



The Group for Beardless Irises of the British Iris Society

Newsletter No.40 - April 1997

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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 COMMENTS

Being the pessimist that I am I must touch on the most worrying aspect of the coming iris year. This is of course the continuing rainfall deficiency. I have no accurate figures at hand but it has been brought home to me most dramatically in that for the first time ever in early March a racecourse has had to be artificially watered to provide a soft enough surface for horse racing. In the past 'soft' or even 'heavy going' has been the norm at the end of winter. This year it has been 'firm to good'. We probably have a 6" shortfall of subsoil moisture. If this trend continues we face not just the banning of garden hoses/pipes (What about carwashes! Ed) but even standpipes in the streets in some areas. For gardeners especially it is a dread thought. I can only hope that my pessimism is unfounded. If I am right the best that we can do - and that will be expensive - is to tap all rainwater gutters and install storage tanks. That is for the future, then all ditches and small streams will run dry. If this were a financial tipping sheet, which thank Heaven it is not, and if I were competent enough I think I would be advising investment in desalination technology. If the so called global warming is accelerating this will have to come. (At least we're an island, useful for such plants but not so good though if the melting of the Antarctic ice shelves *does* give a 5m rise in sea level. The 4,200 square kilometre, 300m thick Larsen-A shelf collapsed in January 1995. The Antarctic peninsular climate has warmed by 2.5 deg.C over the last 50 years, much more quickly than the global average. Ed) It will at least be cheaper than space technology, however interesting that can be.

If the trend for hot dry summers does indeed continue more people will have to be enlisted to help in plant conservation. Far too many of the general public at present are put off by the risk of failure with some precious rarity to contemplate growing it. (Most of us aren't too successful at gardening. Ed) With the prospect of the most expert growers being unable to keep all their plants in cultivation I wish that say, 1 in 10 households could be dragooned to grow at least one special plant. I have often thought that such a widespread method would make a better trial ground than those in use at present. New hybrid fruits, vegetables and ornamentals could be raised and tested in vast numbers. I have touched on the large areas needed for testing previously. This winter I have also realised that one must never give up on Mother Nature. In 1995 Mrs. Criddle sent me some 2 year old seed of *I. magnifica*. A month ago I had the best germination of such Juno seed ever. It is a credit to Margaret Criddle's seed storage and a case of pure luck (Piffle. Ed) where my growing methods are concerned. As long as the seed pot never dries up it seems that something will eventually 'turn up'. I feel like Micawber in real life.

A more joyful aspect of 1997 will be the celebration of the 75th anniversary of the founding of the BIS, our parent society, and the publication of the book on species irises. I hope as many members who feel that they can invest £65 (or slightly less if a bulk purchase discount is available) will buy the book. At first mention it seems an awesome price but as such reference books go I can assure you that it is very reasonable. Nevertheless I realise that many members will recoil at the price but the long hours spent by members of the BIS need to be recognised and the very least we can do to repay them is to make sure the book is a sell-out. Similarly the BIS President would welcome contributions to the colour plate fund for an enlarged 75th Year Book. I feel that it would be a suitable gesture if our Group might contribute towards a full page picture of one of our specialities. (Or even several on the one page? Ed) I think such a page costs upwards of £250 and I would welcome suggestions for such an iris that would be suitable and any contribution that you may feel able to send. Beyond that I will say no more knowing full well that many, many members are fully stretched financially as it is. If there is no response I will fully understand. Best wishes for 1997.

Raymond Bomford

RUBY ALLERY

Although most members of the Group did not have the pleasure of meeting Ruby Allery, we all condole with Philip, his sons Christopher and Martin and their families, over the loss they suffered by her unexpected loss in January this year. The interest that she took in all her family's doings, and the support and help Philip enjoyed for his work with irises for this and other groups, contributed more than was widely known.

But Ruby was more than a support - in spite of long -standing diabetes and its consequent problems, which she met with great courage and did not allow to overshadow her life more than she could help, she pursued her own interests. She was an active gardener with a special interest in alpinists, a collector of ceramics and stamps, and a practical supporter of the British Diabetic Association and other charities. Stamps not needed for her own collection, for example, went to Oxfam.

Above all I shall remember her as a friend from whom I always gained at meetings and the wide -ranging conversations that took wing from her lively mind, but who also possessed an inner core of strength and calm. Whilst other memorials, including a garden, are being planned, it is especially good news that she will be commemorated by an *Iris ensata* seedling raised by Philip which has been recommended for an Award of Garden Merit following the RHS trial at Wisley. Typically, she would not agree to its being given her full name, but 'Aldridge Ruby' met with her approval and will maintain our memories of a fine lady.

J.H.

REPORT OF THE HON. TREASURER AND MEMBERSHIP SECRETARY

Ruby: You will understand if I make this a brief statement. Ruby's sudden death some 72 hours before she was expected home from hospital to convalesce left me in shock and the death of my younger (and only) brother shortly afterwards added to my grief. My sons Christopher and Martin join me in sending our heartfelt thanks for the many expressions of sympathy and the attendance of representatives of the British Iris Society and its Groups at Ruby's funeral. The continuing support which I have received during this sad time is very much appreciated. I extend my sincere apologies to those members whose correspondence over the past year has not been dealt with as promptly as I would have wished.

Finances: A balance as at 31st March of £964.12 is over twice the amount reported a year ago. This is due in its entirety to the generosity of members both past and present. The late Miss E.M. Sharland bequeathed the sum of £200.00 and other members donated a further £160, making a total of £367.92. In addition seed sales realised £9.25 and plant sales £57.00. Our thanks are due to Raymond Bomford, Pauline J. Brown, John Carter, Mrs. Joyce Dixon, Peter Maynard, Norman Payne, and J.R.M. Wilkins. Plant sales were undertaken

which Evelyn White, Editor of the American Japanese Iris Society added. Gary Lewis raised £9.25 from the sale of seeds and he has already raised £41.40 this year. The current subscription level is insufficient to meet the cost of the Group's outgoings which will make it necessary to review the 1999 subscriptions. Until then I shall recommend that the rates remain unchanged. Current balances contain advance payments in excess of £150.00 and a sum of £73.87 is due to me for expenditure not yet reimbursed.

My sincere thanks go to Mrs. Lucy Wilkins for a very thorough audit of the Group's Accounts. If time permits the balance sheet will be printed and sent with this newsletter.

MEMBERSHIP : During the year six new members joined the Group. We welcome also new members joining since 1st January last who are:- Mr. Norman Bennett of Weymouth, Dorset; Mrs. A. Butler of Heath Hayes, Cannock; Mr. D.W. Carver of Oxshott, Surrey; Revd. Fr. Philip Jones of Erdington Abbey, Birmingham; Mrs. Janet M. King of Spencers Wood, Reading; Mr. Crispin Mason of Macerata, Italy; and Mr. Laurence Ransom of Laroque Timbaut, France;

Philip Allery

EDITORIAL

Well folks, the last issue was rather a whopper so I'm coasting a little over this one. Philip will be printing it off for me as he did last time, which involved rather more fun and games with pcs than I ever wish to be involved in again, and I'm sure that he'll second that. I especially wish to be able to avoid dumping such problems in his lap this issue as he has more than enough to bear with now. Although he's proved a great stalwart, despite being sorely tried by me at times, I don't want to wear him out! All the material reprinted from SIGMA came under his auspices. At which point, a warm welcome to their new editor, Colin Rigby, who's started off very much on the right foot as far as I'm concerned by kindly granting permission for me to pilfer some very enjoyable articles. Many thanks to him and I wish him lots of fun. Heartfelt thanks too to all those folk out there who've either granted permission for me to fillet their publications, or reproduce the articles they wrote- both in Lewis' case, but that's him all over- with whatever editorial shavings I felt necessary. There's so much re-printing in the GBI Newsletters that their friendly attitude is vital. Anne must also be mentioned here since, as you'll see from the volume and technical nature of what she's supplied us with, I've kept her hard pressed. Definitely 'above and beyond the call of duty' this time, but she has risen to it with even more than her usual helpfulness, which has given you a much more interesting read than I would have managed to provide without her. I really do very much appreciate all such help. If given long enough, I can do the button pushing, but the more technical material such as that which has so kindly been sent to us by Tony Huber and Professor Dr. El-Emary goes so far over my head that I use binoculars. Don't be put off by its apparent technicality though, even I managed to get the gist of what Anne has so efficiently filleted for us, and if she can drop it down to my level, then the rest of you can certainly access it. Well, you can certainly all read, and that's what it takes.

Although I don't wish to intimidate any new members by appearing to expect articles from them of necessarily the same length as Derek's, although I would be only too pleased to receive such, I really would like to beg you all to gird you loins and write something if you haven't. It is of interest to read of your gardens and how you're getting on, and cannot really be too much to expect of you on joining. After all, you may well never write anything else and, indeed, aren't expected to, although it's always welcome. I really would be only too grateful if you could write your introductory pieces. Please bear in mind that since this is almost exclusively a postal Group, if newcomers are not prepared to introduce themselves, we will largely remain strangers to each other, lacking any friendly feeling of fellowship, which would be a disappointment. Also, it isn't really fair -in such a Group as this- to expect a Newsletter full of interesting articles (I hope!) whilst not contributing to the Group in any way oneself. Since there's so much scientific and professional input, the simple gardeners amongst us (myself included!) may possibly feel intimidated, but if you'd like the balance swung a little more in the direction of the interests of the bulk of the membership, the answer is to send me articles.

Iris wise, I've been amazed by the results from BIS seed received and planted in January '96 and should all my bucketed waterlovers survive what promises to be an even more waterless year than '96 was, I ought to have enough to be able to think of hybridising. (Whoopee, plus several etceteras!) The tenth of April saw three seedlings up from seed received in January '97, one of the PCI 'Pinewood Strain Mxd' and two ensatas from seed of 'Dramatic Moment', by the 16th, ensatas and sibiricas were popping up all over, sib. 'Beautiful Forty' having all 9 germinate, and the ensatas were coming through in early May. If I didn't wash them away with overly enthusiastic watering, then they may even survive. Mind you, I've now got 6 seedlings up in a potful that carefully stated that it contained 3 seeds, only one of which can be definitely attributed to the label, as it's now in its second year, whilst the others started coming up last autumn and are still appearing, so who knows what will flower under what misnomers. Maybe by then I'll have read the books by Currier and Anne and will know what they are! The potful in question is an F2/2 'Holden Clough' hybrid, and it came up white, as you may recall, and so is the young growth, well, very nearly so, the ribs and 'watermarks' being green. Most odd. I also have a chrysographes seedling that germinated last autumn that's still completely albino and another has come up this spring in that potful. They're both manky items with quite a lot of browning on their leaves, so shan't be ground-breaking! I'm sure that these things must crop up quite often with serious hybridisers, but that we don't hear of them since they come to nothing. My pots were so dry on the allotment that I'll be most surprised if anything survives in the way of seedlings, I've little faith in their vestigial root systems in the face of my neglect. Apparently this spring is dryer than the great drought of 1976 so far, a mid April survey by the meteorological office stating that my area had had 4% of its usual rainfall and that the eastern counties are at their driest for 200 years. Although today's filling my run-off barrels, that's very much an aberration, and I expect it to get dryer yet.

There seem to be more blooming peculiarities this year, if you'll excuse my phraseology. I'm one of three people I know who have TB's budding up in late April, and I might well quite soon have Intermediates in flower with my SDB's, whilst my japonica 'Ledger's Variety' is in bloom nearly 6 weeks early on last year, and a month earlier than the year before. Anyone else who's experiencing similarly befuddled bloomers, do write in.

Ed

SOUTH OF WATFORD

Last year was extremely dry and although the autumn rainfall was adequate in itself being distributed over several weeks it didn't compensate for the dry summer. On my Sussex clay it wasn't possible to replant before mid-November. Well, I got a certain amount done and hoped to get a lot more shifted over Christmas, but flu put a stop to that idea. All the same, there has been virtually no rain over December and January. The stream which should be rushing down its bed can barely trickle and I have little faith in dykes being filled this February. Now last year the spurias were fine upstanding plants by this time, but this year they are such miserable apologies for their species that the deer can't be bothered to trim their tops; the sibs, Japs and Pacific Coasts though seem to be in quite cheerful form. Naturally a couple of rabbits decided it was necessary to prune my foetidissimas to ground level so they will have to be heavily mulched against the summer. Those plants won't flower this year, but should do so next if they aren't pruned again. The moral of much of this is to ask if all of you in the rain shadows of southern England have watered your irises since the soil thawed and mulched your beds? If you are growing the wet-land irises then a saturated bed by this time of year makes all the difference to summer performance. Mulch does help to keep soil and root runs cool and so helps plants to survive when the watering bans are imposed. And Sue's comments on composting do need following up. Have any of you tried any of these fancy bin-composting systems? If so, we would like to hear about it and whether or not you found it useful, efficient and convenient. I have a horrid feeling that with the modern usage of pre-packed meals and frozen vegetables so that there is no kitchen vegetable waste to get rid of there is a tendency to burn all the garden rubbish. I hope I'm wrong.

Anne Blanco White

GROUP LIBRARY

The library is now residing with me, rather than with Jennifer, so hopefully I'll manage to become rather better informed, if over time. Unless, of course, you borrow all the books...Although my education is undoubtedly a most necessary use of them, don't let it put you off borrowing them as that's what they're there for.

Ed

We are grateful to Dr. El-Emary for a collection of research papers about irises and, in the main, their chemical compounds. The papers will be put in the library and have much to offer any reader with a working knowledge of bio-chemistry. (These will be available subject to permission.)

Group 1 - These relate to Dr. Yabuya's article on p.15 of the October '96 issue.

P-coumaroyl glycosides of cyanidin and peonidin in the flowers of Japanese garden iris, *Iris ensata* Thunb. T.Yabuya, M.Nakamura & A.Yamasaki. *Euphytica* 1994- 74: 47-50.

Group 2- Production of Triploid and Trisomic Plants in Japanese garden iris *I.ensata* Thunb. T.Yabuya, T.Sushida and T.Adachi. *Herbertia* 50, 1994/1995.

Variation in the nucleolar organising regions in Japanese Garden Iris and its wild forms (*I.ensata* Thunb.) T.Yabuya, S.Kihara, H.Yoshino and A.Ohba, 1995. *Cytologia* 60: 383-387.

Group 3- Contrasting effects of anoxia on rhizome lipids in Iris species. A.M.Hetherington, M.I.S Hunter R.M.M. Crawford, 1982. *Phytochemistry* vol.21, no.6, 1275-1278.

2. Iridal levels in *Iris* rhizomes - effects of wounding and dehydration. J-P Bonfils, Y. Sauvaire, Y. Baissac & F-J Marnier, 1994. *Phytochemistry*, vol.37, no.3, 701-705.

3. Towards the characterization of radicals formed in rhizomes of *I. germanica*. R.M.M. Crawford, D.A. Lindsay, J.C. Walton & B. Wollenweber-Ratzer, 1994. *Phytochemistry*, vol.37, no.4, 979-985.

4. 3-Déméthylplastoquinone-9 et 3-déméthylplastoquinone-8, isolées des bulbes d'*Iris hollandica*. C. Etman-Gervais, C. Tendille & J. Polonsky, 1977. *Nouveau Journal de Chimie*, vol.1, no.4, 323-325, July. In French.

5. Iristectorones A-H, spiroterpene-quinone adducts from *Iris tectorum*. K. Seki, T. Tomihari, K. Haga & R. Kaneko, 1994. *Phytochemistry* vol.37, no.3, 807-815.

6. Isolation and characterisation of a new triterpene from *Iris missouriensis*. S-M Wong, J.M. Pezzuto, H.H.S. Fong & N.R. Farnsworth, 1986. *Journal of Natural Products*, vol.49, no.2, 330-333, Mar-April.

7. Studies on constituents of *Iris* Genus plants. IV. The constituents of *Iris florentina* L.(2¹). M. Arisawa, N. Morita, Y. Kondo & T. Takemoto, 1973. *Chem. Pharm. Bull.* 21,(10), 2323-2328.

8. Studies on the constituents of two *Iris* species. A.A. Ali, N.A. El-Emary & F.M. Darwish, 1993. *Bull. Pharm. Sci., Assiut University*, vol.16, pt.2, 159-162.

Anne Blanco White

Anne has most kindly reviewed these for us and her summations will be appearing in due course.

Ed

IRIS INFORMATION

'A Guide to Species Irises'.

This contains lots of photographs, line drawings and maps and covers nearly all of the known irises of the world. Naturally, more have been described over this last winter, but that's nature for you. The BIS can provide copies at £52.00 to members who can collect it or employ someone to do so from the Society Shows at Wisley or the AGM at Reading University. For those others of you not as fortunate, it can be bought for £55.00 including p&p from Mr. Neville Watkins, Hon. Literature Secretary, 31, Larkfield Road, Farnham, Surrey GU9 7DB.

New Zealand Iris Society's International Symposium

Alison Nicholl and hec Collins have kindly been keeping us up to date with the plans for this which will be held in the year 2000 when the NZIS will offer a symposium and a tour of private and public gardens in the 'off' season of the northern hemisphere. There will be an Official Opening and Introductions on the Friday evening, garden visits on the Saturday, a Judging Workshop on the Sunday morning and then AGMs of the Dwarf and Species sections. Garden visits and garden workshops will be on the Monday, whilst their AGM will be on the evening of the Saturday and a function on the Sunday evening. All those interested, start saving! The Convention Secretary is: Patricia Forsyth, 'Beccles' 19, High Street, Bulls, N.Z.. Tel: (06)332 1035.

N.Z. News: Gwenda Harris writes that 'I have had a few problems establishing 'Emma Ripeka'. She seems to prefer a rather warmer climate. However, there is currently (Autumn here) some rebloom and I have been relishing that lovely blue. There was a really good bloom season last spring, but an appalling late spring and no summer have presented enormous problems like weeds, leaf spot, iris rot etc. Only the most dedicated gardeners remain enthusiastic. Just this week though (18.3.) we are enjoying a few warm and sunny autumn days. I would love a whole month of this.'

Hybridising Tetraploid Ensatas: Apparently 50 % humidity and 80 degrees Fahrenheit are required for seed to set on these. If anyone has any experiences to relate, please write in.

The Society for Japanese Irises 1996 Popularity Poll

1st: 'Rose Adagio' (13 votes).

3rd: 'Kalamazoo' (11 votes).

5th: 'Cascade Crest', 'Bellender Blue' (9 votes).

2nd: 'Japanese Pinwheel', 'Freckled Geisha', 'Electric Rays' (12 votes).

4th: 'Crystal Halo' (10 votes)

Currier McEwen's 10 favorites of 1996 were:

'Southern Son' -for being nearest to true blue and for its long bloom season.

'Hekuin' -for its true blue and white lines.

'Midsummer Happiness' -for its light blue and tufted centre.

'Electric Glow' -for its pattern.

'Oriental Classic' -his favorite white

'Love Goddess' -for its progress toward yellow.

'Purple Plus' -his favorite multipetaled.

'Freckled Geisha' -for its edged pattern.

'Fourfold Pink' -his favorite pink.

'Japanese Pinwheel' -his favorite 'red'.

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Three of the above appeared in the AIS' JI awards for 1996, 'Kalamazoo' being joint first, 'Electric Rays' joint runner up and 'Bellender Blue' receiving Honorable Mention.

Ed

Spring Trek/Mini Spuria Convention: Region 15 and the Spuria Society are holding this on April 17-19 1998. Entitled 'Rainbows of the Desert' they've enlisted Barry Blyth from Australia as their special guest speaker and their hotel HQ will be the Metro Wyndham, Phoenix, Arizona. Any enquiries to Bobbie Shepard, 3342 W.Orangewood, Phoenix, AZ 85051, USA.

Spuria Iris Society's 'Newsletter' Winter 1996

Re- homing ensatas: Clive Russell has had no response to his plea for help with his ensatas. Someone is needed to split and sell them since Clive is inundated with other matters. He would be prepared to mail or deliver them, so do contact him if you can help. 47 Station Rd., New Barnet, Herts EN5 IPR

Plants for Sale: Clive also has spurias 'Shelford Giant' and 'Media Luz' for sale. I have John Beal's newly registered spuria 'Ashleigh Lemonlime' to sell for the Group, so book them now for the autumn. Also ensatas 'Gracieuse', 'Laughing Lion' and 'Pink Frost', but very few of these, so first come, first served. No more knowledgeable eye than mine has been cast over these, so I can't say whether they're correct. They came from Bridgemere and if anyone knows for certain that their stock is wrong, please do tell me. They did have sibiricas mixed in with their ensatas when I was last there, and didn't take kindly to it being pointed out at all, so there is a possibility.

Ed

IRISES IN OXSHOTT

As a new member to the Group the Newsletter editor informed me that I was invited/expected to contribute an article by the way of personal introduction. So this is it; the story of a garden. Our house 'Beverstone', is one of those friendly Victorian houses that one feels should be full of youngsters, as indeed it was until they departed and started filling their own houses with offspring. It is set in a 2 acre garden, and if I tell you that Oxshott is a few minutes up the A3 from Wisley, most of you will know more or less where it is. Over the past 25 years the garden has taken on many forms as enthusiasms came and went, but none so dramatic as our decision two years ago to get rid of a lot of what I think of a horticultural garbage (things like escallonia -a pet hate!); shrubs of but little merit simply put in to fill gaps. At the same time we dug out a lot of plants that were purchased simply because we more or less liked them at the time, never taking into

consideration their suitability for the places they occupied. The purpose of all this was to clear a space for our two new enthusiasms (says he, sounding rather like Mr. Toad), irises and daylilies. I mention these two in the same sentence because they did actually arrive here as a double act. We developed an instant love affair with the modern iris at just about the same time as we also discovered the modern daylily. And, of course, as far as their bloom time is concerned they could not be better companions in a garden, the daylilies coming into bloom just as the iris finish. It was no surprise to me to find that they are thought of as a twosome by American growers, and, indeed, were by British hybridisers of yester-year. The greater surprise is that we've not yet met anybody else who goes in for *both* plants - apart from our neighbour that is, but more of her anon. However, I'm sure that fellow iris/hemerocallis enthusiasts do exist and possibly might be reading this Newsletter.

The TBs needed beds for themselves of course, not being happy in a mixed planting, and this we could provide by developing one end and part of one side of an old grass tennis court, the proportions of this having been wrong for the croquet we wished to play, leaving us with quite a bit to spare at the ends plus a large gently sloping bank running all along one side that I hated mowing. But since this article is about beardless irises, I'll hasten to add that at the other end we planted the sibiricas, spurias and ensatas. The latter I'd been observing at Wisley and since we share the same soil conditions, more or less, and certainly the same climate, I saw no reason why we shouldn't grow them here. To provide the moisture they needed (I didn't want to grow them solely in pots standing in trays of water) I provided 'bogettes' although I have to add that a couple that were put in the normal ground when the supply of bags (or energy!) ran out don't seem to be faring any the worse for it. Being on sandy soil they were planted in composted turves enriched with rotted manure. The whole area devoted to ensatas, spurias and sibiricas is now irrigated with leaky hose under a mulch and this is topped up by supplementary waterings to the ensatas. Although I have read about the need to use soft water for the ensatas, and we are distinctly hard, I once again thought of Wisley. They have the same water as we do here apart from the fact that they can draw directly from the river when they need to (also hard). I asked what they gave to the ensatas, "Just ordinary water," they told me, via leaky hose, so that is what mine get. But here I should add that most - not all - of the ensatas are new plantings last year. I really have no idea how they will have come through the bad winter as only the first shoots are showing on a few now, in late March. (Is Wisley on an acid sand? Ed) What I have discovered both with ensatas and also TBs is that new plants seem to get away better in pots (stood in water in the case of the ensatas) rather than being put straight into the ground. This was something that I didn't discover until most had been planted in the open ground as advised. So in future I will always pot up my newly acquired plants and plant them out in the early spring - exactly as I now do with my bearded irises. I did grow a large number of ensatas from BIS seed. What I was really after was some of Joe Ghio's PCI seed and also asked for some ensata seed as make-weight. Whilst not a single PCI has emerged I had great success with the ensatas all of which had graduated into large pots by the autumn. Being worried about a possible hard winter (justified as it turned out) I dug a pit that I lined with plastic and I stood all of the pots in this, covered with wood-chip mulch. They are already shooting well and I haven't lost a single plant from these seedlings.

On the subject of PCIs, being totally ignorant at the time of the difficulties in growing this plant (or rather, getting it started) I had almost 100% success with my first batch of about a dozen plants - a success rate I've never achieved since. In fact I'm so fed up with paying good money and losing the things that I will probably back-pedal on these. Since I've never lost any of my own divisions (including bits potted up) or of those from fellow BIS members, I can't help thinking that the very small size of the piece one received from commercial suppliers has something to do with it, even though I have to admit that all of my original batch that were so successful came from the same commercial source from which all subsequent purchases have died with predictable regularity.

Sibiricas are, perhaps, the poor relation on our iris front. This is simply because we have never been quite so aware of them - although having said that, we still feel that 'Silver Edge', which is the one we started off with, is one of the loveliest things in our garden. Watching the Wisley trials I fell in love with a number there and was ever hopeful that they might be available via the BIS when the trials were over, not many on my list were, but we did get some, which was nice. On the other hand spurias very much impressed me when I went down to Pauline Brown's (it being that time of year and they were all flowering away) so we obtained a reasonable selection of these, this being supplemented last year by purchases from Joe Ghio in the States. He had a number of things on his list that I wanted, (spurias and TBs) so I made up a small order. However, apart from the three spurias from Joe Ghio the rest of the non bearded irises are from British commercial sources. (Unlike the TBs, many of which have been direct imports.)

But this is where our neighbour makes her reappearance. Although a member of the BIS she is not quite as committed to either the irises or the daylilies as my wife and I have become, but she nonetheless shares our enthusiasm for them and we often import various things jointly. She decided that she would like a range of spurias that were a bit different so she gave Joe Ghio a free hand to make a selection for her. At the same time she stuck her neck out and asked him to do the same thing for Louisianas. Now neither of us knows much about Louisianas and I, frankly, have never seen one in bloom. She decided that whilst she would do her best to look after her large quantity of new plants they were not going to be mollycoddled, so the pots were stood outside in a sheltered situation (in water) all winter. The water they stood in was solid ice for much of the time but she was delighted to find that they are all growing away like mad things. Whether she (and they) will survive the next hurdle is an unknown at the moment - so watch this space.

I should conclude by saying that our garden is one of the BIS gardens open to visits by members so should anyone be nearby - visiting Wisley maybe - please do ring (01372 842448) if you'd like to look around - remembering that the 250 irises and 150 hemerocallis are only in either their first or second year. Like most gardeners we're never happier than when showing somebody our efforts.

Derek Carver

UNUSUAL GARDEN EXPERIENCES IN MAINE IN 1996

Two happenings this past summer at our garden in Maine are so unusual that I think they are worth reporting. The first was our extremely poor success in hybridizing the siberian irises. I am writing these notes in New York and my 'stud book' containing the records of the crosses made is in Maine so I cannot now give an exact count of the number that succeeded but it was sadly small, certainly less than 10% of the number that I would normally expect. In contrast, the rate of success in crosses with the J.I.s was about as usual. The reason, I believe, is clear, during June when the siberians were in bloom, we experienced a prolonged period of almost daily rain and fog which changed to the

normal sunny days in July for the Japanese. This explanation is supported by the fact that crosses made with the repeating siberians, in bloom when the sunny weather had come, succeeded in the usual number. The failure of my siberian crosses is, of course, sadly disappointing to me but not surprising. It is well known that when pollen has to be kept for a day or two, it is essential to keep it dry.

The other unusual occurrence this last season was a phenomenal second period of bloom in my JI 'Blueberry Rimmed', which happened in October! This was surprising not only because it had never before bloomed a second time in our garden, but also because its remontancy followed the pattern of the **rebloom** of the bearded irises and not that of the **repeat** bloom of the siberians and Japanese. Back in the 1970's when I first became aware of remontancy in siberian irises and began to introduce some with that valuable trait, I referred to them as 'rebloomers', which is the term used for remontant bearded. This led to unfortunate confusion. People who received them expected them to rebloom in the late summer or fall as the TB remontants do, but in siberians and JIs the second bloom occurs only one to several weeks after the first period. My friends to whom I had sent these plants did not recognize their early second bloom and waited in vain for a return to bloom in the fall. Bee Warburton and I thought about the problem and proposed the terms *repeat bloom* and *repeaters* for the siberian and Japanese irises to emphasize the very different timing of their second bloom period from that of the TBs. (McEwen, C. A choice of terms for remontancy in siberian and Japanese irises. *The Siberian Iris* 5(7):8-9, 1983). The word 'repeat' had been used in 1967 by Marjorie Brummit in naming her excellent remontant siberian 'Violet Repeat'.

Returning to this last year's experience with 'Blueberry Rimmed', an additional interesting feature was that its second bloom was much better than the first. Normally, it has one branch and three buds. At rebloom last October, the stalk was 3" taller than ever before and was sturdier with two excellent branches and six buds, two at each branch as well as at the terminal. This is characteristic of many repeating siberians which I refer to as 'preferential repeaters'. *

Experience with repeat bloom has clearly indicated that the trait is genetically controlled. Without genes for the trait, repeat bloom cannot, I believe, occur, no matter how well the plant is grown. On the other hand, even a siberian iris with such genes may not repeat unless growing well. This last year's experience with 'Blueberry Rimmed' shows that it has this genetic capacity. The weather last June was a disaster to me as a hybridizer, but the plants loved the rain and wetness, and grew magnificently. Perhaps conditions last spring provided what was needed to make 'Blueberry Rimmed's potential for rebloom a reality.

This episode of rebloom in a JI has been a new experience for me. Several others such as 'Exuberant Chantey', 'Eternal Feminine', 'Ol'Man River' and especially 'Southern Son', still show bloom in late August and September, but that is repeat bloom that started only a week or so after the end of their first bloom period. I have never before noted rebloom of the bearded iris type occurring two or three months after first bloom. If any reader of this article knows of a Japanese (or siberian) iris that can rebloom in the fall, do please tell me.

Dr. Currier McEwen

*Footnote from Jennifer Hewitt:

Preferential repeaters give a better display in their second bloom period which happens soon after their first, with only 3-4 weeks interval. Usually stems are taller and (better) branched and there are more of them. Two that are usually reliable over here are 'Exuberant Encore' and 'Welcome Return', both tets. 'Ever Again' is mentioned also by Currier in his book, but as yet it has not done so for me.

A QUERY REGARDING THE PLANTING OF NEWLY ACQUIRED PCIs

Elsewhere in this *Newsletter* I have made mention about my thinking of abandoning any further commercially supplied PCIs due to the inevitable losses I seem to encounter. Since I wrote that I received the catalogue from Joe Ghio's Bay View Gardens in Santa Cruz. On the subject of growing Pacificas (and, after all, he should know a thing or two,) he writes: 'Upon receipt soak in a bucket of water for about 24 hours. If new white roots are not showing leave the rhizomes in water until new roots begin appearing. They should appear in 7-10 days. Plant immediately. Treatment with 'Subdue' has proved effective. Dip for 5 minutes in a mixture of 1/4 tsp. of 'Subdue' to 4 gallons of water. Drenching the bed prior to planting and also watering with the same mixture every 2-4 weeks has also proven beneficial.' I would be interested to hear if a fellow member has experience of any of this- and also what we might know 'Subdue' as, assuming it finds favour in the EC.

Derek Carver (Tel: 01372 842448/ Fax: 843497.)

An Adaptation of: MORE ON EXTENDING THE BLOOM SEASON

Our late-blooming lines started in 1975 with open pollinated seed from a clone we call Abell 1, believed to be Thornton Abell's 66-44-30. Abell 1 is quite early, with an average bloom date of March 16th during the 15 years we have grown it. From those seedlings we selected XPIC which had, over three years, an average bloom date of April 7th. In 1978 we crossed XPIC by Joe Ghio's 'Soquel Cove' which is quite late, having an average bloom date of April 11th during the 20 years we have grown it. This cross was made for a different purpose, but 'Soquel Cove' was obviously the source of our late genes. 'Soquel Cove', as with 'Del Rey' and 'Mayor', probably inherited its late maturation from the *I. munzii* pollen Ghio got from Richard Richards, and which is in the parentage of all three. From that cross we selected XP3L -which our records show bloomed as late as any clone we have ever grown, (average bloom date April 21st.) but in 1981 we were not interested in its maturation and discarded it after crossing it to Luihn 10 because both had very blue flowers. Luihn 10 has an average bloom date of March 20th over 7 years. That cross gave us XP50B, which inherited the lateness of XP3L, and which was the first clone we recognised for its maturation value alone. Over 14 years, its average bloom date has been April 21st. As stated in the last *'Almanac'*, XP50B, whilst its bloom date is late, has only 1 or 2 flowers per stem. This flower count and lack of branching, although typical of most species and hybrids, results in a short bloom period, thus only adding maybe 10 or 15 days to the bloom season. Over 15 years, 'Del Rey' first blooms -on average- on April 16th and has only 1 or 2 flowers and a short bloom period, but in 1989 we crossed the two, hoping to combine the genes of the two lates and get something even later. From this cross we selected XP251A which flowers at about the same time as XP50B (average first bloom date over 5 years April 19th.) and has a slightly improved flower, although it still only has 2 flowers per stalk. That same year we also crossed 'Sierra Del' to XP50B, (average first bloom date March 20th over 13 years.) hoping to combine its branching and long bloom season with late maturation. Selections from this cross- .g. XP252A- were late enough, but none were branched. Then, in 1993, Duane

Meek's Late Douglasiana bloomed in our garden and proved to be the first clone we had grown which was as late as XP50B, its average first bloom date over 4 years being April 21st. Furthermore, it was branched. Crosses made that year were unsuccessful, but in 1994 we obtained seed from Late Doug x XP251A, which has had an average first bloom date of April 19th over 5 years, which yielded XP324A-J, and Late Doug x XP252A, which has had an average first bloom date of April 17th over 5 years, and which yielded XP326A. These selected progeny have proved to be the best lines with which to extend the bloom season since XP325A through to J had their average first bloom on April 26th, as was XP326A's average first year bloom date. As stated in the spring 1996 'Almanac', their flower is not up to present day standards, but they remained in bloom through July 5th, 45 days after the last flower on the named Pacificas faded. 'Late Doug' was just as good for duration of bloom, but the quality of it is not as good, especially the petal width and substance. Additional crosses were made, but not with any of the better, named Pacificas. Unfortunately, by the time we recognised the qualities of the new late crosses, every flower on the named varieties was gone.

While it appears that the late genes in my original selections came from *I. munzii*, not all *munzii* clones are late. 'Sierra Sapphire', a selected clone of *I. munzii*, averaged a first bloom date of April 5th in the 7 years in which we grew it, just about mid-season. My notes show four other clones with an average first bloom date later than April 10th; 'Mayor', April 13th over 18 years; XP270C, April 15th over 2 years; 'Gingerbread House', April 16th over 5 years, and XP264C, April 19th over 2 years.

Every 5 days we note each clone that has started to bloom during that period. This is the data used in the above discussion of bloom dates. For the last 15 years, every 5 days we have also counted all the fully opened blossoms in the garden. This is the data we use when we tell people that the peak bloom date should be around April 15th, and appears in the 'Past' column in the table. As has been done with each column, the actual number for each day has been multiplied by a factor which will make the count equal 500 on the day of maximum bloom, making it easier to compare years. The actual average figure for that date is 484.3, and the maximum was 875 in 1989. The '1996' column contains the data for that year, -excluding the lates- corrected to 500 maximum, when the actual maximum was 594. The column labelled '1996 Lates' gives the data collected from the 15 late clones, including XP50B, XP251A, XP252A, nine selections from XP325, one from XP326, and one each of 'Late Doug', and one clump of *I. purdyi* which contributed a total of six blossoms to the count. The actual maximum count was 49. This is not bad for 15 clones, 10 of which were only one year old, when you consider that the data for the rest of 1996 came from 203 clones plus all the hybrid material in the garden. The last column combines the previous two and shows what a PCI season we could have enjoyed if we had planted approximately equal numbers of early, mid and late clones.

FLOWERS OPEN ON GIVEN DATE

Dates	Past	1996	1996 Lates	1996 Total
January	3	0		0
Feb. 1-5	5	1		1
Feb. 16-29	11	2		2
March 1-5	17	6		6
March 6-10	26	12		12
March 11-15	40	39		39
March 16-20	85	124		124
March 21-25	158	170		170
March 26-31	278	305		305
April 1-5	400	483		483
April 6-10	479	500		500
April 11-15	500	468		468
April 16-20	443	443		443
April 21-25	336	312		312
April 26-30	224	98	31	129
May 1-5	122	38	122	160
May 6-10	76	15	276	291
May 11-15	48	3	480	482
May 16-20	10		500	500
May 21-25	5		429	429
May 26-31			459	459
June 1-5			245	245
June 6-10			245	245
June 11-15			122	122
June 16-20			92	92
June 21-25			82	82
June 26-30			31	31
July 1-5			6	6
July 6-10			1	1

An Adaptation of: ORIGIN OF 'LATE DOUG'

In our original article on the new late maturing Pacificas in the last issue, we surmised that the *I. douglasiana* found by Duane Meek on a road-bank near Sandy, Oregon, was possibly planted there by the late Walter Marx. A letter received from Willard E. Hoffman of Oregon City puts a new light on this topic:

"This *Iris douglasiana* you mention seeing on the roadsides near Sandy, Oregon, is one of many small and scattered populations occurring on roadsides throughout the Willamette valley and the Coast range north of the native range of the plant. In the 1950's and '60's, the Oregon State Highway Department landscape crew pioneered and developed hydro-seeding and mulching of newly constructed slopes. They used hay from highway rights of way containing flower seed heads. In addition, they collected seed of desirable plants, including *I. douglasiana* to mix with the grass seed. The Mount Hood Highway, near Sandy, underwent considerable reconstruction and widening during those years, and I think the plants in question were probably introduced in connection with this work."

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AWARD FOR DR. TSUTOMU YABUYA

In 1996 the officers and directors of the Society for Japanese Irises selected Dr. Tsutomu Yabuya to receive the Society's highest award for outstanding contributions to the advancement of Japanese irises. This is the award of Honorary Life Membership for his extensive research into various characteristics of *Iris ensata*, and for twice travelling to the US to present his study results to the Society.

Past winners of this award have been Lee Walsh and Adolph Vogt, now deceased, Dr. Currier McEwen, Florence Stout, Virginia Burton, George C. Bush, Ben Hager, Lorena Reid, Carol Warner, and Clarence Mahan. Dr. Yabuya is the first overseas winner and his many friends in the US and Japan extend to him sincere congratulations.

An adaptation of Clarence Mahan's article in 'The Review' Vol 33 no.2. Fall'96

SUMMARIES OF RESEARCH PAPERS RECEIVED FROM DR. EL-EMARY

Group 2: Trisomic and triploid irises in the breeding of *I. ensata* cultivars.

In 1963 K. Tomino did some studies on the 'Ise' line of Japanese irises and discovered that a number of the cultivars had chromosome counts of $2n=25$ and that the flower shape was attractive and commercially popular. In 1989 and 1992 Dr. T. Yabuya and colleagues suggested that these might be trisomic in that some of the chromosomes were present in threes instead of twos. They settled down to some serious breeding to see if this could be done deliberately. The plants used were 'Shishinden', a diploid ($2n=24$), and 'Raspberry Rimmed', a tetraploid ($2n=47$). This cross gave rise to triploid plants T-1 ($2n=36$), T-2 ($2n=36$), and T-3 ($2n=35$) which were duly back-crossed. Seedlings were compared with the parent plants for various characteristics. 'Raspberry Ripples' x 'Shishinden' gave rather more seeds than the reverse cross. The triploids tended to have falls intermediate in size between the parents and to flower later in the season. Surprisingly the pollen fertility of the triploids was high while the chromosome counts were extremely variable. The authors feel that when basic trisomics are produced in this way then *I. ensata* will be one of the best genetically known plants and it would be sensible to use this information to produce this type of plant, but that breeding in this field needs considerable knowledge of these characteristics to be really successful.

Ref: Production of Triploid and Trisomic Plants in Japanese garden iris, *I. ensata* Thunb. T. Yabuya, T. Sushida & T. Adachi. *Herbertia* 50, 1994/1995.

VARIATION IN THE NUCLEOLAR ORGANISING REGIONS IN JAPANESE GARDEN IRIS AND ITS WILD FORMS. (*I. ENSATA* THUNB.)

This work partly arose from the previous investigations because there had been suggestions that the trisomic plants which were popular with breeders and gardeners in Japan could have resulted from changes in one part of one particular chromosome. Eleven named cultivars and two wild forms of *I. ensata* were used and root tips were processed so that the chromosomes could be stained with a silver compound. The regions the authors wanted to study took up the silver satisfactorily and light and dark bands were seen on the chromosomes. In general there were four bands to each chromosome. One wild form, a dwarf, was found to have only three bands which suggested that the dwarfing might be due to the loss of that particular region. One cultivar, 'Shakyo' managed to have two bands on one region while 'Sinten-issshoken' and 'Kacho' had five and six respectively instead of the average four. It appears from the chromosome studies that there has been a good deal of movement in the genetic material of these irises over time and inter-breeding. This has not been proved by this work which really only shows that silver staining for this specific use works as well in for *I. ensata* as it does for *Allium* sp. and that further research in this field would be valuable and interesting.

Ref: Variation in the nucleolar organising regions in Japanese Garden Iris and its wild forms (*I. ensata* Thunb.) T. Yabuya, S. Kihara, H. Yoshino and A. Ohba, 1995. *Cytologia* 60: 383-387

Anne Blanco White

LAGGARDLY LOUISIANAS

I've been growing Louisianas here off and on for twenty years- more off than on. It started with Bob Raabe kindly sending me some seed from Australia in the '70's. Twelve plants germinated from about fifty seeds (I gather that's about par for LA hybrids) and I went into the 80's with one left. Don't misunderstand me- most of the failure was my own fault. The one remaining is a nice dark purple- very healthy- which has flowered all of three times since! If you have access to old BIS Yearbooks, Elaine Hulbert on page 66 in the 1984 edition and Bert Bailey on page 80 along with Sidney Linnegar on page 82 in the 1989 issue are well worth a read.

Basically, they seem to be pretty tough and grow well (although they can be cut back badly by frost), but are untidy, with the main problem being to get them to flower at all well in this country. I rate them about five times as difficult as spurias in that respect, in my experience. I haven't grown or seen any of the really up to date hybrids so mine is of necessity a rather limited viewpoint. Having said that,

I'm totally hooked and got some more from Bert two years ago (some of his, raised from seed). I had one stem of gorgeous flower last year, and by the looks of it, will have nothing again this year. I've tried them in water, large pots (no go because they out-grow them too quickly) and also in a wet area (artificial) and there doesn't seem to be much difference in the performance. By now, I'd expect that there would be some more tolerant hybrids emerging but it's bound to take time.

A final point is that the Americans say that the rhizomes shouldn't be exposed to the sun, to prevent drying out. In my opinion it's probably better in the English climate to risk having them planted a bit on the shallow side by their standards so that they do get some warmth in the summer. One can always pile some more stuff on them temporarily in the winter.

Adrian Whittaker

CAPE IRIS GARDENS 1996

1996 was probably one of the worst years we have had for bearded irises during bloomtime. It appears that this was true over much of the US. The bloom at the convention in Sacramento was probably the best in the entire US. We were lucky. It was a different story with the beardless irises. My spurias, siberians and beardless species were great. I continue to call them the 'back-up squad'. The first daffodils got frozen but the later blooming varieties were beautiful, as were the daylilies. The season was almost two weeks late so that we had to call off our iris show. Then it rained all during the dwarf iris blooming period so that no seeds could be set. It also rained a lot during the TB season which limited the amount of seed produced, but the worst blow of all was two hail storms about one day apart that decimated the blooming TB seedlings. I had over 3,000 one year seedlings to bloom and the late blooming varieties were ok, but I'll have to wait another year for most of them. The spuria seedlings bloomed almost 100% on the one year plants but I didn't mark any. I'll do it on the two year plants.

The first generation of 28 chr. siberians crossed with *I. typhifolia* were a pleasant surprise. The blooms themselves were not spectacular, but the earliness of the bloom was most impressive- they were blooming with the SDBs!! This opens up a whole new series of Siberians. In future generations we can get Siberians to bloom at almost any time during the bearded iris season which should add much to our shows as well as to our enjoyment in the garden.

The MASS Medley at Westford, MA illustrated so many other types of irises other than TBs that more of us should grow. There are so many new colors, combinations and forms in the siberians that are just beyond description. I understand that the JI convention in St. Louis was the same. There are many new hybrids of the species that can be grown fairly easily. I was impressed with the many forms and colors of *I. versicolor* that are available. Many iris enthusiasts shy away from growing the 40 chr. siberians and their hybrids but I've found that they only need a humusy soil on the acid side with more moisture than we give the bearded and they will give you beautiful blooms that most people have never seen before.

In my own case, I was lucky enough to be sent seed by Tomas Tamberg of the 40chr. types- but not only that. He had crossed siberians with native PCIs making Cal-Sibes. He even went further and doubled the chromosomes to 80, making them tetraploids with greater size and more vigour. I sent some of the selected seedlings to the MASS Medley and one of them won the Tiffney Cup for the best species at the convention, and the Best in the Species section at St. Louis at the Region 18 Show in 1993. It is being introduced this year as 'Berlin Cape Connection', ('Starting Calsibe' x converted yellowish calisbe seedling; parentage unknown) X Unknown.) a vigorous light blue with small venation's emanating from a small yellow signal and upright stems. I'm also introducing another one from the same batch of seed. It's straw yellow with a gold signal and will set seeds. One could dream of a new group of flowers from this, so it's named 'Silent Dreams'. These two siblings are so different that Tomas thinks that a different pollen grain must have gotten involved. Good names are always a problem in registering irises. This year I am indebted to Gloria Fairhead and Joy Seckler.

Two other new introduction are 'English Cream', ('Turnipseed X???) a near white *I. pseudacorus* from BIS seed, and 'Frank Kalich', a reverse amoena that is thought to be *I. lactea*, from seed sent to me by Frank. He is now deceased and I wanted to honour him by naming an iris after him. This seed came to him from Russia and was labelled *I. songarica*. Most people who have seen it feel that it is *I. lactea*. Frank sent me several groups of seed from Russia, among them was the rare *I. demetrii*, a spuria species that I was able to use in hybridization of which 'Missouri Springs' Springs is an example. The Russian seed was made possible by Dr. Rodionenko, so I'm indebted to him as well.

There are four spurias this year. 'Missouri Autumn' ('Far Out' x 'Redwood Supreme') x Unknown) brings a bright tan glow to the garden and 'Missouri Iron Ore' ('Mary's Beau Brummel' X 'Sultan's Sash') is a darker color that stands out. (Rusty mahogany from the photo. Ed) 'Missouri Moonlight' (Sp 6-80: 'Far Out' x 'Redwood Supreme' X Unknown)) X 'Firemist') was not what I was expecting from the cross as it was an effort to find pink, but this often happens in spuria breeding. The form of this one was different and we encourage that in this group. (A broad soft yellow from the photo. Ed) I don't know what kinds of seedlings this one will produce, but it does have the possibility to give pinks if any variety does. 'Missouri Rainbows' ('Missouri Rivers' X 'Olinda') I feel will be well liked by most gardeners. It's very floriferous and is a continuation of my 'Missouri Streams' line which generally have wide falls and nice form.

Adapted from Dave Niswonger's catalogue introduction. Our thanks to him for the news.

Ed

LAEVIGATAS IN WEYMOUTH

Commercially we grow *I. laevigata* in plastic 9cm (3.5") pots filled with John Innes No.3 stood in 12" x 15" x 3 1/2" deep plastic trays, twelve to a tray. *I. laevigata* grows better with the pots stood in water rather than covered in water, especially when newly planted. In natural ponds they grow better planted in the bank so that they can crawl into the water. Obviously they will flower better over a longer period if planted in larger containers. Any good garden soil seems to suit them. We add 'Osmocote' to John Innes No.3 and divide them every year in June after they have flowered. We want multiplication of plant numbers- not flowers- although we get a considerable number anyway. Their rhizomes have never been killed by frost here, and we only half- bury the rhizomes when planting. For display in ponds we use either small, medium or large open mesh plastic crates which are obtainable at most garden centres.

Mr. Norman Bennett.

Bennett's stock the following irises, which can be bought mail-order:

I. forrestii, *I. kaempferi* (now *I. ensata*), *kaempferi variegata*, *I. laevigata alba*, *I. laevigata variegata*; *I. laevigata* and its hybrids
 Colchesteri 'Mottled Beauty' 'Regal' 'Surprise' 'Weymouth'
 'Elegant' 'Purity' 'Rose Queen' 'Snowdrift' 'Weymouth Midnight'

I. pseudacorus; *I. pseudacorus bastardii*; *I. pseudacorus variegata*. *I. sibirica* hybrids; 'Emperor', 'Heavenly Blue', 'Snow Queen'. *I. versicolor kermesina*. Their address is; Bennett's Water Lily & Fish Farm, Chickerell, Weymouth, Dorset, DT3 4AF. Tel 01305 785150.

Mr. Bennett has subsequently written that he has *laevigatas* coming into flower in the second week of May and that he may well be moving, so anyone wishing to tootle down there to see the display, as offered by him in the last BIS Newsletter, do get in touch with him promptly to see what the arrangements are.

SYNOPSIS OF FURTHER PAPERS SENT BY PROFESSOR DR. EL EMARY

With the extensive searches for new plant-derived compounds which may help in cures for cancer or drought resistance in various crops it stands to reason that irises haven't been neglected. Nor are the researches confined to *I. germanica* and *I. ensata*, though naturally there is a tendency to concentrate on irises which are easily grown.

A study in Scotland in 1982¹ investigated the effects of depriving *I. pseudacorus* and *I. germanica* of oxygen. The first plant is well known for being able to survive for long periods in soils which have lost their oxygen usually because of the weather conditions. So the plants were deprived of oxygen for a fortnight and it was found that there were extensive changes in a number of the chemical components of the rhizomes of *I. pseudacorus*, which affected cell membranes, while the same ones in *I. germanica* remained unchanged. The authors were unable to determine whether the changes in *I. pseudacorus* were either a general response to anoxic conditions or whether some other membranes were involved; nor whether the loss process is a serious response to anoxia or is the result of some other process.

A further study in France² on wounding and dehydration, again using *I. germanica* and *I. pseudacorus*, concentrated on those chemicals which might be directly involved in helping the plants to survive such treatment. Drying out macerated rhizome material of *I. germanica* was found to result in a number of chemical changes which did not occur in similarly treated *I. pseudacorus*. It was presumed that the changes in one iris, but not in the other were related to their natural habitats and that those in *I. germanica* helped it to survive drought conditions.

Back in Scotland³ again, an extremely closely argued paper sets out an investigation into radicals formed in the rhizomes of *I. germanica*.

Several plants, including this iris were used. The two irises were grown under special conditions for a period and then cleaned up again. Part of each plant was then transferred to an oxygen free environment in the dark for a week. When they were brought back into the air, samples were taken at intervals over a length of time and analysed. One sequence of changes was of interest in that it gave rise to a compound - irisolone - which had been found in *I. nepalensis*, but did not occur in *I. germanica*. It also became clear that you don't necessarily find the same compounds in the rhizomes of *I. germanica* which has been treated anoxically as are present in normally grown plants.

Anne Blanco White

TONY HUBER'S BREEDING EXPERIMENTS WITH *I. VERSICOLOR* AS AT MAY 1996

We are dealing here with *I. ensata*, *I. laevigata*, *I. versicolor*, *I. virginica* and *I. sibirica*. There are variations in the chromosome counts of the plants used. Unsurprisingly, the fertility of the crosses is variable. An intriguing one is no.9 where the cross resulted in seedlings with comparable chromosome numbers and widely differing fertility. But the most interesting is the sequence of numbers 12, 13 and 14 where the breeding appears to have gone full circle. It would be very interesting indeed to see karyotypes of these crosses. *I. versicolor* has a variety 'shrevei' which I have used for convenience without the species name; the more so as it features in this way in the hybrid names. And I rather think the hyphens are going to fade out over time as they effectively have already with 'Versilae'.

Hybridising and its results:

F=fertile. HF= high fertility. LF - low fertility. VLF=very low fertility. VVL=almost sterile. St=sterile.

- 1 versicolor x shrevei (2n=72) = versi-shrevei 2n=90 F
- 2 versicolor x shrevei (2n=70) = versi-shrevei 2n=89 LF
- 3 shrevei (2n=70) x versicolor = shrevei-versi 2n=89 LF
- 4 shrevei (2n=72) x versicolor = shrevei-versi 2n=90 F
- 5 shrevei-versi (2n=90) x shrevei (2n=70) = reshrevei-versi 2n=80 F [(shrevei x versicolor) x shrevei]
- 6 versi-shrevei (2n=90) x versicolor (2n=108) = reversi-shrevei 2n=99 VLF [(versicolor x shrevei) x versicolor]
- 7 virginica (2n=72) x versicolor = virga-versi 2n=90 F
- 8 versicolor x virginica (2n=72) = versi-virga 2n=90 F
- 9 versicolor (2n=108) x ensata (2n=24) = versata 2n=66 VVL
 3 plants - 2n=66 F
 2 plants - 2n=132 LF
- 10 versata x versicolor = biversata 2n=120 HF [(versicolor x ensata) x versicolor]
- 11 biversata x biversata = biversata 2n=120 HF
- 12 biversata x versicolor = reversicolor (1) 2n=114 HF
- 13 reversicolor (1) x versicolor = reversicolor (2) 2n=110-1 LF
- 14 reversicolor (2) x versicolor = versicolor 2n=108 F

15	biversata x shrevei (2n=72) = biver-shrevei 2n=96 F	[(versicolor x ensata) x versicolor] x shrevei
16	shrevei-versi x biversata = shrevei-biver 2n=105 F	(shrevei x versicolor) x [(versicolor x ensata) x versicolor]
17	biversata x versata = reversata 2n=126 LF	[(versicolor x ensata) x versicolor] x (versicolor x ensata)
18	biversata x ensata (2n=24) = rebiversata 2n=72 St	(versicolor x ensata) x ensata (2n=24)
19	biversata x ensata (2n=48) = rebiversata (2) 2n=84 St	(versicolor x ensata) x ensata(2n=48)
20	biversata x sibirica (2n=28) = biversib 2n=88 F?	(versicolor x ensata) x sibirica(2n=28)
21	versata x ensata = reensata 2n=78 St	(versicolor x ensata) x ensata
22	versicolor x laevigata = versi-laev 2n=70 VLF	
23	versilaev x versicolor = biversilaev 2n=? ?	(versicolor x laevigata) x versicolor.

St = sterile; vvl = almost sterile; VLF = very low fertility; LF = low fertility; F = fertile.

Parentage of hybrid plants:

biversi-laev = versilaev x versicolor.
biversib = biversata x sibirica(2n=28)
biversata = (versicolor x ensata) x versicolor
biver-shrevei = biversata x virginica var. shrevei
reshrevei-versi = (virginica var. shrevei x versicolor) x virginica var. shrevei
rebiversata 1 = biversata x ensata(2n=24)
rebiversata 2 = biversata x ensata(2n=48)
reensata = versata x ensata
reversata = biversata x versata
reversi-shrevei = (versicolor x virginica var. shrevei) x versicolor
reversicolor 1 = biversata x versicolor
reversicolor 2 = reversicolor1 x versicolor
shrevei-biver = shrevei-versi x biversata
shrevei-versi = virginica var. shrevei x versicolor
versata = versicolor x ensata
versi-laev = versicolor x laevigata
versi-shrevei = versicolor x virginica var. shrevei
versi-virga = versicolor x virginica var. virginica
virga-versi = virginica var. virginica x versicolor

Anne Blanco White

DIVING INTO WATER IRIS

Water iris- there seems to be a recent upsurge of interest in them, though I guess destiny called me way back when. I remember digging my first one up when I was about nine or ten. It was brown-purple with small flowers that had a certain charm. I lived near the Mississippi River in Minnesota and I yanked it out of the bank, brought it home, and planted it in a corner of my father's tall bearded bed. He told me it would never live or bloom but it did for the four years we remained in Minnesota. After moving to Indiana I forgot all about that little iris I left behind. Sixteen years later after college and early jobs, I settled down to growing water plants for a living. With that my interest in water iris was reawakened after a long dormancy. The first iris that caught my attention was wild *I. virginica*. Weekend forays over the past six years have yielded many parents for breeding and two registered selections. 'Pond Crown Point' (r.1995), named for the town where it was found, has deep Cub Scout blue flowers with strong yellow signals. 'Pond Lilac Dream' (r.1995) was an isolated plant in a drainage ditch. Both have larger flowers than usual and fuller petals. My first breeding project was towards purple foliage. I worked for three years crossing *I. virginica* selections to get deeper purple foliage further up the leaf. Then my father found a purple 'rush' in a dredged detention pond that turned out to be purple leafed *I. virginica* with strongly fragrant flowers. Since 1989 I have tried to obtain every possible water iris, though I have excluded modern Louisiana's because they have had so much work on them already and I don't care for the plant (don't send me hate mail!). I have also shied away from siberians and ensatas because they aren't true water irises. Instead I concentrated on *I. pseudacorus*, *virginica*, *versicolor*, *laevigata* and *fulva*. In 1993 I went to the Siberian Convention on Michigan. There I met enthusiasts who already had collections of water iris. I also learned about SIGNA and my collection of water irises began to grow. Recently, I've started to add ensatas and siberians to my gene pool. In 1991 I heard of Tony Huber's work on interspecies hybrids and that really got my attention. I was excited. I started crossing everything, with no clue as to chromosome counts, compatibility or probabilities. Ignorance was bliss. I started with the following crosses: *virginica* x *versicolor*, *virginica* x *ensata*, *virginica* x *pseudacorus*, and *virginica* x *laevigata*. To my surprise they all took - some better than others. Some of the reciprocals took, others did not. I saw bloom for the first time from the *virginica* x *versicolor* and *virginica* x *laevigata* in the spring of 1995 and I learned many things from these crosses. *I. versicolor* controlled flower size and *virginica* controlled branching and color. In *virginica* x *laevigata*, *virginica* added vigor, size and branching; while *laevigata* controlled flower shape and smoothed out the color. For the most part color seemed to come from *virginica*, but how it was expressed came from *laevigata*. These observations changed to some extent depending on which species was the pod parent and which was the pollen parent. For a neophyte this was like learning the secret of the universe. 1994 turned out to be the year of the *pseudacorus*. I crossed everything with it and already the seedlings from these crosses have yielded valuable information. *Pseudacorus* as a pod parent controls the shape of the plant so you can pick them out of a row of seedlings. They look like giant Belamcandas. I also found *I. pseudacorus* 'Ecrui', 'Alba' and 'Beuron' (Berlin 1979) to be good pollinators and formed lots of seeds. In addition, I was surprised that year by the success of a *fulva* x *versicolor* cross. In

1995 I made over 400 crosses with over 80% take. I am also excited about some crosses with *I. virginica* 'Dottie's Double' (Warrell 1983). It seems easy to cross with. Each year is exciting and I look forward to the 1996 bloom. I also hope to make my first remontan crosses with, among other things, a pseudacorus that reblooms in fall.

I would like to thank those people who encouraged me with plants, time and suggestions. First, Tony Huber who has been a great help and whom I finally got to meet last spring at the Species Symposium in St. Louis. Jim Waddick, Melody Wilhoit, Jan Sacks and Marty Schafer, John White, Richard Kiyomoto, Eberhard Schuster, and many many more have helped build my collection to over 160 cultivars of water iris. Thank you, all.

Greg Speichert. SIGNA. Fall 1996

Greg and his family are running a nursery over there, Crystal Palace Perennials, and he's kindly sent me a catalogue.

Ed

HOW DO THESE THINGS HAPPEN?

For several years we grew the plant passed along by Mr. Darby from his garden as his supposed seedling of a siberian crossed with a Louisiana iris. Another odd one, this from Mr. Patton, was thought to have arisen from *I. chrysographes* X *I. pseudacorus* and was registered so. Both these caused a considerable buzz, both garden-wise and robin-wise, but neither of them was correctly identified. Now we have another one to puzzle out. How do these things happen? The late Sarah Tiffney scraped pollen from 'Holden Clough' (Mr. Patton's find, above) and was confident she had obtained self-pollinated seed. She succeeded in raising two similar purple-flowered seedlings; the more vigorous of the pair was registered as 'Holden's Child'. Several irisarians who have subsequently flowered this have agreed that what they have under that label is no more than a seedling *versicolor*. How can such a thing come about? In Mr. Patton's case, he was advised by the fellow who propagated this brown flowered water iris in the Holden Clough Nursery that the original had appeared in a batch of plants raised from seed harvested on the nursery from *I. chrysographes*. From its obvious resemblance to *I. pseudacorus*, Patton tacitly named that as the putative pollen parent; though it was not being grown on the nursery, the species inhabits wetlands in the general area. In hindsight -after much reflection- almost everyone is agreed that this brown flower on a semi-evergreen plant must have resulted from a mating of the two European natives, *pseudacorus* with *foetidissima* - though that is a cross without precedent. *I. foetidissima* may well have grown on the nursery and, at any rate, is likewise indigenous to the region. Just how such a seed had providentially been growing in that particular nursery block really does beat all the odds! In Mr. Darby's case, a plant was given (out of flower) to a friend who had coveted it in blossom. As we do not have a description of that, we can only assume that the wrong subject was dug. What Mr. Coe later registered to honor Gerald Darby memory is clearly a hybrid of the two American Great Blue Flags, correctly called *Iris* X *robusta* 'Gerald Darby' ('67). Mrs. Tiffney was a long time connoisseur and breeder of apogon irises; thus it seems most unlikely she had mistaken purple *versicolor* for a descendant of the brown, semi-evergreen 'Holden Clough'; but somewhere along the way, somebody somehow apparently made an unintended substitution. Just how these annoyances happen when our backs are turned is never easily, nor certainly, explained.

B. LeRoy Davidson. SIGNA, Fall 1996

THE HYBRID CULTIVARS OF BEARDLESS IRISES

Hybridisation has taken off on a staggering scale over the last decade and new and gorgeous plants are the result. But it seems to me that we could use a glossary of the 'descriptions' which the growers are using especially for new members. By and large we all recognise 'cal-sib' as applying to a plant resulting from a cross between a Pacific Coast iris and a 40-chromosome siberica, but how many of us are still brought up short by a 'sino-sib'? Perhaps you, too, would like to suggest a descriptive term which should be included -on a postcard and you need not include your name and address- to Anne Blanco White. For a start, what about inter- and intra-specific crosses which are usually deplorably misapplied? Then we'll publish it in the NL and you can fill in any gaps.

Anne Blanco White

TWO PUZZLING GROUPS OF SIBERIAN IRISES: BIOLOGY AND PROPOSED COMMON NAMES

Summary: The attributes of 28 and 40 chromosome Siberian irises are considered, including a discussion of the nature of the difference in chromosome number and its consequences. As common names for the 28 and 40 chromosome groups respectively, 'robust' and 'gracile' Siberians are suggested. The garden qualities of Siberian irises are being increasingly recognised as hybridizers come up with marked improvements. The increasing popularity is well illustrated by two awards at the 1994 AIS Convention in Oregon - TB capital of the world. Lorena Reid's 1992 Sino-Siberian 'Dotted Line' was second runner up for the President's Cup, while Robert Hollingworth's 1994 28 chromosome tetraploid Siberian 'Strawberry Fair' won the Franklin Cook Memorial Cup as the finest iris hybridised outside the region. As these worthy plants become more widely used, a problem of nomenclature becomes an increasing nuisance. There are two main groups of Siberians, represented well by 'Strawberry Fair' and 'Dotted Line', and when we wish to refer to these groups there are no satisfactory common names. I began thinking about this two years ago when Dr. Currier McEwen inquired as to suggestions for common names in conjunction with the preparation of his book on Siberians, which has since matured into a marvellous book that is in press by Timber Press. (Now in print! Available from Neville Watkins, Hon. Literature Secretary, BIS. Ed) At the time of Dr. McEwen's inquiry neither I nor any of his other consultants came up with satisfactory names for the groups. New names are proposed here, descriptive ones tested by observation of hundreds of beautifully grown Siberian irises of each group at the Oregon Convention, as well as in Laurie's Garden in Oregon.

The Two Groups- A scientific classification of these irises is summarised in the Table. Lenz (1976) has split the series Sibiricae into two groups, Sibiricae with nominally 28 chromosomes in most cells of the plant and Chrysographes with nominally 40 chromosomes.

Most of the modern Siberian cultivars are hybrids containing a mixture of *I. sanguinea* and *I. sibirica*, each of which has a diploid set of 28 chromosomes. The *I. typhifolia* that Dr. James Waddick recently brought back from China is a similar iris; in hybridizers' gardens its genes are currently being introduced into the *sanguinea/sibirica* gene pool. *I. typhifolia* is very fertile with this group, and is thus presumed to have 28 chromosomes. There are also many tetraploids derived from subseries Sibiricae that are now in commerce. These are presumed to have 56 chromosomes, although I do not believe that the chromosomes of any tetraploid garden iris have actually been examined or counted.

Using the current names, one refers to these irises as 'tetraploid 28 chromosome Siberians'. The *Chrysographes* group of Siberian irises all have about 40 chromosomes. They are readily inter-fertile within the group and cross-pollinate in gardens. Some of the species, especially *I. chrysographes* and *I. forrestii*, tend to be short-lived plants in many gardens, and are frequently replaced by new seedlings. Because of their promiscuous cross-fertilization and limited longevity, there are probably few pure representatives of the 40 chromosome species available outside of their wild habitats.

It may surprise some readers to find three species listed as uncertain in the Table. *I. bulleyana* has long been recognised as a questionable species since when pollinated it produces a variety of forms (Dykes 1924). Mathews (1981) suggests that it may be a natural hybrid of *I. forrestii* and *I. chrysographes*. These two putative parents and *I. bulleyana* do overlap their ranges in China. The finding of *I. bulleyana* growing wild in several places in China (Waddick & Zhao, 1992) does not settle the question. Species of the related series *Californicae* interbred frequently in nature (Lenz 1959), and it is likely that there are natural hybrids of the *Chrysographes* sub-series in the wild. It remains unclear whether *I. bulleyana* is a bona fide species or a naturally occurring hybrid. Uncertainty about this species is also discussed in Dr. McEwen's book. Another of the species, *I. dykesii*, was found in Dykes' garden after his death and has never been found in the wild; it is probably a garden hybrid that was never represented by a species in nature. The last uncertain species, *I. phragmitetorum*, is known only as a dried herbarium specimen. The swamp where it was collected is now Kunming City in China; one hopes it will be found again but it may be extinct (Waddick & Zhao 1992). Although often listed among the 40 chromosome species, some favour placing *I. phragmitetorum* among those with 28 chromosomes. (Davidson 1974). We may never know unless it is rediscovered.

In general the *Chrysographes* are species of wet meadows that send down deep roots; they require constant moisture and prefer cool summers. In the US they do not grow well in the southern states, and their success in gardens is more restricted than that of 28 chr. Siberians. Where the 40 chr. subseries proper, as they do so well in Oregon and Washington, they are strikingly beautiful and distinctive plants. Lovely cultivars such as 'Dotted Line' have been introduced, some that co-bloom with the 28chr. hybrids and others that bloom later, extending the season. Some are tall; in Reid's garden her handsome 1989 'Enbec Decaych' ('NBDH'; a newer broader delavayi hybrid) grows over 5' tall (=1.5m). Even orange 40chr. cvs are coming, led by Reid's 1994 'Anticipating Orange', a color break potentially as exciting as was McEwen's 1977 yellow amoena 'Butter and Sugar' among the 28 chr. Siberians. In addition, the 40chr. Siberians are crossed to the distinctive series *Californicae*, which also happen to have 40 chromosomes, to produce lovely Cal-Sibes with their intricate patterns. Although basically sterile, these are garden-worthy plants which combine the traits of both parents and do well over a broader climate range than either the *Californicae* or the *Chrysographes*. Hybrids have been formed between the subseries *Sibiricae* and *Chrysographes*. Since the chromosome numbers are so different, it is not surprising that such hybrids are difficult to achieve and most appear to be sterile. The most famous and best authenticated of these hybrids, bred by Dr. William McGarvey, is 'Foretell' (1970, *I. forrestii* x 'Super Ego'). This hybrid does well in gardens where 28 chr. Siberians grow. It is not completely sterile. Such inter-subseries hybrids are discussed later.

Current Common Names- The subseries names *Sibiricae* and *Chrysographes* are correct taxonomic designations of the plants, but scarcely lend themselves to common names. *Sibiricae* is a subset of all Siberians and *Chrysographes*, which means 'golden writing', based on the gold line down the centre of the fall of the species, does not provide a euphonious, easily remembered common name. A Committee of the Society of Siberian Irises was formed in 1972 to consider possible names (Ad hoc Committee, 1973; McEwen, 1974 & 1977). One set of common names, often used, is 'garden Siberians' for the 28 chr. series and 'Sino-Siberians' for the *Chrysographes*. Although cultivars of the series *Sibiricae* are more common in gardens than those of the *Chrysographes*, both are wonderful garden subjects where they can be grown. Most but not all of both sub-series come from China. Garden and Sino are unsatisfactory names, and the Committee recommended against their use (Ad hoc Committee 1973). They continue to be used, however, for lack of any other satisfactory names.

Another set of common names frequently used is based on the diploid chromosome numbers known for certain members of the sub-series: the 28 and 40 chromosome Siberians. After deliberation, the Committee accepted these names as convenient 'shorthand' (Ad hoc Committee 1973) and noted that 'it will be best to continue for the present to designate the two groups by their chromosome numbers' even though it was also noted that 'These terms, while accurate are awkward to use and have little significance for the average grower.' (McEwen 1974). At first a decision about a name was deferred until a taxonomic decision about the groups could be made (McEwen 1974), but after the sub-series was designated (Lenz '76) the Committee decided to accept 28 and 40 chromosome Siberians as the best way to designate the sub-series in common garden terms (McEwen 1977). I believe the names based on chromosome numbers suffer from serious defects. In many cases, the chromosome numbers are not known. Even if one presumes 28 and 40 as the usual diploid numbers for the sub-series, how does one refer to tetraploids, or inter-series hybrids -does one imagine a tetraploid garden Siberian has 56 chromosomes or that 'Foretell' has 34? Finally, the names are 'technical' and certainly do not suggest lovely garden subjects, any more than most members of our specie would enjoy being called the 46 chromosome apes, even though that is an accurate description. Twenty years after these awkward names were accepted, many of us who work with the irises are still using other names or seeking new ones. The current names of garden or 28 chromosome Siberians and Sino-siberians or 40 chromosome Siberians are clearly unsatisfactory. We need useful common names. The two sub-series are an important horticultural distinction. Although members of the two sub-series look superficially similar, the anticipated success of crosses and conditions for successful cultivation vary, as do the places in the world where each sub-series can be grown well. We need comfortable names to refer to the distinct groups that have different cultural requirements and genetic compatibilities. With the current non-names, confusion is growing. In the registrations, Siberians are listed with various designations including SIB, SIB (dip.), SIB (28 chrom.), SIB (28 chrom.dip.), SIB (tet.), SIB (28 chrom.tet.), SIB (56 chrom.), SIB (56 chrom.tet.), SINO-SIB, SIB (40 chrom.), and SIB (40 chrom.diploid). Although the subseries and ploidy of most of these irises can be deduced in context, the confusion will only get worse as more inter-series and other hybrids are introduced. Imagine a description of a SIB ((28 chrom x 40 chrom) tet x 80 chrom tet.).

A more serious problem arises in the evaluation of these irises for awards. In the *AIS 1994 Official Ballot* for judges, the lovely 40 chr. Siberian 'Cascade Creme' (Reid'91), registered as a Sino-Sib, is listed as a species. Although its parents are not known, it almost certainly is not the offspring of a single species of 40 chr. Siberian. It is a Siberian iris, and according to the *Handbook for Judges and Show Officials* (1985, p.B-69.) all the Siberians -the two sub-series and their hybrids- should be judged as Siberians. I heartily agree; they should

all be considered as the Siberian irises that they are. 'Cascade Creme' and the other 40 chr. hybrids are Siberian irises. Perhaps 'Cascade Creme' ended up as a 'species' because Sino-sib is not a 'proper' name. In any case, it will help to avoid such confusion if we can agree on consistent and accepted common names for the two groups. In addition, perhaps all registrations of Siberians should have the form 'SIB (qualifiers)'.

Proposed Names- The challenge to finding properly descriptive names for the two sub-series is that they are so similar. Their similarity is, in fact, great enough that one systematist, Mathew (1981) argues that the division of the series into two sub-series 'may well be correct, based on their cytology, but morphologically it is not easy to justify.' Mathew rejects the sub-series. Classification has always been subjective, but I am convinced that the marked difference in chromosome number and inter sub-series fertility indicates a major difference in their history and warrants the two sub-series. The separation is a logical distinction, and should be retained. In addition, it is an important enough distinction that we need common names to refer to the two types. Although individual cultivars of both sub-series offer exceptions to almost any generalisation, most 40 chr. Siberians show obvious differences from most 28 chr. Siberians. The Committee that searched for common names found no consistent differences in the foliage, bloomstalks or flowers. They found four specific differences between the 28 and 40 chr. types: the spathes are short on 28 chr. plants, but long on those with 40 chr.; the flanges at the base of the falls are small on 28 chr. plants, as opposed to their being long on 40 chr. plants; the tops of the seed capsules are blunt on 28 chr. plants but spiked on those with 40 chr., and the capsules are hard on 28 chr. plants but fragile on those with 40 chromosomes (McEwen 1974). None of these differences tended themselves toward a common name. While I concur with the Committee, Mathew (1981) and others that there is considerable overlap in morphology between the *Sibiricae* and the *Chrysographes* subseries, there is a clear overall distinction between the plants, easily noted in Oregon by Dr. Elaine Lai Fulton and me when many plants of each group could be studied together. The 40 chr. section tend to have narrower foliage that tends to flare out at the top in a fountain form, like ornamental grass, and looks very attractive in the garden. Although some 28 chr. types have similar grass-like foliage, more often it is wider bladed, erect and more sword-like. The bloomstalks of 40 chr. plants tend to be thinner, more 'wiry' and sinuous, while those of the 28 chr. types tend to be ticker, straighter and more vertical. Both are elegant for Ikebana but they lend themselves to different designs. Because of these features, the common name 'gracile' is suggested for the 40 chr. group and 'robust' for the 28 chr. subseries. These two words are used in the context of the definitions in Webster's Third New International Dictionary: gracile - 'gracefully slender or slight'; robust - 'strongly formed or constructed'. Neither term implies any weakness or coarseness on the part of the plant. Both imply plants that can be attractive and vigorous in their proper environments. There is precedent for the use of these terms in a completely different comparison in relation to the fossil history of humans. There are two kinds of fossil australopithecines, called gracile and robust, found in Africa, beginning about 4 million years ago and extending to nearly one million years ago. Most palaeontologists believe it likely that we are descended from the gracile line. Yet our gracile lineage encompasses robust giants such as 350lb (160kg) American football players, 7' 2" (2.2m) basketball players, and my petite wife.

Robust and gracile accurately describe distinctive characteristics of many 28 and 40 chr. Siberians, respectively. Of course there are exceptions because of the overlapping phenotypes, but the terms work well as descriptors of the sub-series for many of the species and cultivars. The terms are not perfect since there are 'gracile' robust Siberians, such as 'Flight of Butterflies' and *I. typhifolia*, and 'robust' gracile types such as 'Enbee Deeaych' and *I. delavayi*. Probably no simple terms based on overall morphology can distinguish the two sub-series perfectly, since their attributes overlap, but these adjectives suggest the essence of the two groups. Since the difference is subtle, I was pleased to find that Dr. Waddick has made a similar observation. In comparing 28 and 40 chr. Siberians, he noted that the former 'will overpower and out-grow these generally smaller, somewhat more delicate species.' (Waddick & Zhao, '92). On the other hand, Lorena Reid (personal communication.) points out that under her growing conditions *I. delavayi* and its hybrids 'could hold their own even interpolated with the 28's.' Although any distinction is of necessity imperfect, simple terms based on overall morphological traits are more felicitous and informative than imaginary chromosome numbers or terms based incorrectly on garden use or country of origin. They allow sensible descriptions of tetraploids, as e.g., a tetraploid robust Siberian, or in the registrations, a SIB (robust tet.), and of hybrids, such as a SIB (gracile-robust hybrid). The suggested names are imperfect discriminators, but it seems unlikely that we can find precise terms that morphologically distinguish al 28 and 40 chr. Siberians. One appealing feature of the proposed names is that gracile and robust are sufficiently vague to accommodate the overlap of phenotypes. We are not all gracile creatures, yet gracile is our group. Nor does a name have to be perfectly accurate to be useful; after all few Siberian irises come from Siberia.

The Chromosomes- In order to understand the nature of these two groups it is important to understand the probable meaning of the difference in chromosome number. An explanation of this difference also provides an opportunity of showing how much more pleasant it is to read about these irises with the proposed common names. Although the plants and flowers of gracile and robust Siberians are different in their extremes, in many respects they are morphologically quite similar and all modern taxonomists have concurred in grouping these irises in a single series. It is likely, in fact, that they are more similar genetically than their striking difference in chromosome number might suggest. Comparative studies using modern techniques to evaluate the similarity of their DNA sequences, the arrangement of their genes, and the organization of their chromosomes are needed. In the interim it may be helpful to speculate on how these two subseries can be so similar and yet have such different chromosome counts. It is first necessary to consider what a chromosome represents. As we all know, all an organisms genetic material is contained in long strands of DNA, the goal of the Human Genome Project is to sequence the 2.9×10^9 to the base 9 pairs of DNA that make up our genetic material. In any organism the DNA strands are packed into chromosomes. Each chromosome contains a single continuous strand of DNA with one specialised region, -the centromere- and two ends, the telomeres. The genetic information that makes up the genome is packaged into a series of chromosomes. The genome of diploid robust Siberians is packaged in 14 pairs of chromosomes, or a total of 28. In the formation of germ cells or gametes, meiotic cell divisions reduce the chromosome number by half (in a diploid, from $2n$ to n ; in a tetraploid, from $4n$ to $2n$). In order for this reduction to occur, each chromosome finds its matching partner and they pair together or synapse, usually beginning at the telomeres. After synapsis each pair separates in an orderly fashion, with one member of each pair going to the opposite poles. The separation depends on the centromeres. We can imagine the two chromosomes of a pair zipping together along each other by their similarity, and then a pair of tiny hands taking hold of the centromeres and pulling one of each

pair to the opposite pole. If every centromere has a mate and everything goes well in this fancy dance of the chromosomes, a gamete ends up with one of each pair. When two gametes fuse, the diploid (or tetraploid) chromosome number is restored.

It is proposed that Siberians, both gracile and robust, as well as PCIs, share a relatively recent common ancestry. The members of the series *Californicae* somehow got across the Pacific ocean or the Bering Strait and have evolved separately from the *Sibiricae*. Sometime subsequent to this separation an ancestor of the series *Sibiricae* had an 'accident' of some kind. One can imagine possibilities, but we have no idea what really happened. Out of that accident eventually came two reproductively isolated surviving species, fertile within themselves, one with 28 and one with 40 chromosomes apiece. These became the ancestors of the robust and gracile Siberians, and have evolved separately ever since. Since PCIs and gracile Siberians still happen to have the same count, even though they are more different in other respects than the two Siberian groups, it is tempting to suggest that the ancestor of all these groups had 40 chromosomes, but that is not necessarily so. The chromosome number changed due to events that probably involved some or all of the following:- polyploidy possibly followed by loss of some 'extra' chromosomes; fusion of some chromosomes; breakage of others with exchange of genetic material (translocation); perhaps some parts even turned around (inversions). Other rearrangements may also have occurred, of which most are lethal. This view of what might have happened has two interesting consequences. First, it is likely that the two groups of Siberians still share most of their DNA sequences (genomes), but that these strands are somewhat rearranged on the $n=14$ and $n=20$ chromosomes. One might imagine genetic cutting and pasting such that in the end the same overall text is there but rearranged into different chromosomes. Consider it as being as if different paragraphs in a book with 20 chapters had been rearranged into a new one of 14 chapters -a glitch in the word processor of evolution. The overall similarity of the paragraphs explains why the robust and gracile Siberians share so many properties. Second, the rearranged chromosomes mean that in a hybrid of a gracile and a robust Siberian, viable gametes will be very rare. When the chromosomes attempt to pair, they find it difficult or impossible to find matches since the text is mixed up. When they separate, those that did not pair travel at random toward one pole or the other, producing gametes that are either missing chromosomes or that have extra ones. Some that pair probably end up with multiple centromeres, and become even more confused when it is time to take them apart. Pieces get broken and lost. Although such events have not been methodically studied in Siberians, they have been in other plants. It is easy to understand that with such an extensive rearrangement as must have occurred to produce species with $n=14$ and $n=20$ chromosomes, in a hybrid of the two subspecies very few gametes would be formed with a sufficiently complete set to be able to fuse with another gamete and form a living offspring. Other factors may influence the fertility of hybrids between gracile and robust Siberians, but the difference in chromosome number is certainly sufficient to make a horrible mess. Even in the case of the PCIs, and the gracile Siberians, which both happen to have 40 chromosomes, there undoubtedly are numerous differences in the arrangement of parts of the DNA strands on the chromosomes that make proper sorting of the chromosomes during gamete formation unlikely, and thus render Cal-Sibes virtually sterile. In this case it is not the chromosome number, but the arrangement of the parts which matters. A much studied example of such rearrangements of chromosomes is found among the great apes, and people. We have a total of 46 chromosomes, and share 99% of our DNA sequence with the 48 chromosomes of chimpanzees and gorillas (Yunis & Parish, 1982). A fusion of two chromosomes into one accounts for the reduction from 24 pairs in the great apes to 23 in humans. In spite of the overall similarity in chromosome number and DNA sequence, some of the other chromosomes show major rearrangements. These differences in *arrangement* are likely to play a significant role in causing the marked differences between people and apes (King & Wilson, 1975). It would be wonderful to have such specific information for irises.

The differences in chromosome number and arrangement make crossing the gracile and robust Siberians to the PCIs a challenge. Such initial crosses have been made for a long time, going back at least to such registered examples -all done in England- as 'Chrysobirica' (Perry, 1923, *I.chrysographes* x *I.sibirica*), 'Sibulleyana' (Wallace, r.1936, putatively *I.sibirica* x *I.bulleyana*, but never introduced), and 'Margot Holmes' (Perry, 1927, A Cal-Sibe from *I.chrysographes* x *I.douglasiana* that won the Dykes Medal in 1927). In order to verify his deductions about the relationships of species, in his pioneering work Dykes (1924) made many crosses between what we now know were gracile and robust Siberians. In general, as he and others have pointed out, the offspring of such crosses are sterile. There are however known exceptions to the general sterility of such hybrids. Tomas Tamberg has made tetraploid Cal-Sibes that have at least some fertility ('Starting Calsibe', 1983; 'Timpals', r.1993). One can imagine fertile tetraploids from gracile x robust Siberian crosses. In addition, 'Foretell' shows some fertility, at least with diploid robust Siberians. Its originator, William McGarvey (1975) reported 'three generations of progeny' from it, but none of these offspring were introduced. Currier McEwen obtained several hybrids using 'Foretell' and a robust Siberian such as 'Ruffled Velvet', but none of these have been fertile, and none have been introduced. (McEwen, pers.comm.). Lorena Reid independently made such hybrids too, and from these obtained a second generation, none of which were introduced (Reid, pers.comm.). However, the first generation hybrid from a gracile x robust cross has now been introduced, Steve Varner's 'Sweet Success' (1994), being the offspring of 'Foretell' and the robust Siberian 'Belfast'. Probably 'Foretell' or any other non-tetraploid inter-subseries hybrids that have shown even limited fertility have managed to re-sort and re-organize their chromosomes to produce at least some viable gametes, and presumably no longer have the $14+20=34$ chromosomes that were originally introduced into the hybrid. In this sense, a plant like 'Foretell' is the making of a new species of Siberian iris! It is worth pursuing the inter-subseries crosses started by those pioneers in the hope of establishing fertile lines of gracile-robust hybrids, either diploid or tetraploid. Such fertile hybrids could eventually bring us robust Siberians with features such as the totally yellow flowers, the oranges and reds and the bold signal patterns that are found in gracile types. Such hybrids could also extend the bloom season.

We have much to learn about these chromosome games, but it is clear that in the near future both gracile and robust Siberians will continue to be increasingly used in gardens, as hybrids within their subseries and probably in inter-series hybrids. We all need a sensible way to refer to the plants. It is hoped that others may find the common names proposed here pleasing and useful.

Acknowledgement: I am grateful to Currier McEwen, Lorena Reid, Sarah Tiffney and Jean Witt for their helpful suggestions.

Dr.Chandler Fulton, AIS 'Bulletin' No.300. Jan 1996. NZIS 'Bulletin' No.40 Sept.1996

I have made a few alterations to the text, in order to shorten it a tad, but hopefully only Dr. Fulton and I will notice. I've shortened Currier's piece too, but very slightly. My knowledge of chromosome counts being non-existent, and that of algebra being nearly so, I asked Jennifer for some explanations and, although extraordinarily busy, even for her, this is what she very kindly replied:

As far as I can know, no-one has actually counted the chromosomes of *I. typhifolia*, but since it has proved fully fertile both ways with a number of 28chr. hybrids (diploids), it is fairly safe to assume that it matches with *I. sibirica* and *I. sanguinea*. Nor can I recall seeing that tetraploid Siberian cvs. have ever had counts done, so it is an assumption that they have 56 chromosomes. The number comes about because the diploids have 28, i.e. $2n = 28$ (therefore $2n = 14$) and if you double that, i.e. multiply the haploid (n) x 4, you get 56. That's where the 'tetra' comes in. A diploid of the *Chrysographes* sub-series has 40 chromosomes (as do PCl's) and therefore a haploid number of 20, so a tetraploid would be 20×4 (or 40×2) = 80.

Jennifer Hewitt

CLASSIFICATION OF THE SIBERIAN IRISES

Classification	Species	Chr.No. * (2n=)
Genus <i>Iris</i>		
Subgenus <i>Linniris</i> , (apogon)		
Section <i>Linniris</i>		
Series <i>Sibiricae</i>		
Subseries <i>Sibiricae</i>	<i>I. sanguinea</i>	28
	<i>I. sibirica</i>	28
	<i>I. typhifolia</i>	?
Subseries <i>Chrysographes</i>	<i>I. chrysographes</i>	40
	<i>I. clarkei</i>	40
	<i>I. delavayi</i>	40
	<i>I. forrestii</i>	40
	<i>I. wilsonii</i>	40
Uncertain species	<i>I. bulleyana</i>	40
	<i>I. dykesii</i>	?
	<i>I. phragmitetorum</i>	?
Series <i>Californicae</i> , the Pacific Coast Irises,		40

*Chromosome numbers for diploid cells are from Randolph (1959). Although additional counts have been made for some of the species, I am unaware of any counts for species listed as "?", or for any tetraploids, inter-series or inter subseries hybrids.

Editorial note: Chandler Fulton has given me the privilege of reading his article. As Chairman of the old Ad Hoc Committee on Nomenclature of the Society for Siberian Irises which Chandler refers to, I particularly appreciate the opportunity to comment on it.

After the discovery that there were two groups of Siberian irises with different chromosome numbers, many articles regarding the two types were written in the late 1960's and 70's with different names being used by the various authors. With the purpose of establishing a standard set of names, the Society for Siberian Irises appointed an ad hoc committee to study the problem and make recommendations. Some of the Committee's observations were useful to Lee Lenz in his taxonomic division of series *Sibiricae* subseries *Chrysographes* which the Committee enthusiastically endorse. The Committee also diverted two years' effort to selecting possible terms for common garden use. In the final report in 1997, the Committee decided that, although far from ideal, names based on the chromosome numbers were the best to use. This was accepted by the SSI and hence the 28 chromosome group and the 40 chromosome group are the currently recommended names. As Chandler has pointed out, some other names are still being and terms based on chromosome numbers are now complicated by the existence of the tetraploid and inter-series hybrids with different numbers of chromosomes. Chandler's article prompts the question whether after 18 years since the 1977 report, it might be useful to reconsider the names for common garden use.

Dr. Currier McEwen, AIS Bulletin No.300, Jan 1996.

NOTES ON HYBRIDIZING WITH *I. TYPHIFOLIA*

Because *I. typhifolia* seedlings bloom so early, along with the SDBs, it's necessary to keep the pollen dry in the refrigerator, using capsules or an envelope, but if you wish to keep the pollen for a long time, store it in a dessicator and put it in the deep-freeze. It may be best to let the seedlings grow in the pot or bed where they germinate for the first year and then they will transplant easier the following year.

It appears that the greatest contribution these genes will make for Siberian development is in producing cultivars that will bloom early. With these hybrids the bloom period can really be stretched out. The first generation flowers are not as good as the present hybrids, but following generations should improve even more in flower form and color. At the present time, most first generation hybrids are blue progressing on to deeper blues and deep violets, and whites should be forthcoming in the second and third generations.

The foliage may be a problem and hybridizers should note this when selecting seedlings for further breeding. When fall approaches, some foliage wants to fall over before the frost comes.

Who knows what might come of this new source of genetic material when the recessives start segregating out? Only time will tell. Everyone should be a part of this new development.

Dave Niswonger

THE POTENTIAL OF *IRIS SIBIRICA*

Fourteen years ago Sarah Tiffany told me that when she crossed a white flowered *I. sibirica* with a white flowered *I. sanguinea* she got 100% blue seedlings. I filed this away as an interesting piece of trivial information, thinking that I would never have reason to use it. Then Jean Witt presented an opportunity when she asserted that the plant known as, and being sold as *I. sibirica nana alba* is actually *I. sanguinea nana alba*. I'm sure that Jean has reasons for this, although she didn't elaborate, but testing her assertion through hybridizing appealed to me. So in June of '93 I crossed what I have as *I. sibirica nana alba* from Shirley Pope with 5 white siberians. First I selfed it, then using it as a pod parent I crossed it with 'Snow Prince' (Tiffney '90) and 'Sibirica Schwan' (Foerster '31) to represent white sibericas, and to represent white sanguineas I crossed it with 'Bellissima' (Warburton '86) and a plant that I got from We-Du Nursery that they called *I. sanguinea nana alba*. I did not use *I. sibirica nana alba* as a pollen parent except in the selfing.

There may be some news about flower color before the end of this year ('96 Ed), but the seedlings began to be interesting as soon as they started germinating. Up to a quarter of each cross was albino; leaves without a hint of green. It was sad in a way because they were all going to die, but also exciting because I'd never seen an albino iris seedling before and here were 7 out of 28 from *I. sibirica nana alba* X self, 1 out of 5 from *I. sibirica nana alba* X *I. sanguinea nana alba* (We-Du), and 3 out of 16 from *I. sibirica nana alba* X 'Sibirica Schwan', all with pure white foliage. When I told Darrel Probst about this he suggested that I germinate them all (I had some in reserve) because that whenever albino foliage occurs, there is a good chance that variegation will also appear. None did in the seedpots, but after they'd grown in the fields for a couple of months one of the seedlings from 'Snow Prince' was variegated on one side of the fan and all the increase that grew from that side was variegated. I'm hoping that the variegation will stabilize and stay vigorous. Another interesting feature of the seedlings was the range of sizes within each cross. In the selfing, all were short with coarse, wide leaves arranged in wide-spreading fans. The 'Snow Prince' seedlings were tall, with narrow leaves and upright fans. The *I. sanguinea nana alba* seedlings had the greatest variation in height and leaf width from dwarf to nearly normal. There is one more cultivar which I perhaps should have included in my experiment, it's an unregistered iris that I got from Bee Warburton called 'Weisser Zwerg'. Does anyone know the background of this iris- where it comes from????? It's a white dwarf, as its name suggests, but it's unlike the *I. sibirica nana alba* or the *I. sanguinea nana alba* that I grow, being shorter than either, with coarse foliage and having its fans increase in an unusual sideways pattern. If anyone has information about this iris I would appreciate hearing from you.

On a related note, I've become intrigued with the qualities that *I. sibirica* has to offer to the hybridizing of siberians. In another experiment I crossed 'Snow Prince' onto many modern cultivars and seedlings. 'Snow Prince' has yellow buds and a creamy crest when the flowers open. In my imagination I could see a tiny flowered yellow sibirica- little yellow butterflies. So I put 'Snow Prince' pollen onto many different kinds of yellow flowered siberians. The first generation has flowered completely and the results are surprising and positive. Every plant in the crosses with yellow seedlings produced blue flowers, no whites, yellows or pinks, just various applications of mid blue-violet. They were vigorous and had short foliage, tall stems and many small flowers. I liked them. They were not totally sibirica-like, nor did they resemble 'Flight of Butterflies' (Witt r.'72) or 'Lorena Cronin' (Cronin r.'91) which have large signal areas crossed by purple veins to purple fall edges and purple standards held straight up in the air. My seedlings were more evenly coloured and the signals were smallish, ranging from white to pumpkin gold (which was itself interesting). It will be the next generation that produces yellow butterflies (I hope) from crossing together the children of the various yellows x 'Snow Prince'.

I also crossed 'Snow Prince' onto a near-blue amoena seedling of mine that had a yellow parent. This seedling was from 'Isabelle' (Warburton '89) X 'Silver Illusion' (Johnson '87). The cross of this seedling with 'Snow Prince' gave me the most interesting immediate results and the greatest variation among the 'Snow Prince' children. All the flowers were small, dainty and slender and about half were blue-violet, most of the rest being pink. Two were extra special with lavender standards and styles ringed with yellow and yellow falls with purplish netting and dotting. They looked like sunsets. They gave me many ideas about orange, brown and red flowers. My original project of yellow butterflies has expanded.

I especially liked the delicacy of the flowers, the vigour of the plants, the stalk height and the wide separation of flowers from foliage. This is a display aesthetic that Darrell Probst taught me to appreciate. He pointed out how satisfying the flowers could be, from a garden design standpoint, when they appear by themselves without the foliage interfering. A current display aesthetic for siberians is for the flowers to appear nestled in the foliage or be held just above. The sibirica display is quite different and may take some getting used to. However, I have received many positive comments from people who like having taller siberians in their gardens. ('Caesar's Brother' has this habit in my garden. Ed.) In addition, irisarians from some of the hot, siberian-unfriendly parts of the country tell me that taller siberians perform better for them since achieving any height is a challenge.

As I said, I liked these seedlings and did a lot of crossing with them, and look forward -as always- to the flowering of the next generation.

Marty Schafer. SIGNA Fall 1996.

Marty has kindly written that he had 'wonderful color patterns' in the 'Snow Prince' second generation seedlings and that the variegated seedling had remained so, but that it doesn't look too bright.

Ed

THE BACKGROUND TO 'SHAKER'S PRAYER'. MORGAN WOOD WINNER 1996

'Shaker's Prayer' is every hybridizer's dream. No work on hot summer days was required; the bees did that. There was no need to harvest the seed just at the right time, refrigerate, or soak it; the seasons did that. Planting under lights or transplanting small seedlings could be dispensed with; it chose its own spot in the sun.

Two possible parents, 'Sparkling Rose' and 'Grand Junction', were growing well in a new island bed. Other perennials that were growing there were small, and so when about a dozen Siberian seedlings emerged between the clumps, they were left to fill the spaces. The first bloom season showed ten of the seedlings to be very ordinary, and they were hauled off to the compost pile in the woods. The two

remaining, a tall blue one and a very tall multicolour striped one, grew on to form fine clumps, blooming in the garden for the next couple of years. Many garden visitors admired the multicoloured one, but the blue was not as interesting and eventually joined its siblings on the compost pile.

The Francis Scott Key Iris Society hosted a regional tour in 1988 and Clarence Mahan was present. He admired the multicoloured seedling and even took a stalk with him on the bus. "This has five colors in it," he said. Entered in our local show, the seedling, now labelled CW-10, received an EC as the best seedling. Lined out, planted by the pool and sent as an official guest for the 1991 AIS Convention in Washington DC the seedling was on its way to being seen by a wider audience. All the while, visitors continued to admire it. Clarence proposed a few names, and 'Shaker's Prayer' seemed the best fit for a tall iris: it is simple and traditional in form, with upstretched stalks that swayed with the breeze. The Iris Pond registered and introduced it in 1990.

At the AIS Convention, the three year clump by the pool had 197 stalks, and the performance of that clump as well as of guest showings in other gardens and a row of lineouts, captured it for the President's Cup. 'Shaker's Prayer' went on to win the Walther Cup for most HM votes in 1992, and the Award of Merit in 1994.

A plant of exceptional vigour, 'Shaker's Prayer' has been proven to grow in almost every part of the U.S. In the south it seems to grow shorter, but in cooler areas with a slower spring-time warm-up, the stalks can grow over four feet tall. Clumps quickly become very large with a multitude of stalks, each carrying about 5 buds. While often one of the first Siberians to bloom, its bloom season extended on.

'Shaker's Prayer' excels as a landscape plant, yet is difficult to photograph because of the small multicolor blooms. Its form, in contrast to many other modern Siberians, is drawn heavily from the *I. sibirica* side of the 28 chromosome sub-series. Its flowers are neither tiny nor as large as even the large-flowered diploids; Currier McEwen labels this as 'traditional'. Since 'Shaker's Prayer' was introduced, several other smaller-flowered Siberians have also found success. Luckily the standards for judging Siberians allow for many different acceptable flower forms. Maybe some of 'Shaker's Prayer's children will inherit the vigor and good garden qualities of the very simple chance seedling that found fame beyond all expectation.

Carol Warner, *The Siberian Iris* Fall 1996

LEXINGTON'S METEOROLOGICAL MISFITS

Although, temperature wise, the last few weeks have been mild, yesterday it turned much colder. After having a run of days in the 12 to 17 degree Celsius range, today, March 15th, at 1:00pm local time, it is cloudy and -1C. It looks like the poor daffodils and crocuses are hanging on. Although most things are now growing, I don't look for them to be hurt. This will slow things down a bit, which may not be totally bad since some things were coming on a bit too fast for the season.

Are you familiar with the 'Walking Iris'? I think that it is properly known as *Neomerica gracilis*. A few years ago Joan Trevithick helped me identify it from a picture. The plant is tender, so I have to grow it inside during the part of the year in which there is danger of frost. It started blooming a couple of weeks ago. It has no open blooms today, but loads of buds. The blooms look similar to those of sibiricas, and are about the same size. The standards are purple and the falls white and although each fragrant bloom only lasts one day, the bloom period spans several weeks.

Now for the flood news. On the first day of March, we had a record rainfall event. It started raining before dawn and rained heavily throughout the day. By the time it was over, we had 13.45". We had another 1.10" on the 3rd and another 1.25" on the 5th. Many of the creeks and rivers reached record crests, in some places the water got so high that the water gauges were totally submerged. Whole towns were totally under water. Some roads remain closed because bridges were washed out and sections of road washed away. Some roads that are open are treacherous because of cave-ins and land-slides. Even some parts of Lexington were flooded this time. Since I am on what is reputed to be the fourth highest spot in town, the water comes nowhere close to me. However, the soil was so saturated that we had water in a crawl space under the house. Once the rain slowed, the water drained away before it could do any damage. For March as a whole the rainfall total is now 17.99", which is already above the record.

Mark Cook

IRISES AS HERBS; CULPEPER'S COLOUR HERBAL

IRIS PSEUDACORUS FLAG (Yellow)

It has a strong smell, not so pleasant while green, but growing more grateful and aromatic as it dries.

This is the commonest of the wild irises and is distinguished from the others because of its longer and narrower leaves. It sometimes grows to more than seven feet (2.1m). It is also called Myrtle Flag, Myrtle Grass and Fleur-de-lys.

Where to find it: Marshes, wet woods and wet ground by rivers, lakes and ditches.

Flowering time: Midsummer.

Astrology: Flags are under lunar domination.

Medicinal virtues: The roots, which only are used, are hot and dry, opening and attenuating, and good for obstructions of the liver and spleen. They provoke the urine and the menses, help the colic, resist putrefaction, are useful against pestilential contagions and noxious air. They are an ingredient in theriaca and mithridate, and are also used in sweet bags and perfumes.

Modern uses: The infusion of the dried root has been used to check diarrhoea and leucorrhoea and to ease menstrual pains. The sap itself is purgative and emetic and very bitter. It is toxic in large doses. Applied to the skin it can cause blisters. Because of its acrid nature it is little used nowadays and not recommended for domestic use. It is also an example of a herb whose properties differ in the fresh and dried states.

IRIS GERMANICA FLEUR-DE-LYS (Garden or Blue)

It purges the head and clears the brain.

The Garden Iris, or Common Blue Flag as it is otherwise known, grows in clumps. The leaves are broad and flat, with thin edges like a sword. The flowers are purplish-blue and the roots, which spread themselves on the surface of the ground, are reddish brown on the outside and whitish on the inside.

Where to find it: It grows in gardens, but originates in the Mediterranean.

Flowering time: Late spring and early summer.

Astrology: The herb is lunar.

Medicinal virtues: The juice of the root is a strong errhine; being snuffed up the nostrils, it purges the head, and clears the brain of thin, serious (sic), phlegmatic humours. Given internally, the juice of a strong decoction of the root, is a strong vomit (sic), and good for the dropsy, jaundice and agues. It is rarely used without honey and Spikenard as it vellicates and offends the stomach; but prepared as such it does ease the pains and torments of the belly, the shaking of the agues, diseases of the liver and spleen, worms of the belly, stone in the reins, convulsions and cramps, and those whose seed passes from them unawares.

The juice of the root applied to piles gives much ease. A decoction of the roots, gargled, eases toothache and helps a stinking breath. the powdered root helps cleanse and heal wounds, ulcers, fistulas and cankers.

Modern uses: The root is collected in autumn. It is used mainly as an aromatic to improve the taste of other medicines. The violet-like aroma intensifies on storing the dried root. The fresh root is purgative, mainly because of the juice it contains. It should be noted that *Iris versicolor* is also known as Blue Flag, and is the iris mainly used by herbalists. This grows in swamps in the United States and Canada and is a useful remedy for non- malignant enlargements of the thyroid. It also acts on the liver and will correct pale coloured stools. In larger doses it is a laxative.

IRIS FOETIDISSIMA GLADWIN

The root boiled in wine procures women's courses; and used as a pessary, works the same effect, but causes abortion to women with child.

This is one of the iris family, also known as the Stinking Iris, but it is smaller than the Common Iris. The flowers are a dead purplish ash- colour; the seeds are bright orange.

Where to find it: Woods and shady places, particularly near the sea.

Flowering time: Midsummer.

Astrology: Under the dominion of Saturn.

Medicinal virtues: It is used by many county people to purge corrupt phlegm and choler, by drinking a decoction of the roots. The roots and leaves can also be sliced and added to ale for weak stomachs. The powder in wine helps those with cramps and convulsions, or with gout and sciatica, gives ease to the most griping pains of the body and the belly, and helps those that have the stranguary. The juice of the root snuffed up the nose causes sneezing and draws corruption from the head.

Half a dram (890mg) of the seed beaten to powder, and taken in wine, speedily relieves those troubled with a stoppage of the urine.

The root used with a little verdigris and honey and with the addition of Great Centuary root is effectual for wounds of the head and to help draw forth thorns and splinters.

The root boiled in vinegar dissolves and consumes swellings and tumours when applied to them.

Modern uses: It is purgative, but also anti-spasmodic and will relieve stomach cramps. the former action is achieved by administering a decoction of the roots, the latter by infusing a quarter teaspoonful of the powdered root in a cupful of boiling water. The infusion also helps hysterical and nervous complaints. In action, Gladwin is similar to Yellow Flag root. It can be a violent remedy if not used correctly and should not be used domestically.

'Culpeper's Colour Herbal'. Copyright W.Foulsham & Co. Ltd. 1983.

Foulsham have been extremely kind in allowing me to reprint this. I am grateful both to Sue Peirce (We were surprised too.) for her helpfulness and to her Director for waiving the fee due to the BIS' charitable status, without which considerate action you would not be reading this.

Glossary:

fistula: pipe-like ulcer, surgically made body passage.

mithridate: antidote to poison.

theriaca: antidote to venomous bites etc..

stranguary; painful retention of or difficulty in passing urine.

vellication; trembling

Whilst we must allow Culpeper his mistakes in his descriptions of the irises, for the record, here are my corrections:

Germanica: Well, most irises grow in clumps, so that's not a definitive attribute, and as far as I'm aware, nowadays it's certain water-irises which are referred to as 'flags'. The roots are whitish on the outside as well as the inside, and would very much object to being on the surface, if my bearded are anything to go by, becoming husks in short order. All the species described have saggitate leaves, those of *germanica* and *pseudacorus* being glaucous, as well as the latter having 'water-marks' when held against the light. *Foetidissima* occurs in yellow in the wild as well as the usual- rather unkindly described-thin petalled form heavily plicated with purple which Culpeper knew. I'm sure that he would have dealt in a more generous fashion with that, had he known it, and then of course there's the variegated form of his Stinking Iris. For those of you avoiding it due to this appellation, it's only applicable on bruising the leaves, and so needn't put you off growing a very reliable plant most useful in the less sunny corners of the garden. I've not noticed this attribute over a good seven years of growing it. There are white and yellow berried forms now too.

The extract is included only for the sake of interest so don't regard it as incitement! My inclusion of it does *not* imply that I recommend anyone to experiment with such herbs as there is significant and probable danger associated with ignorance in this field. (No pun intended!) Those of you with heart trouble don't rush out into the garden at the appropriate phase of the lunar cycle and eat foxgloves, or cose indoors drinking nitro-glycerine, after all. That said, anyone in our ranks with knowledge of either herbalism or related chemistry, you are only too welcome to comment, preferably at length!

THE LURGH FILE

Now, here, as usual, I've some odd goings on which I'd very much like answered. Pretty please? We can always do with some discussion in here after all, so please do write, you can always stay anonymous if that's what it takes for you to come out of the woodwork! I must most definitely be doing something wrong, and I'd very much like to know what.

Versicolor 'Mysterious Monique', on splitting off a rhizome to swap with Mr. Bennett in mid March, I discovered to have no old roots at all, not even husks, and only thread-like new ones. Do versicolors do this normally, or is something amiss? I only had babies to test the theory on and didn't really want to discombobulate them in case they turned their toes up over it. Cowardice, I know. I can only hope that the swapped piece flourishes. Toaday, the 24th of April, I've lost a fan of this to what smelt like the classic soft rot, and when I squeezed the rhizome from which I'd cut off the affected fan, it squirted rot from the centre, so I chopped it back to the main rhizome and heaved it out, it having, of course, *excellent* roots... I also treated it with ancient 'Nimrod T'. Mr. Bennett has written that sadly, he's lost his piece.

Laevigata 'Nou Beni' lost another fan to rot, so I drenched it with a solution of the same 'Nimrod T', but on checking some time later (flu intervened) I had to chop out that whole rhizome. The only discernable difference -to me- between the two potfuls is that the one that has lost the two fans now isn't earthed up as well as the healthier one, and had a few new roots showing between the old fan bases above the soil level, which isn't the case with the happy clump. I sent what purported to be a totally healthy piece to Mr. Bennett, but it damped off. As I tweak this on the 24th, that whole bucket of fans has been lost, but the other one -when I dare to look at it- seems fine.

Laevigata variegata which came to me last year under the friendly auspices of Margaret Criddle, from a kind friend of hers, Manny Neale, as the most enormous single fan I've yet seen, short of a water grown pseudocorus, put up two side shoots and then this spring lost one of these and the main fan to rot. Main fan did I say? A figure of speech, it was a tiny thing, although I'd lavished 'Phostrogen' on it liberally last year. Well, I'd thought that I was, it apparently didn't. A stonking great *laevigata* seedling that I potted up last autumn so that I could get rid of it as it was totally boring, and small flowered with it, bloomed with botrytis in the stumps of the cut off old foliage as soon as I was helpful enough to stand it in a bucket of an inch or so of water.

Louisianas, I acquired five from a nursery, one of which had already been potted on and is still the only happy item, and four still in their importation pots, all older hybrids at a guess, as the only one I've found out about to date was registered in the mid '80s. (My thanks to Neville.) I thought that they were waterlovers, -which is why of course I was buying them in yet another drought year- and so introduced them to shallow water. Anne told me on enquiry that the temperature of this can be critical if you don't want to shock your delicate creatures, but I just dipped some out of a shaded barrel in my ignorance, so it was cold, if not mains. Well, talk about fur... I was horrified. The outer leaves went yellow and then cream, rather quickly I thought, so I investigated and when I pulled them off the interstices were full of it. Some that I didn't spot fast enough formed brown patches on the solid 'stem' of the underlying fan which I had to chop out. 'Nimrod T' had the cobwebs dusted off again, but to no avail. I took them out of their water, most are still out. It does seem, even in my tiny group, to affect some varieties more than others.

Ensatas now, I transplanted some 5 seedlings from their 31 seedpot into a perforated florists bucket in the autumn of '95, and last autumn noticed that although they looked fine otherwise, the oldest leaves had bright scarlet rimmed lesions in them. I hardened my heart- they were from Hiroshi Shimizu via the BIS- and burnt them, solacing myself with a feeling of virtuousness. A short time later I noticed that there was one remaining, a smaller seedling that I'd overlooked, which didn't appear to be suffering the supposed virus, and not having the necessary moral fibre for a double bout of infanticide, however well advised, it's still extant, unless eaten.

I now have an established *sibirica* of 5 or so years, 'Reddy Maid', looking withered in the ground and, not that I question Jennifer's advisement that it's most likely to be botrytis, I can't see or smell any signs of mould or rot. She tells me that this mould is apparently more prevalent in reds and pinks, so it's out with the dratted sprayer. Well, not today, Josephine, being our only more than drizzling day for about two months. In early May I noticed that *sibirica* 'Marlene Ahlburg' had one fan badly affected too. Hah! Before the little May monsoon got going properly in the second week I managed to accost everything with ancient 'Dithane 945' and even under the trial of the subsequent cold or warm wetness, haven't spied any more rot. However, that's bound to be simply because I've not been about in the garden as much... must get a telescope.

Any guesses anyone? Or shall I just whimper up my sleeve as all these gorgeous things keel over? With bearded I tend to treat rot with surgery rather than sprays, but that really doesn't seem to be working with these apogons. There does seem to be something more to growing these beauties in buckets than I've imagined!

Ed

COMPOST HEAPS

In days of yore the heap sat on a terrace above a 4ft drop and the drainage was ferocious, but I got nice material from it. Then the wall fell down and we did a bit of reorganising with the result that for many long years the heap has been in a pit about a yard square. This normally gets dug out twice a year. The uncomposted material is put aside. When I get down to the dung worms I know things are getting interesting and that I shall soon get the best material. This is variable in texture, but is put through a coarse riddle so that the less digested bits can go back with the uncomposted. The good stuff is parked on plastic sheeting which can be covered up against the birds and cats and there is usually about half a cubic yard of it. Some will be sterilised for repotting and the rest can go wherever I want it if there is any left over. There will be some weeds, but they go back into the heap in due time. I don't bother about the leaves that fall into the heap, but leaves in general are given a leaf mould patch of their own and are invaluable. Apart from that, any vegetable material which is not more than 1.5cm (½") in diameter goes into the heap and deeply do I resent the plastic bags of the frozen vegetables which I can't compost. Corn cobs take a surprisingly long time to rot. Only really fresh nutshells go in; the ones which have been cooked or preserved take forever to rot down and I take them into Sussex where they can be used on slippery grass paths from which they disappear quite quickly, or used to fill in some of the collapsed mole runs. Meat, fish and cheese go in the dustbin because we do have rat trouble at times.

The heap usually gets turned twice a year: when the toads have moved out for the spring and around the first frost of autumn before they settle into their winter pension with full board and all mod cons. I still have arguments with the toads and sometimes frogs and the real trouble at the moment is that something will keep raiding the pile and leaving unsightly debris on the wall. I shall have to get some covering probably wire netting. I've done it once in Sussex when the summer was so wet and cold that the heap just sat there, and it did improve matters then.

Occasionally a handful of accelerator is scattered over a thick new layer of weedings. One thing I am sure of is that a free-standing compost heap should always be in the same area because there is a build-up in the soil of the organisms which break down the vegetable matter and help to make the heap into really useful material. And another important thing is that the sheer weight of material added over time helps to ensure that the contents of the heap heat up and so partly sterilise it. In other words, keep the area of the heap relatively small and pile it up high; the actual area will depend on the size of your garden and the amount of material you have to compost. What I would find useful is one of those nice electric mincers to chop up things like the surplus winter jasmine stalks. And, of course, the stuff I can't compost goes to the council collection centre. If you are really lucky your council later sells some of the surplus compost to gardeners.

Anne Blanco White

In the frosty days I was intrigued to find tiger worms frisking about between the insulating layers of plastic sacks on my hot heaps, and I've been lucky enough to be given the refuse from a local wholesale greengrocer over the last few months, so my spring heaps have been made including layers of nicely rotting fruit and aged vegetables. I can hardly get onto the allotment now due to the vast amount of this and horse-muck that's accrued since I've had 'flu, but if this doesn't act as the perfect accelerator, I shall be very interested to hear theories as to why not from people. I can't imagine that I'll get around to labelling which heaps have it in and which don't before I forget, but one or two may get noted so if it makes an appreciable difference, I'll let you know. It should at least keep them from drying out when they heat up, leaving me with what amounts to fried horse-muck, or is that just wishful thinking? Now, there must be others of you out there heaping, on whatever scale, so could we have some articles about how to -or how not to- for the next issue? Pretty please?

Referring to Anne's mention of composting bins, the only experience I've heard of with these, a swinging type in this case, was from an elderly lady who had used grass-clippings as the sole ingredient, hoping to be tidy and productive at once. She ended up with barrels of green slime each time she tried. Some of you must have had other experiences of these wilful beasts, though hopefully rather less unpleasant. Do write in!

Ed

SEED DISTRIBUTION

Gary has asked me to pass on his request that members do NOT make their cheques payable to him, but to the Group instead. It is Philip who sorts out the finances for us, and for Gary to have to put such cheques through his account first simply clogs up the process unnecessarily. He also assures me that in his experience, seed that is two or three years old is just as viable as if it were fresh, and that of five years of age and older can give good results, delayed germination often being a survival strategy on the part of the plant. Therefore, none of you should be put off acquiring older seed, so please order some now! Anyone who's keeping records of their successful germinations, do please write in, we'd love some discussion on this to inform us all generally of different methodologies and in particular to encourage less experienced members (such as myself!).

SIBIRICAE: 'Arabian Princess'- Dark blue diploid Jennifer Hewitt
'Soft Blue'- Pale blue diploid. Remontant JH

'My Love'- Mid-blue diploid. Remontant JH
'Dreaming Yellow' x typhifolia JH

(x robusta) 'Nutfield Blue' JH

ENSATAE: New Zealand Form. JH

Mixed JH

The following are from Dr. Currier McEwen:

'Dewa Banri'- Kamo Nurseries (Ichie). Excellent small flowered type.

'Kamasumi-no-Sato'- Kamo Nurseries. White brushed blue.

'Dramatic Moment'- 6 falls, very dark blue-violet. Repeats.

'Returning Tide' x unknown- dark blue stds, near white falls. Repeats. Payne award 1982

'Rose Queen' x unknown.

'Shii-no-Sode'.

'Shiun-no-Mine'- Kamo Nurseries (Ichie). Sanded purple.

'Warabe-Uta'- New Kamo Nursery (Ichie), small flowered type.

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(Please check to see if your address is correct. Notification of address changes and corrections would be appreciated.)

P.E. Allery, Membership Secretary, 12th May, 1997.

A TRIBUTE TO CURRIER MCEWEN

The Group wishes this item to be KEPT SECRET from Dr. McEwen.

The Chairman wishes to pay tribute to Dr. Currier McEwen, our Group's Hon. Life Member, in the next issue. This will involve additional expenses in printing. The use of colour photographs and colour photo-copying is under consideration. Those wishing to support this project are invited to send a donation to the Treasurer.



GROUP FOR BEARDLESS IRISES (formerly Siberian, Spuria and Japanese Iris Group)
of the BRITISH IRIS SOCIETY.

ACCOUNTS FOR THE PERIOD 1st JANUARY to 31st DECEMBER, 1996.

BALANCE SHEET AT 1st JANUARY, 1997.

Building Society Deposit Account at 1st January, 1996. (see note (1))	£ 575.36	£575.36	Reimbursement of Treasurer's expenditure - quarters ended 30th June, 30th September and 31st December, 1995. (see note (4))	£113.88	£113.88
Payments by members:-			Petty cash floats (net)		
Paid in to Building Society	£609.32		Hon. Newsletter Editor (see note (5))	£135.00	
Cash in hand - Treasurer: Cash -	£20.00		Hon. Secretary (see note (6))	£10.00	
(see note (2)) Cheques -	£71.00	£700.32	Hon. Treasurer (see note (7))	£210.00	£355.00
Refund - part March '96 Newsletter float		£14.00			
Net interest (see note (3))		£3.42	Building Society balance, including interest at 1st January, 1997.		£733.22
Group Library Valuation		£50.00	Group Library Valuation		£50.00
			Cash in hand - Treasurer (see note (2))		£91.00
		<hr/> £1343.10			<hr/> £1343.10

NOTES: (1) Including net interest at 1st January, 1996. £22.00 owed by B.I.S.
(2) Paid in on 13th January, 1997.
(3) Tax paid during the period amounted to £0.85.
(4) Reported in Balance Sheet dated 6th March, 1996.
(5) Total funding £255.00 (including funding by Treasurer).
(6) Funded by Treasurer.
(7) Total expenditure, including funding, during 1996 - £293.87.
£73.87 owed to Treasurer by Group.

Philip E. Allery, Hon. Treasurer & Membership Secretary,
21st May, 1997.

Audited and found correct.

Hon. Auditor,
22nd May, 1997.