.

My plants have come from seed from the SPCNI (Society for Pacific Coast Native Irises) or Ghio's or the BIS or from Broadleigh Nurseries seed. Very early on I discovered that Pacificas grew only in an ericaceous medium (Alan Titchmarsh on the BBC!) and from experiences learnt that lime was usually associated with my losses of seedlings.

Having tried quite a few methods of propagation -including embryo technology- I have come to the conclusion that they were all too fiddling to fit in with arthritis! So, I just put the seed on a layer of compost overlaid with sand/ compost in a deepish pot and keep just moist in September. By spring usually there is adequate germination. The seedlings are left in the pot for a year, watered with a diluted liquid fertiliser and are then big enough with a good root system to pot on. This ensures good growth in the second year and a fair chance of bloom in the following year. Only I. hartwegii regularly fails to germinate. I. chrysophylla, like I. munzii, doesn't flower. I. douglasiana, tenax and innominata are easy and offer a change of form and colour. Seed from the SPCNI gives a range of Pacificas, species and hybrids, from a wide variety of sources whilst that from Ghio's offers new hybrids, some quite exotic and all garden worthy.

Of the plants those from the BIS are regularly successful, and those from Broadleigh Nurseries have often bloomed in the spring following purchase. Despite repeated attempts I have never had any success worth mentioning with plants from America.

Plants grown from seed are more robust and have a longer life, no doubt they adapt better to the growing conditions in the North West of England. Propagation is best carried out after flowering and when the new roots are growing vigorously, say July/August. Small pieces usually fail to make satisfactory growth.

It seems such a pity that Pacificas do not seem to catch the public eye, except at Shows, and gardeners are reluctant to give them a try. They don't perhaps have a very long life, perhaps five years, they do tend to develop straggly rhizomes and maybe the leaves lie too flat for 'garden comfort' but in general they are one of the best of the Irises. Their big advantage is freedom from pest damage and the main disadvantage is the dead leaves are just too obvious!

Ray Wilson

PCI'S IN POLAND

Lech Komarnicki of Warszawa had 10 plants pull through a comparatively mild winter in his garden, which included two weeks at about 36F. Apparently, the problem in Europe is the desiccating winter winds rather than the frost hardness, Dr. Tamberg growing his in a cold greenhouse without trouble. Mr. Komarnicki, however, doesn't have one, so he mulched heavily with, firstly, pine needles, and then dead poplar leaves, and then covered the plants with a fibrous cloth that is apparently similar to Kleenex tissues, being assured by the manufacturer that it allowed air and water to penetrate and raised the ambient temperature by 4-6 degrees, as well as preventing drying. He left one plant mulched to its leaf tips, without the fabric, and it died in the March frosts, after a relatively warm February. The covered plants started to grow during this period and then had their leaf tips burnt, but survived. Due to the very cold spring, growth was delayed until May, and he had no flowers, but hopefully, this year saw his hopes fulfilled.

SPCNI 'Almanac' Fall '95

An Adaptation of: EXTENDING THE PCI BLOOM SEASON

In 1995 we listed the average bloom dates of 50 PCI cultivars in our Oakland garden, from February 23 to April 15, the majority blooming between March 20 and April 10. This year we are growing 221 clones, several in two or more locations. Peak bloom in the 103 clones of named varieties was April 1st - 5th whilst the 100 clones of munzii-derived selections peaked 10 - 12 days later. This spread is typical.

Extending bloom season is one of the items generally found towards the bottom of a hybridiser's wish list, but in 1987, when we discovered that we had a selection, XP50B, which in its 4 years of life, had never bloomed earlier than April 18, we decided to start a breeding programme for 'Lates'. There are difficulties in extending the season in either direction. Cold weather and rains are hazardous to early flowers and hot weather tends to hurry the blooms at the other end and defeat your purpose. XP50B, with 2 per stalk, was finished almost as soon as it started, and was also a reluctant parent either way, which, as there were few other PCIs available for crossing with it, resulted in 2 years of complete failure. By 1992 we had 3 lines with improved flower shape, but despite the use of multi-flowered material, every late blooming plant remained 2 flowered. In 1991, during the June 13-15 JI Convention in the Portland area, Duane Meek had shown us an *I. douglasiana* which was still blooming which he has obtained from a roadside site near Sandy. Since they're not native to that area, this was thought to have originated from the Walter Marx garden, formerly located in that vicinity. Because of my interest, Duane sent me a plant which first bloomed here in 1994. 'Late Doug' has grown well here. It is a relatively large plant with branched stalks and a lined flowers of a fairly decent pale blue. We crossed it with two XP50B derived clones, XP251A and XP252A, and the best available flower type still blooming, XP215A. The flower shape has been disappointing, not much improvement over the species, but there are some variations in color and petal width and, more importantly, at least half of the 12 new clones that have flowered thus far are multiflowered. This year, for the first time, we have enough plants to perceive the impact which this single factor could make in a garden. By the time this selection started blooming, there was not a single named c.v. still in bloom, and today, May 25, 20 days later, there are 47 open flowers on the 12 clumps of 'Lates'. On all the other 321 clumps in the garden, there are only 3 open flowers, all munzii derived, which would otherwise be marking the end of our regular PCI season. On May 21, 26 days after the last named Pacifica bloomed, I went out and counted, and there were still 43 open flowers on the 'Late' planting.

We have an *I. purdyii* clone which, for the last two years it has bloomed, has been as late as the 'Lates'. Because the petals are so narrow and it is at best 2 flowered, we have been hesitant to introduce it into our gene pool. On May 16, I decided to make a cross or two to see if it might have a different genetic component for late blooming which, when combined with 'Lates', could extend the season still further. What a shocker! Not a single flower remained on that clump of 1 1/4 ft. diameter. All the stalks, single or double, were finished! What a stunning example of the significance of branching and bud count on the length of bloom time of a specific clone.

Lewis Lawyer. SPCNI 'Almanac' Spring 1996. Vol. XXIV, No. 2

SPURIA NOTES

Now that many new Spuria cultivars are available, the inevitable question arises as to which are likely to perform best in the UK climate. Like many aspects of gardening, there really is no clear-cut answer. After over two decades of experience with the group, I tend to think that cultivation methods and location are probably equally important as the choice of particular plants. It is also worth mentioning that many of the Spuria species do grow as well as, if not better than, the newer cultivars, so newer does not necessarily equate to better performance.

One point above all to remember is that the group as a whole do resent being moved. Even a careful move in September, which is generally a good month to do it, can cause such a severe check to sound plants that they make take a couple of years to resume normal growth patterns, or even die. Adequate moisture and as much sun as possible are the two other major requisites, along with regular feeding.

Though not ultra new, 'Kaibab Trail' and 'Adobe Sunset', both in the yellow/brown/dark red range, do well here and flower reliably every year and show steady increase. Of the blues, the older 'Protege' is far and away the most reliable with me. 'Renata' is also showing signs that it might be a good choice for these conditions, but it has not flowered this year after a good show last year. The reds seem somewhat more variable in their flowering here. 'Custom Design' and 'Imperial Ruby' would be the ones I would favour, based on the experience here.

I have to admit that I've been far less successful with the lower growing hybrids, which seem not to like the conditions here. I suspect that the ground is the root cause of the problem, (good pun! Ed) being very shallow downland type over almost solid chalk. Although I try to add as much humus as possible, it vanishes quickly. It should mean, however, that anything which grows well here should do as well or better in good soil. A permanent position in the sun, against a wall or fence, in a deep soil which does not dry out, would seem the ideal in the UK. It has been said that most of the iris family are gross feeders, and certainly, with the spurias, regular feeding does pay off both in quantity of

bloom and increase. The quality of the flowers is also noticeably better if spurias are well, but not force, fed. Adequate moisture in the growing season, i.e. through the autumn to the late spring in mild winters in the UK, is a MUST. Some species and cultivars dry off naturally after flowering, but others remain green most of the time. I have not noticed any significant difference in the performance of either group. A picture of a damp, sunny meadow or ditch-side site is perhaps worth keeping in mind. In the case of cultivars, the geographical origin of the cultivar seems to have little bearing on its likely UK performance. It's very much the case of trial, I'm afraid. Some of mine that have been bred in hot arid areas of the USA perform better with me than some from cooler damper zones. It is likely that it's the genetic makeup of individuals that really counts. Most of the more well known species grow and generally flower well in the UK, given sufficient sun, particularly the yellow- white types such as *I.orientalis*. I have also had quite good results from some blue species such as *I. carthalinae*, and its close hybrids, but some have tended to die off for reasons unknown, although generally spurias are very tough.

As with most plants, if you can determine in what conditions the source species grow, and duplicate these as far as possible, then you are well on the way to optimum growth conditions. I always consider spurias most suitable for patient gardeners. If you want rapid results with little or no care, then they are not for you. If you are prepared to put in the steady effort then the rewards are there. If you have a suitable spot, why not try one or two and see how they go with you. You may be pleasantly surprised.

Adrian Whittaker.

An Adaptation of: ON LENKORAN (Spuriae)

In the late '70's Dr. George Rodionenko sent a package of iris to his good friend Bob Schreiner. Among the other iris was one identified as 'Lenkoran'. A tiny scrap of paper noted that he had selected this from his bed of *I. klattii*. Bob grew 'Lenkoran' in his personal garden and passed some on to Ellen and I. When we began Chehalem Gardens, Bob urged us to introduce it, which we did in 1985, finally registering it with the AIS in '94. While trying to follow the world events following the break-up of the Soviet union, we learned that there is a city named Lenkoran located on the Caspian Sea about 20 miles north of the Iranian border. It appears to be on the northern fringes of the Talish Mountains where they meet the steppes. We believe that this is the area in which Dr. Rodionenko collected the iris. 'Lenkoran' has always been one of our favourites. Its flower form is that of the species, its long curved lines and thin petals suggesting a classical elegance. Its brilliant light blue- violet tones are unlike any others in the Spuria world, catching one's eye from a distance. While we would never suggest that it is particularly vigorous, it grows very well once established. In the years since its introduction, it has become distributed globally and we've seen it listed in catalogues from Europe to Australia, as well as numerous sources here in the US. We've also noticed it show up as a parent in some recent introductions. For those of you who are interested in these forms of spurias, we'd also suggest *I. carthalinae* and *I. c. alba* as worthwhile and easy to grow, as well as two of Dave Niswonger's children of *I. klattii*, 'Russian Blue' and 'Russian White', and Ben Hager's child of *I. carthalinae*, 'Protege'.

Tom Abrego, Spuria Iris Society Newsletter, Winter 1995

Please note that any accents in e.g. French; degrees of temperature and other symbols are not on this keyboard, so do add them if I don't remember to mark them in before photocopying.

Ed.

WHAT ABOUT I. NOTHA? (Spuriae)

I. notha is to the Spuria group what the miniature Tall Bearded are to the Bearded group. Perhaps, this may take a bit of explaining. More specifically, I'm talking about the large spurias not the smaller group of which *I. graminea* is a good example. In the Bearded, I'm talking about the Tall Bearded and Border Bearded irises.

This medium to light blue spuria species grows for me about 36" tall in south-east Missouri. I grew 18 seedlings and saw very little variation in height, color, form and branching. It has 3 or possibly up to 5 buds to the stalk with 2 in the top socket. The blooms are slightly smaller than most of the blooms in the large spuria hybrids. The foliage is beautiful during the summer and there is lots of it. They go completely dormant in the wintertime. They have survived temperatures well below 0F with little mulch (only its own foliage and leaves which blew in). The stems are slender, wiry and flexuous and sway in the breezes, but sturdy enough to survive a very strong gale. Dr. Rodionenko says that their main ornamental value is their beautiful bracts. He was including in this statement also *I. demetrii* and *I. machowii*. It's the stems that remind me of the MTB's. *I. pseudonotha* is about one half the height and size of *I. notha* but about the same color. It makes seeds fairly easily and although it has a 38 chromosome count will cross with our 40 chromosome hybrids. I haven't tried it with any of the 44 chromosome species like *I. halophila*, *I. carthalinae*, *I. musulmanica* and *I. klattii* but believe that they would. As yet, (update below. Ed) I haven't bloomed any hybrids from it, so I don't know whether any hybrid vigour will appear as it did for me when I crossed *I. klattii* with our large hybrids which were a foot taller, leaves twice as wide and blooming about one week earlier than with the other hybrids. It may act like the other 38 chromosome species such as *I. maritima* and *I. demetrii* which didn't produce any recognisable vigour- except hardiness which has yet to be tested in farther north climates. *I. notha* species is one that I have longed to use in my hybridisation program. It will probably be 1999 before the results can be evaluated.

In the future, it would be nice if someone would double the chromosomes of *I. brandzae* from 20 to 40 which would be great to cross with present hybrids. Also, *I. urumovii* which also has twenty. We might get some fragrance in the tall ones if *I. graminea* would work. It also might work better if it was doubled which would take it from a 34 count to 68. But, maybe not. Who knows? Or, what about *I. pontica* with a 72 count being crossed with a tall hybrid- or species?? One of these days we will know the answers to these puzzlements.

UPDATE: 27.5.'96. They are in full bloom now, and just as intense a blue as blue can be. Just like *I. demetrii*. I don't know how any bloom could be any bluer. The branching is more zig-zag or candelabra than most hybrids. The usual bud count is 4 but several have 5. A couple only have 3.

Dave Niswonger

Dave has very kindly sent photos of *I. notha* should anyone wish to see just what he's enthusing about.

Ed.

A SPURIA HYBRIDIZERS 'WHO'S WHO'

A check of the 1995 edition of the Spuria Check list reveals how widespread are the sources of new spurias. The hybridizers are listed below, in order of the number of their introductions between 1985 and 1995:

B. Charles Jenkins, Phoenix, Arizona- 39

Ben R. Hager, Stockton, California- 22

Floyd W. Wickencamp, Sun City, Arizona- 16

Barry F. Blyth, Pearcedale, Victoria, Australia- 14

O. David Niswonger, Cape Girardeau, Missouri- 12

Eleanor McCown, Holtville, California- 11

Pierre Anfosso, Hyeres Cedx, France- 10

Glenn F. Corlew, Walnut Creek, California- 7

Joseph J. Ghio, Santa Cruz, California- 7

Marion Walker, Ventura, California- 3

Heather Collins, Winchester, South Canterbury,
New Zealand- 2

Larry Johnson, Phoenix, Arizona- 2

Henry C. Rowlan, Little Rock, Arkansas- 2

Dana Borglum, Geneva, New York- 1

Jean Collins, Tauranga, New Zealand- 1

Gene Gaddie, Norfolk, Nebraska- 1

Dr. George Rodionenko, St. Petersburg, Russia- 1

Richard Sloan, Los Angeles, California- 1

Spuria Iris Society 'Newsletter' Summer 1996

LEXINGTON'S METEOROLOGICAL MISFITS

(Yes, it's spelt correctly this time, but next time, who knows? Ed.)

It has been another odd year over here. The winter started early and was very slow in leaving, with heavier snowfall than usual. Between mid November and early April, 59 inches of the white stuff fell. 21 inches of it came in one snowstorm on the 6th and 7th of January. March, which is usually the beginning of spring here, was yet another cold, snowy winter month. April was not much better. On the first weekend of May, the trees still looked as barren as in February, but the grass was green and flowers were blooming, but were three weeks later than usual. In May the temperatures were near normal, but rainfall was excessive. I measured a total of 22.95 inches for the month. Many areas had severe flooding as a result. Tornado outbreaks occurred on the 5th and 28th of May, the latter being especially bad. One tornado came so close that I could see it before I made a dive for an interior closet. We had no property damage, but the winds associated with that darn thing stripped the blooms off my irises. We were later told that the wind was blowing 157mph in this part of the city. Some places had it far worse.

So far, (8th July) this summer has had temperatures slightly milder than normal -at this time of the year, anything under 90 degrees is considered 'mild'- although a few days have reached as high as 100 degrees. Rainfall has been less than average and a dry cold front is moving through now and is expected to bring mild and dry weather for the rest of the week.

Many flowers have bloomed later than usual but as spring turned into summer, bloom times gradually returned to normal. This has been the only year in which SDB's and siberians were blooming at the same time as IB, BB, MTB and TB's. The siberians, spurias, louisianas, Japanese and water irises have done great this year, they were very showy. Most of the bearded irises did well enough for the conditions, but I had a severe rot problem this year. Now, I am in the process of eliminating bearded cultivars that not only rotted this year but were 'rotters' during years in which conditions were less severe.

I am becoming increasingly interested in beardless irises. This year I have added *I. typhifolia*, two versicolor varieties and four more siberians. Versicolors are new in this area but siberians do very well here.

Lately, (August, Ed) I was very busy dividing and replanting most of my Irises and many of my Daylilies. The Japanese and Siberian Irises should have been divided a couple of years ago. I had put that off, because I didn't know where I would find homes for them extra plants, but I didn't want to put good plants in the refuse collection. This year though, I found homes for the extras. One of our youth members decided that she was interested in JI's, so I let her have starts of every one I have. (Her sister got some Daylily starts.) She also got to increase her Siberian collection. Also, I shared some starts with some Round Robin friends.

Fortunately, there have been no more Tornadoes in this area. Those things are not that rare here, and it looks as though they may be increasing in frequency. Two weeks ago, a large thunderstorm packing winds of 120mph passed over the other end of Lexington. We got no rain, but we did have a couple of 50mph gusts back on this end. We had gotten to be quite dry, but yesterday one thunderstorm finally scored a direct hit. So, after days of being 'teased', we got 1.53 inches of rain in 37 minutes.

On the subject of my getting rid of the 'rotters', I hated to, but I had to remedy the problem of having poor performers occupying valuable space. The US is so large and covers such a wide range of climate zones that what might be a 'rotter' here may be a good plant in another climate. Some irises are good enough to grow almost anywhere though. (Do send us a list! Ed)

The general weather pattern here is starting to look more like early autumn. This is normal for September. The weather tends to be less stagnant than during the summer. It is usually more pleasant now than during the summer. Average maximum temperatures fall from 90F on 1st September to 77F on the 30th. Average minimums fall from 62F on the 1st to 51F on the 30th. Frost can occur in September, but in most years it remains frost free. Rain falls on an average of 8 days in the month. Most days are sunny and bright. The two bad things about September are the days getting shorter and knowing that winter will be here in two months.

I have a *Crinum* here that blooms from late June to early August. Since it has been undisturbed the 9 years I have had it, it has made a large clump. In bloom, it is spectacular. In the winter I cover it with a foot of hay. With the mulch and an 18" blanket of snow, it survived a temperature of -40F. In terms of autumn blooming flowers, I have *Hibiscus coccineus*, which blooms from July to November. Japanese anemone blooms late. Black-Eyed Susans keep blooming when dead flowers are removed. Remontant irises are now starting to bloom. 'Polar King' is probably the plant that is the show stopper for Autumn. I tried *Caryopteris x cladonensis*, but lost it. It survived two winters, but this spring, when the weather stayed abnormally cold and wet, it rotted. March averaged 9F below normal, April 8F below normal.

Snowfall is extremely variable here. Some years, only a total of 10" may fall all winter, while in some years the total has reached 62-65". In an 'average' winter, we get a total of 28". This comes in a couple of larger four to six inch snows, as well as a number of light dustings.

Usually, snow does not cover the ground longer than ten days in a row. To have snow cover longer than 25 consecutive days is rather rare. In the late '70's snow covered the ground 70 straight days two winters in a row. I dread the thought of winter. Most days are dark, cloudy, windy, and raw. Wind chills of -30F are common, -50F is not that unusual, and we have seen wind chills as low as -100F. Fortunately, that has happened only twice.

One thing I like about AIS Section bulletins and newsletters such as the SS&J is that most of the articles were written by people whose work would otherwise not be published. Those articles are very interesting and contain many new ideas.

Mark A Cook. Lexington.

All of those of you involved in research whom I haven't heard from yet, please don't be shy, you can see from Mark's last paragraph that it's not just my editorial wiles, but that your contributions have an eager readership in general. We would dearly love to hear from you.

Ed.

TRAVELS WITH IRISES- PART 2

In May 1992, I arrived in Melbourne, Australia, to stay. What a benign climate, although the favourite expression here is "If you don't like the weather, wait five minutes". I am now living in suburban Sandringham, about a 15 minute walk through the town from the beach on Port Phillip Bay. This area is really built on the rise of a sand dune, and I have yet to understand the idiosyncracies of this soil. Surprising to say, it reminds me of peat moss- when wet it is so soggy as seemingly to containing no oxygen.; when dry, it repels water. Often in summer I have watered to what I though might be excess only to discover all to be bone dry a few inches below the surface. Of course, the ground constantly needs to have organic material added. From stone to clay in Canada, and now to sand. It would be nice one day to have some good soil to work with.

In summer, the temperature can go quite high with a dry heat as the winds come down from the 'out-back' to the north-west. These hot conditions have not lasted long the years that I have been here, but the drying winds can stress plants that are not watered. In Canada the winds from the north were also dry, but cold, whereas the winds from the south (the Gulf of Mexico) were hot and wet. Here the winds from the south are cold and wet from the Southern Ocean. In winter there are really no frosts so close to the bay. Once or twice I have wiped some slush off the windscreen of the car in the morning. Yet, one year, a volunteer fibrous-rooted begonia seedling appeared from somewhere and grew to blooming size. Because the temperature is neither too hot nor too cold, a wealth of species can be grown, including most of the iris family. It seems strange to come all this way to grow plants which are indigenous to North America- *I. prismatica*, *I. tridentata*, *I. missouriensis*, and the wonderful Pacific Coast Iris. Also, the crested iris do well here as do the winter iris *unguicularis* and *lazica*. Other species which I am growing for the first time are *foetidissima*, *songarica*, *laevigata*, *maackii* the series *Chrysographes*, and many of the species of those hybrids which I grew in Canada (*spuria*, *sibirica*, *hexagonae* and *lensata*). The series *Chrysographes* did not grow well for me in the sand until I learned that they like moisture. Indeed, it has been a surprise to realise how many iris species prefer to have wet feet for at least part of the year- the 6 *laevigatae*, the 4 *hexagonae*, the 3 *sibiricae*, the 6 *chrysographes*, *setosa*, *tridentata*, *prismatica*, and , perhaps, some of the *spuria* (especially *I. halophila*), for example. Quite a long list- and then there are the hybrids. I now have 4 small pool areas to accommodate these potted plants.

No climate is optimum for all species, of course. It is a bit too warm here near the bay for the dwarf bearded to bloom as well as they did in Canada. They prefer a bit of frost. Also the siberians are about half the height with comparatively little bloom. Perhaps I should put these in water, at least in the spring. And then there are the failures. Some people grow Dutch Iris very well in Victoria, but mine seem to get virus and die (Mine too. Ed). A few growers have some success with pure Arils, but not I. These are so intriguing that I intend to persevere. Lately, for various reasons, I have been growing most new acquisitions in pots. This usually is successful, but too often a plant (usually one that you particularly want) seems to be flourishing only to then catch some incurable ailment and collapse. I have set up a palliative care unit to try to make the last days of these as comfortable as possible.

The first spring I was here, I 'house sat' for some friends who were visiting over-seas. They live near the Melbourne Botanic gardens, and it was a learning experience to visit each day to see what species were displaying their glory to entice the birds and bees- all sorts of blooms that I had never seen before. In particular I was captivated by *Moraea aristata*, and this set me off exploring other non-iris iridaceous plants. Now, thanks particularly to the seed pools, I have a variety of species from across the world- *Anomathecas*, *Babaianas*, *Hesperanthis*, *Moraeas*, *Romuleas*, etc. The South American irids are especially of interest to me, and I grow species of *Alophia*, *Calydorea*, *Catila*, *Cypella*, *Gelasine*, *Herbertia*, *Hesperoxiphion*, *Neomarica*, *Phaiophleps*, *Phalocallis*, *Solenomelus*, and *Tigridia*. Some species which appear not to be growing here are *Anomalostylus*, *Cipura*, *Cobana*, *Ennealophus*, *Kelissa*, *Larentia*, *Mastigostyla*, *Nemastylis*, *Onira*, *Rigidella*, *Trimezia*, and *Tecuma*. Something perhaps for the future.

Such an article would not be complete without a plug for some of our native species of iridaceous plants. These include *Diplarrhena moraea*, *Isophysis tasmanica* (4 colour forms), *Libertia paniculata* (plus 3 species from New Zealand), 4 *Orthrosanthus*, 18 *Patersonias*, and *Sisyrinchium pulchellum*. Of the few that I grow, I have particularly enjoyed *Diplarrhena moraea*, *Orthrosanthus laxus*, and *Patersonia occidentalis* (both the purple and the white forms). I also must mention some of the outstanding Australian iris breeders that I have been honoured to meet. At the risk of forgetting someone, I will list Barry and Leslie Blythe and family (bearded), John and Ellen Glen (Pacific Coast), Graeme and Helen Grosvenor (bearded and Pacific Coast), John Taylor (louisianas), John Baldwin (bearded), Sam Fankhauser (Arl-bred), and Les Donnell (bearded). There are others from earlier times and from other parts of the country whom I have not had the pleasure to meet.

Canada is one of the world's great countries- but so is Australia. I do not miss the snow nor the minus 20 degree F. temperatures. It is nice to be able to have flowers outside the year round, rather than just for 6 months. One could even have iridaceous plants in bloom every day of the year. I would recommend this part of the world (Australia and New Zealand) to any iris lover. Plan to have two springs one year, you won't be disappointed.

Arnold MacLaughlan

Arnold wishes to pass on grateful thanks to Anne Blanco White who discovered the addresses of those who could supply him with seed he'd been unable to find, and John Metcalfe of Four Seasons nursery who very kindly supplied it, and at no cost too.

Ed.

COMPOST CONUNDRAS

Well, I have a problem. Anne told me to turn them, but when I started building the heaps, I was desperate due to the state of the soil, and was helping out a friend who'd recently had a son, and with two equines, had a lot of muck to shift. So I used pallets. My, they do make nice large heaps, which heat up so much that they fry and don't think of decomposing if I cover them, and if I don't, they sog and are too cold to do so. Does anyone know when's best to cover, uncover and re-cover them? Short of sticking an arm in monthly? I have had one or two that looked vaguely reasonable, even though I can't face turning them, but out of 8 that's not many. My smaller version at home for my garden composting has a wood pile on top of it now, but the corner I can see looks simply mummified. Could we have some discussion for the non-athletic and small amongst us? There must be favourite methods about. I am using green weeds and soil layers amongst the horse muck and coniferous shavings, which will rot, although newsprint won't. I've had a heap honoured by a grass-snake this year, so only hope that there are now 100 odd snakelings about.

Ed.

THE SEED BANK

Will everyone please note that while I apologise profusely for the omission of our SDO's address and other info. about buying seed etc., in the last issue, which may have contributed to the poor take-up of the unusually wonderful seed available, the SDO's address is always listed in the front, for those who read this publication. Hopefully what I've purchased will germinate well and I will be able, in due course, to gloat over the resulting beauties which you mostly missed out on. Silly you. For those of you for whom it was simply an over-sight, do purchase them now before they get too old. 30 pence per packet covers postage as well. How can you lose?

Ed.

ENSATAS

Ensata cultivars:	Currier McEwen.		
'Kirigamine' x bee		'Shui-no-Sode' x bee	'Yoakemae' x bee
'Vasily Alferon' x bee		'White Parachute' x 'Southern Son'	Mixed.
'Gracieuse'	Sue Pierce		

SIBIRICAS

Sibirica cultivars	Dale Hamblin, (the descriptions are his-mostly. Ed)		
'Blue Brilliant':	old medium blue bitone. Morgan Award'67.		
'Blue Kaliedoscope':	ruffled light blue, blended blotches of blues & violet.		
'Chilled Wine':	wine red and blue, Hager's.		
'Demure Illini':	(my favourite) Showdown selfed. I have 100 crosses with this.		
'Desna Blue':	seedlings are darker, feathered styles.		
'Dewful':	blue self, stylearms very light blue-very nice.		
'Dreaming Yellow':	McEwen's parent of 'Butter & Sugar'.		
'Esther CDM':	beautiful white		
'George Henry':	white, orange brown fall shoulders and signal.		
'High Standards':	runner up, Morgan Award '95, dark blue.		
'Jaybird':	beautiful blue.		
'Lavender Bounty':	McEwen ever-bloomer.		
'Mabel Coday':	gives shorter siberians, from 'Showdown'. Morgan-Wood medal, darkish violet-blue.		
'Nigrescens':	Van Hote (1875).darker violet, towards bluish.		
'Percherette':	ruffled pink-toned violet self, deeper veining.		
'Percheron':	very large and beautiful, from Bee Warburton.		
'Pink Haze':	pinkest.		
'Pink Sparkle':	special looking pink from Ben Hager.		
'Pirate Prince':	no signal, purple.		
'Rimouski':	Preston's white, falls raise as flower fades.		
'Rosebud Melody':	Very large dark purple- overlapping falls.		
'Shirley's Choice':	white tetraploid.		
'Shirley Pope':	Velvety-standards red-purple, falls similar, white signal.		
'Showdown':	the breeder's choice, beautiful full wine-red.		
'Sultan's Ruby':	Morgan Award winner '94, very beautiful.		
'Temper Tantrum':	deep purplish red self, blue spot on falls.		

Sibiricas; mixed miniatures	Currier McEwen	I. sibirica 'Showdown'	SP
diploids	"	I.chrysographes var rubella. (Possibly a hybrid>)	Chris Rose
tetraploids.	"	I.chrysographes mixed hybrids	SP
I.sibirica 'Red Flare'.	Sue Pierce	(I.delavayi 'Didcot' x bee) x bee	SP
		I.sanguinea (ex selected sdlg from 'Kamayama')	CR

FOETIDISSIMAS

I.foetidissima (ex orange berried bright yellow flowered form collected from Picos di Europa by R. Nutt) CR

SPURIAS

Species: *I. maritima* (spuria) CR

(All those below were very kindly sent by Charles Jenkins and the descriptions are his. Charles mentioned that the listings are of one parent common to a number of crosses, so you're getting several crosses in each packet.)

Hybrids: 90M#2C. Selected seedling Ex China coll Waddick. Very vig. early evergreen plant, small pale blue fls. Possibly halophila, will correct if necessary when possible.

'April's Birthday'. (Jenkins'94) 38-50" VE. White Self, large yellow signal. Rebloomed in Oct. at Salinas, CA.

'Clara Ellen'. (Jenkins'93) 34-42" E. Standards light purple as style arms, falls yellow, purple edging at crimped margins intensifying at apex with narrow purple lines.

'Little Splash'. (Jenkins'97) 28-32" VE. Creamy white, large yellow splash in falls. A real 'Tiny Tot'!

'Purple Smoke'. (Jenkins'95) 42-51" M. Stds purple, falls purple washed over yellow, more yellow at signal area.

'Stella Irene'. (Jenkins'95) 38-47" M. Stds dark purple, falls black purple, narrow yellow signal. This is the closest to a black spuria.

'Universal Peace' 36-47" M. Standards purple, falls purple lines over ivory ground.

Mixed Large. Should give Predominantly large stature plants in a wide range of colours.

Mixed Small. Should give Predominantly small stature plants in a mostly yellow colour range.

PSEUDACORUS

I. pseudacorus. (ex 'Golden Queen' seedling with strongest signal markings) CR

I. pseudacorus 'cream form' (18-20 fls per in water) SP

SETOSAS

I. setosa. (seed from 2 clones ex autumn '91 BIS distribution.) CR

VERSICOLORS

I. versicolor. (seed from 3 clones as above.)

(Important Note: Since "going to press" Sue has received from Tony Huber a fascinating collection of seeds from his hybridisation programme. These have been sent to Gary Lewis and include *I. versicolor* (red, purple and light blue) and a hybrid strain with large flowers; *I. Shrevei* (*virginica shrevei*); *I. Spec.* - cross of *I. virginica* var. *virginica*; *I. Spec.* - *Reversicolor*; *I. Spec.* - cross *I. Versata* X *Biversata* (*Versicolor* x *Ensata*) in many colour forms; *I. Hookeri* (*I. setosa* var. *canadense*) in two forms; one very dwarf; and *I. Shrevei*. These are supported by chromosome counts on which Anne has very kindly offered to report in the next newsletter.)

Philip Allery.

IRIDS

Bellamcanda chinensis. Ian Smith.

MEMBERSHIP LIST:

CHANGE OF ADDRESS: Mrs. Anna Mae Miller, 1700 Bronson Way, Apartment 155, Kalamazoo, MI 49009, U.S.A.

(Anna Mae's husband Ronald is in poor health so they have decided to move to a retirement apartment. They felt that the upkeep of their garden would shortly become too much for them. I visited this extensive and lovely garden in July, 1990 and can imagine what a wrench this must be. The Group send them both very best wishes in their new home.)

DELETIONS: Mr. Julian Bentley, 19, Kemington Road, Kennington, Oxford, Oxon. OX1 5NZ.

NEW MEMBERS: Mr. & Mrs. Peter Farrell, 'Flaville', Lichfield Road, Hopwas, Nr. Tamworth. B78 3AQ.

Mr. M.J. Hodds, 165 Carr Lane, Grimsby, N. East Lincolnshire, DN32 8JF.

Mr. Tony Huber, 4137, 2e rue, Chomedey, Laval, Quebec, Canada. H7W 2N2.

Mr. & Mrs. G. Guthrie, 94, Greenfield Road, Brantford, Ontario, Canada. N3R 7AG.

Mrs. N. Harris, 34, Blofield Road, Brundall, Norwich, Norfolk. NR13 5NU.

Mr. Robert Kontak, 207, Hinsdale Road, Camillus, New York 13031. USA.

Mr. C. Rickards, 45, Connaught Road, Norwich. NR2 3BP

Mr. & Mrs. R.A. Wise, 197, The Parkway, Iver Heath, Bucks. SLO ORQ.

LATE NEWS:

The Group is a beneficiary under the will of the late Miss Evelyn M. Sharland, one of the Group's founder members, whose death was reported in the September, 1995 newsletter. The pecuniary legacy of £200 plus interest of £5.92 has been received from Mr. Richard H. Sharland, a nephew and one of Miss Sharland's Executors, whom I have thanked.

SUBSCRIPTION REMINDER:

If your address label contains "Mp. Exps. Decr. '96" this will be your last copy of the newsletter on your present membership. The addition of "(A.P.)" underneath that date means that you have a credit towards the next subscription which is insufficient in itself to meet the full sum due. 1997 Membership subscriptions are due on 1st January, 1997, viz-

£2.50 - Members in U.K. and all countries in E.E.C. postal rate area; and £3.00 - All other members resident overseas.

If more convenient you can always pay a larger sum; the balance in excess of the year's subscription being credited as an advance payment against future subscriptions as they fall due. The above rates are not expected to cover the actual cost of the two newsletters and their postage to you. I am, however, reluctant to recommend an increase in subscription rates which may bring about the resignation of members who would otherwise wish to continue. If you are able to give financial support by way of donation, plant sales or otherwise, this will help to keep the Group in a healthy financial state.

Philip Allery

A NEED FOR LARGER TYPE PRINT?

Production of the Newsletter by computer gives us the facility of changing type to suit the requirement of the reader. It is only by using this small print that it is possible to keep within affordable postage costs. If there are other members who, like me, find reading this small print tiring for the eyes, do let me know and I will investigate the possibility of a special run with larger print. Philip Allery.



A/P

'Iris Garden'

DAT 95

This print was kindly sent to me by David Trevithick for just such an occasion, so my thanks to him for making this page so much more enjoyable. Ed.