

A line-art map of the Americas, including North and South America. In the center of the continent, there is a detailed drawing of an iris flower with its leaves and roots. Several jagged lightning bolts are shown striking the continent from various directions. The word "SIGNA" is printed in a large, serif font across the middle of the map, underlined.

SIGNA

April, 1969 - No. 3

THE SPECIES IRIS STUDY GROUP
OF THE AMERICAN IRIS SOCIETY

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OFFICERS OF THE SOCIETY

CHAIRMAN: B. LeRoy Davidson 911 Western Ave. #200, Seattle,
Washington 98104
Phone: (206) SH6-2156

SECRETARY
TREASURER E. Freeman Yendall 24 Irving Terrace, Kenmore,
New York 14223

LIBRARIAN: Thomas J. Buckley 6330 S. Damen Ave., Chicago,
Illinois 60636

SEED EXCHANGE MRS. Ruth Hardy 296 Hunsaker Lane, Eugene,
DIRECTOR Oregon 97402

EDITOR: Bruce Richardson 492 Twenty Rd. E., R.R. 2, Hannon,
Ontario, Canada
Phone: (416) 679-4636

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Edited and printed by Bruce Richardson.

C O N G R A T U L A T I O N S

TO LORENA REID FOR BEING THE FIRST RENEWAL RECEIVED.

The Secretarial Office would like to see everyone renew his membership-subscription without a reminder.

With this issue of SIGNA, the one-year memberships come due for renewal. You will save us time and money if you send it now..

.....to the new Secretary/Treasurer:

Mr. E. Freeman Yendall
24 Irving Terrace
Kenmore, N.Y. 14223

\$2.00 per year or \$5.00 for three years.

Make cheques payable to the Species Iris Study Group.

FROM YOUR CHAIRMAN FOR SPECIES

Roy Davidson

A bare year ago we were still in the organizational phase of your Species Study Group. The seed exchange had been first organized and was rapidly accumulating a reputation; we had not published a line and the membership was a small one. With the advent of SIGNA, we really began to gather a head of steam, and although our membership is still not enormous, we feel we are on the way. On the way to where? Not into uncharted space, for there were basic plans laid down by the Board before we came into existence as a Committee, which in turn formulated the Study Group.

The long promised Species Study Manual has been delayed, but if not off the press by the time this SIGNA is mailed, will follow soon. There have been agonizing delays, illnesses and foul-ups due to a mail strike and other mail troubles. We sincerely wish Betty Rowe a speedy recovery, and regret that it was necessary to appoint a new Secretary/Treasurer. We wish Freeman Yendall the time and patience for the position, and a bouquet of good luck. Bouquets also, with our thanks to Betty and one to Ruth Hardy for the fine organizational work she has done with the contributed seeds. Thanks to all who saved and sent seeds towards this effort; it is our lifeblood.

A very SPECIAL THANK YOU to Tom Buckley too; in case you do not recognize it, Tom was our Librarian before falling ill, and his great backlog of accumulated information and indices is a comfort and aid to those of us who do the office work which results in your SIGNA. There is an effort afoot to make these available on a loan basis, but we need a volunteer to manage the loan-library.

But the biggest job of all is that of your Editor, Bruce Richardson

and his biggest headache still remains finding enough material in his mailbox to fill another issue of SIGNA. Thanks Bruce, for the time you spent too in bolstering up the morale at this end.

Jerry Flintoff has volunteered to be our official indexer, as we feel no publication is of lasting value without a through cross-index being published occasionally. Jerry will finish off also the unindexed years of the B.I.S. Yearbook, commenced by Tom Buckley.

Some very interesting mail crosses this desk; one, a letter of distress, told of a parcel of misplaced rhizomes on a London bus while en route to the R.H.S. Iris Show. These were not just any rhizomes; they had been personally collected on the Russian-Turkish border and on the lower slopes of Mt. Arrarat? The first lot was described as being "the shape of *histrioides major*, but bearded, six inches high and coloured yellow, purple or white." The one from Arrarat was of a like height, but was a "perfect miniature bearded iris with white standards and dark plum-coloured falls!" It is certainly to be hoped that whoever found them was gardener enough to plant them. Can anyone help us guess what they may have been? Isn't that in the general area of I. mellita?

A definite addition to the reference material on hand here was a gift of ten years of the B.I.S. Yearbook from Muriel Ross of North Burnaby, B.C. Thank you, Muriel. It has been voted to present you with a three year membership for your thoughtfulness. Any publications that have reference value, whether they deal exclusively with iris or not, are especially valued for our library. Recent R.H.S. Journals have been giving us much information on recent Asiatic expeditions, particularly those of Furse, and are not represented on our shelves.

From Jack Craig's letters, full of all sorts of lore about choice Japanese plants, here is a short article consisting of extractions; hopefully we shall be receiving more comments, not only from Jack in Japan, but from any and all our membership. We need observations and stories about travels, etc., through areas where irises grow.

If you haven't sent for the list from the seed exchange, by all means do so; this year's offerings were somewhat different from those of last year. In fact, it was rather remarkable to observe how so many not offered last year showed up this year. And we still plan to be able to offer still other things next year and the year after that. It is inevitable that over the years really superior strains of many species will be evolved, because we hope to be saving seeds from only the superior plants we grow, discarding the inferior or less lovely.

Now that we are about to complete our first year, let us all wish the Species Study Group a Happy Birthday.

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ERRATA AND ADDENDA

No, these are not two new registrations, but an acknowledgement that there are a few corrections to be made in SIGNA. It is difficult enough to get everything in readiness for the deadline of a publication,

and small errors are almost inescapable; those of the first two issues of our newsletter are minor enough. Most can be easily passed over as easily overlooked typographical misprints. A few however may be misleading or confusing and will bear correction lest such misinformation as is inferred be perpetuated. Please make the following corrections:

- p. 5 The Editor of "Dykes On Iris" is George Dillistone.
- p.7 NOTE: The discussion of classification in the Evansias does not necessarily reflect the attitude the Study Group will follow; we expect to learn much from Rodionenko's study though at present there is no plan to adopt his classification.
- p.13, bottom: Unfortunately the wording here might lead to the belief that all hybrids cited had been accepted as authenticated. This is not the case, nor is it now possible to study them further, as most of them are not now known. Mark this "UNVERIFIED HYBRIDS".
- p.16 The citation of the *Oncocyclus* hybrid names in latinized forms is not to be taken as acceptance of the practice, which is in violation of the rules of the International Botanical Congress.
- p.20 Versicolor article, last line, paragraph 1: Write "species" for "specium".
- p.21, line 5, third down paragraph: Write "putative" (meaning reputed, though unproven) for "punative".
- p.37 Q & A first line: That is the African section
- p.39 Catalog of sources line #2: This referred to a plant exchange.
- p.42 Tigridia article" The native name is "Bag-cachildag".
- p.45 The form of *I. japonica* referred to has been spelled variously; a clonal entity, it should be capitalized and "UWODU" is preferred.

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JUDGING SPECIES CLASSES

Roy Davidson

Today's new interest in the many sorts of Iris species makes it seem likely that a good portion of them will become garden subjects, to appear inevitably on the showbench. This pleasant enough anticipation is likely to end in a quick flush of false-hope unless some measures are taken early towards expansion of show schedules to allow as many classes as feasible, but particularly it is imperative that judges be instructed in the evaluation of such exhibits.

It would be most unrealistic, of course, to expect any judge to fairly equate a stalk of a recent tall bearded introduction with one of an *I. pumila*, for example (or even with one of *I. trojana*, for that matter), as conceivably could happen in an open class for "ANY BEARDED

IRIS". It is seen of course, that the simple unimproved IRISES OF NATURE must be allowed classes to themselves. Quite obviously this is the reason for a Show Schedule, the means of bringing orderliness to the display, and facilitating evaluation of its exhibits. If a schedule committee so wishes, an expansion of the number of classes for the "WILDFLOWER" kinds will bring not only an increased interest on both the part of exhibitor and spectator, but will add a good bit of educational value to the show, as well as making for a larger show, all in all.

One local society has progressively expanded its species exhibits as an annual feature of its show; an ever-enlarging background consisting of diagrams, drawings, paintings and catalog-pictures of species, all mounted on rigid hardboards to form the background of the stage for the display of the living specimens. This novel educational exhibit has grown to be as popular as is the QUEEN OF THE SHOW herself! There is no doubt that the public has been influenced into knowing and growing new kinds of irises, for having become aware of them, exhibitors bring them to be shown in competition.

SCHEDULING SPECIES CLASSES

Theoretically there should not be any major differences in the advice for judging "Improved Hybrids" and the simpler species from which they were derived. The judges handbook makes no such distinctions; however let us examine some of the situations peculiar to judging species. Essentially we must never lose sight of the educational possibilities of proper scheduling; we must not allow such classes as "ANY SPECIES UNDER SIX INCHES" or "YELLOW SPECIES" or any other such false class which bears no relation to the taxonomy of the genus Iris. We want to illustrate to one and all the great diversity of Irises and the many uses of the different sorts, thereby increasing their importance in the eyes of the exhibitors and, most especially, to general gardeners.

It is easy enough to limit classes by consolidation if there are not sufficient entries, but it is difficult to expand a show schedule at the last moment, when unaccountable weather or other factors bring a great wealth of exhibits. There are several other decisions that must be made before the show date, as the schedule is being written. For educational reasons it is to be recommended that an entire stem with foliage must constitute an entry in species and it would be even better if three stems were required. Or there may be classes for single stems, classes for 3-stems each, and perhaps mixed classes and collections at the committee's discretion. One thing is certain, that a larger number of classes is going to attract a far greater amount of interest and participation from exhibitors than a restricted schedule.

Classification and placement committeemen must be on their toes and sufficiently familiar with all the many sorts of Irises to efficiently set up the show according to the schedule, and for presentation to the judges without their need to question any part of it.

HERE COME THE JUDGE! HERE COME THE JUDGE!

The first qualification confronting judges of species classes is the most trying aspect of the whole matter of showing species. The 1960 handbook stated "In judging species.....correct identification is prerequisite; each specimen must be properly identified and classified."

This first hurdle could well disqualify the majority of judges, so we had best get to writing some quick and easy rules. In the matter of correct identification and classification, since the taxonomic botanists cannot agree on all points, it is necessary to appoint some final authority on such matters. Recent workers have made some transfers (i.e., Lenz's transfer of Clarkson's reclassified I. tenuis, now universally considered as belonging properly within the Evansia.) But there are some other major revisions not so easily accepted. Some proposals have removed major taxonomic groups from Iris to establish them as separate genera within Iridaceae. Are we to allow our bulbous species to become other-than-irises? We might not miss the Junos so much, but imagine a show without any reticulatas or Spanish or Dutch or English irises for the arrangement ladies! The exclusion of the "SNAKEHEAD" of "WIDOW IRIS" (Hermodactylus) has been accepted for a long time, as has the establishing of the Moreas as non-irises, but it seems hardly acceptable to exclude all bulbous types from Iris Shows, no matter what Men of Science say!

Secondly in the matter of nomenclature; how explicit must an affixed identification be? Can the tiny bearded plant from Crete be entered merely as "I. pumila" for instance? Or does it comply merely as "Cretica"? This might be answered that either is correct for the plant, allowing the assumption that classification and placement committeemen have the whole genus in the palm of their hand; however, it is to be recommended that identification should be as detailed as possible. Thus "I. pumila 'Cretica'" or "I. pumila var. Cretica" is preferred. The detailed listing of species names and all synonyms recently published by the German Iris Society, the work of Dr. Peter Werckmeinter, is certainly to be taken as highly authoritative on all matters of nomenclature, and all show committees should be prepared to back up their decisions with this final authority to avoid any unpleasant delay in the evaluation.

If the judge has survived so far, and has accepted everything before him as correctly identified, he is ready for the main event, the evaluation of each exhibit, as an example of its own peculiar breed. This would appear on the surface to be an elementary thing, but the difficulty becomes apparent when one realizes that as many as ten or more species could conceivably appear in a single class and that the judge must first judge each as an example of its kind, and only then make awards. It is like saying to himself "Is this a better douglasiana than that is a tenax? And if it is, isn't this a better innominata than either?"

SOME QUESTIONS BROUGHT FORTH

It has been pointed out that since, as far as we know, all Japanese iris cultivars have come from I. kaempferi, and all English iris from I. xiphioides, are they to be allowed in species classes? It would seem that this is a matter for the schedule to explain. There is no vast improvement over the species I. xiphioides beyond what horticultural know-how allows, fertilizing etc.....no extra petals, no great change in form nor in the basic colours. There seems no reason to disallow entry of specimens in species classes if the classes are written. In the matter of the Japanese cultivars however, the circumstances are quite different; improved selection has altered the form, the petalage, and classical concepts have dictated what examples of a given strain

were to appear like. If there is a section of the show schedule given over to these irises, establishing colour classes for singles and doubles, that should quite suffice; the "wild forms" known as spontanea would then be allowed in a separate class, or the entire section of the show given to them may be within the species classes. This is a matter for the show committee to decide prior to writing the schedule.

There is no way to resolve the question "How do you KNOW it is PURE of a given species?" Show committeemen had best play it safe with a broad class that allows some leeway. If the classes are to allow only pureblooded entries, the classification and placement personnel had better be armed with plenty of botanical armament. It is safer to allow hybrids, particularly in such as the Hexagonae and Californicae Apogons; classes for pureblood species as well as known hybrids might fill the need. This again is a matter for local committeemen to decide at scheduling time. It is always well to allow a class labeled "OTHER"; if someone brings an exhibit that is not allowed to be shown for some one of many reasons, someone is going to have a mighty hurt attitude about it.

SOME HOPEFUL ADMONISHMENTS

While all the species, and all the examples that could illustrate each one are all CHILDREN OF NATURE, it cannot be denied that some of them are far superior to others. And we do take the attitude that only the finest should be perpetuated. Certainly however, we do not want to erect a set of rules which would in time tend to blur the individuality of the many species. To say that they MUST have wide petals, or that standards MUST be flared and arched, or in placing any limitations on the colouring or substance or other qualities of an iris, onto species classes so that in time they all tend to look alike is to be avoided. Some species are silky in texture and thin of substance and we learned that inherent fragility is the essence of the beauty of I. japonica and its allies among the Evansias. We learned to appreciate what seemed to be fragility in I. hoogiana when it stood up far better in searing heat than many a thick-petaled but soft contender. Let us NEVER say that colour MUST be clear and unmarred; we are learning all over again the exotic "butterfly wings patterns" to be derived from I. stolonifera through 'Saffron Charm', for instance. Let us NEVER say they must all FLARE and DOME; the flattened spidery flower of such as I. purdyi may never win individually on the showbench but a garden clump presents one of the loveliest wildflower displays nature ever conceived; I. fulva is always flared and flat. We can scarcely insist on arched standards in such as I. danfordiae, I. setosa and I. tridentata, whose very nature gives them tiny standards and compensates for the lack by providing the elaborate crests to the styles, which give the blossom such utterly poised balance. Of course, the general advice to judges on points for condition, cultural superiority and grooming should be the same as in any other part of the horticultural schedule.

THE SAME BASIS FOR GARDEN JUDGING

Lastly, remember that species irises are garden plants; we have been regarding them here as showbench subjects, but the same points apply to garden judging with the one exception of carriage. This is an important feature of a garden plant; one that displays itself perfectly with no weaknesses or faults is going to gain favor over a

bench-winner that can never hold its fabulous flowers aloft on a poor stalk. All in all, it is garden performance we value above every other quality. We must never lose sight of their being firstly, for gardens and only secondly as exhibition material. There is little doubt that the arranger is the most fortunate of all gardeners for the wealth of material Iris gives.

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GOLDEN GATE REPORT

The Committee

The Annual Meeting of the American Iris Society in California last year marked the first informal gathering of the Study Group. It was an opportunity to visit with persons of similar inclinations and interests and to sell ourselves. There were far too many conflicting elements (such as a foul-up in busing) for a good attendance at Monday's 12:30 p.m. scheduled meeting, but people kept arriving until the room was appreciably full, and saw a showing (or part of a showing) of 237 slides representing nearly all the major groups of the genus *Iris*, both in gardens and in nature and some photographs of plates from early botanical journals and including those from Dykes monograph, "The Genus *Iris*".

There was much to be seen in the California gardens visited; in fact, it had been years since such a luscious show of blossom had rewarded convention-goers, and the show was displayed on many kinds of iris, besides the show-stopping tall bearded. The botanical garden on the University of California campus at Berkley, famous for many things, will long be remembered certainly for the breathtaking display of bearded beauties, but along one of the major footpaths traversing Strawberry Canyon were great drifts of long ago planted species which are their ancestors, a long way back. In a streamcourse, hanging over the banks and peering between rhododendrons and rank and file with ferns were the *Evansia* hybrids which were made by the late Elwood Molseed in his recent student days there. The record of their origins is not complete, but in May of 1962 he reported in one of the robins that he was apparently getting takes on some of his attempts at mating the *Evansias* and cited pods forming on *japonica* x *wattii*, on *wattii* x *confusa*, and the reciprocal, *confusa* x *wattii*; also that he was getting a number of spontaneous pods, or those set by bees. Molseed's original plan had been to write his thesis on these irises, trying to fathom why they seemed to be self-sterile, yet inter-fertile. There were some other crosses too, perhaps made in another season, and the plants of such inter-bred lineage as 'Darjeeling': (*'Nada*: (*japonica* x *confusa*) x self) X *confusa*, and 'Fairyland': (*japonica* 'UWODU' x *confusa*) X *confusa*. One from the latter cross was a half-sized plant, unaccountably, whereas all the other things ever produced from mating these species had been very nearly identical, not only to one another, but also to the parents, which, if they do actually constitute separate species, are quite similar. Most everything in this interesting group was long past bloom for in the Californian climate these behave as midwinter performers and only a few had persisted so long.

Within the tidy boundaries of the Iris Test Garden itself, several brave surprises were showing, including a number of the Pacificas from several sources, some of them from George Stambach, who is concentrating on them heavily in Pasadena. The scalding sun was not to their liking, as they were not well established plants, nor were the last brave blossoms on some unusually late dwarf and median pogon species. The Spurias are most responsive to California warmth as are the Hexagonae (Louisianas).

Many of the gardens--lovely, all of them--were proudly and importantly growing "other" irises. The men at Melrose, a commercial garden out of Stockton, have long held a strong interest in all species and have probably grown as many as most anybody has, at one time or another. Their display of bathtubfuls of such things as the laevigatas and tridentata, a rarity from the coastal marshlands of the extreme southeastern United States, were very provocative, while large plantings of the Spurias and the Hexagonae were features.

Friday, following the formalities, the Species Study Group sponsored a day-trip into the Santa Cruz Mountains, where we were to show our visitors (a lot of local persons went too) native irises growing in their natural settings. As we left the broad Santa Clara valley and started the climb, we began sighting the creamy yellow irises hanging from the steep roadside banks in the sunny openings between the Madrone and California Bay of Nutmeg (Umbelluraria; in Oregon this is the Oregon Myrtle from which woodworkers turn bowls, etc.). On close examination these irises proved to be quite typical of what is locally there called "The Santa Cruz Iris", and if they are not I. fernaldii, pure and simple, they are certainly close, lacking the ruddy reddish tinge to rhizome and spathe to fully concur with the Foster description. Whatever it is, it is a most delicate and pleasing one.

Upon reaching the eastern summit of the range (the road passed through via Saratoga gap - 2763'), we entered into the great intermontane area of the range drained by the San Lorenzo River; some peaks in view from the gap rose to 3250'; we had been really climbing and now dropped abruptly into the timbered canyon at 1086', and then began a beautiful slow ascent into the heart of the whole, Big Basin. The kind of cover had changed abruptly in the arid, rolling terrain, and was now composed of great Ceanothus (California Lilac) masses and the fantastic saddle-brown contortions of aged stems and trunks of Arctostaphylos and no irises. As we neared the interior of the Basin, the redwoods (Sequoia sempervirens) began to appear, first a scattered few, and then some small groves, through which the roadway twisted tortuously. Then suddenly we were in great cathedrals of them, in Big Basin State Park, where it was almost too shady at ground level for anything but ferns. Irises had appeared intermittently, again the creamy one.

Emerging from the park, we came into a resort area and found a most excellent inn for lunch, later proceeding onward to climb the outer or western ridge, and to emerge on the long descending flank of Ben Lomond Mountain (2600'), and then to drive through magnificent great oaks and Madrones southward along Empire Grade. Mr. Ralph Coleman was waiting for us at the phenomenal great oak at his entrance gate to show us the fine stand of native irises he had preserved on his western slope under the huge trees. They were in all shades of lilac-blue and purple, some pinkish, and a great many with striped and mottled patterns. They answer to no species definition and have been referred to in writings

as "Empire Irises", fittingly enough. Certainly both I. douglasiana and I. fernadlii seem evident as strong influences; this vantage looks down directly to the Pacific and it is this maritime strip that is populated by the former. I. macrosiphon may also have had its day here, even though it is not found in pure form any more. Many kinds of plants are among the things planted here, and one could but wonder if the bees would utilize the pollen of the innominata and hybrids on the wild irises to confuse botanists of another age.

The last stage led gently downward through the altitudinal stratification of the forest, through oak and into a great forest of Knob-cone pine (P. attenuata) in a dry belt, to the lush coastal cover on Santa Cruz Bay, dominated by the domestically planted Monterey pine, P. radiata and Eucalyptus, and to the garden of Joe Ghio in Santa Cruz, as lovely for the fabulous roses as it was for the several gardens of irises, and his tallis were breath-taking in the gentle warmth of this thermal zone. After far too little time, the caravan disbanded, the bus to return people to airport connections and to hotels, all forty of us to go our separate ways. We marveled at the great variety of scenery, terrain and plants seen in so short a time, and more than one of us will fondly recall a leisure day following the hectic and frantic excitement of an annual meeting.

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FURTHER ON IRIS TIGRIDIA

Roy Davidson

On this species from Northern Asia the following notes are relevant; turn to p. 42 of SIGNA and make a note to refer to this page. Dr. Rodionenko has proposed a transfer of I. tigridia, along with I. potanini, from the Pumilae to the Pseudoregelia Subsection. A photo shows it to be quite a delightful little one. The only additional reference in the literature is from the Journal of the Royal Horticultural Society: 42, containing Farrer's report of his 1915 expedition to Kansu and Tibet, "I. tigridia haunts only the torrid amphitheatre of cliffs and loess banks behind Tien Tang Tsu, loving to grow on the rim of steep breaks, sprouting from under some covert of scrub in a tuffet of short grayish foliage from which may stand up the beautifully balanced little flower-de-luces in blended tones of amethyst, claret and blue-violet, on stems of three or four inches in May and June When I next returned to Tien Tang Tsu the seed had mostly fallen As for its prospect in cultivation, one may but hope."

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DID YOU KNOW THERE IS NO SUCH WORD AS "SPECIE"? BOTH SINGULAR AND PLURAL OF THE WORD ARE SPELLED "SPECIES". Well, truthfully the dictionary does have a "specie" (money), but it has nothing to do with botany.

LETTER FROM JAPAN

Jack Craig

ED: Jack was transplanted from the midwest to California at a tender age, and from there to Japan about eight years ago. There he met and married Ginko and they returned to California via a long trip that took them to England and a stay of some period in New York. Last year they returned, along with five year old Miss Winter, whom many will recall meeting at the convention last spring in Oakland, this time to live in Japan, where they take great pleasure in exploring the plants and cultivating other people who enjoy Nature. Following are passages from letters, tidbits relating to irises.

"One of the jewels is tiny I. tigridia, which seems to be midway between a crested and a bearded iris. There are a blue and an orchid-pink form here in a private collection, Manchurian momentos of our friend's years of service there as a Japanese soldier. Grown in 3" pots in full sun, they present no problems in spite of Yokohama's hot and steamy, miserable summers." "Recently some selective work--breeding without cross-breeding--has been done within I. laevigata. Almost a hundred forms were once grown in temple gardens, but all save about ten of the sturdiest have been lost. Most of the variation within the species here is in form, three-petaled or six-petaled, in the manner of the kaempferis, and one with eight petals! In colouring they are blue and lavender to white, and the patterns from solid to feathered and mottled. I have a report of one with a pattern of sharp purple veins, on the order of the little aril hybrid OYEZ, on a white ground and needless to say, am on the lookout for it!" "I. laevigata is a much more showy plant in the wild than is the wild kaempferi, so much so that one wonders why the latter became the favored subject of the breeders; probably laevigata proved less malleable, or more stable." "Some colchicine created plants, hopefully muted to tetraploids, are due to flower at Dr. Hiro's this spring and are eagerly awaited. A new arrival, also much appreciated, is what is reported to be an unusually large flowered form of the species from Russian Siberia." "The wild forms of I. kaempferi (which according to the Japanese botanists should be called I. ensata and are so here in all recent publications: I. ensata Thumb. var. spontanea (Makino) Nakai) are slender and graceful plants which look as though they belonged in a natural sort of garden. A few years ago Dr. Hiro brought an exquisite rose-pink form from England. It is rather remarkable that in the centuries the Japanese people had been growing the plant, the colour was to appear not here, but in a seedlot in a far-away land, to be exported back! This is called 'Rose Queen and is highly regarded here." "The large and highly artificial looking "improved" kaempferis might be called the Japanese equivalent of the Tall Bearded (with the possible exception of some of Dr. Tomino's Ise varieties), their value being primarily as collector's specimens rather than as garden plants. Their mass effect, however, in such as the famous Tokyo garden of the Meiji Shrine is a sight never to be forgotten, though a relatively short-lived spectacle. In the Japanese climate they seem little susceptible to foliage diseases and for this reason their summer green is superior to that of the bearded irises, but even so, herbaceous perennial materials are not generally popular in Japanese landscaped gardens." "Dr. Tomino of Mie University,

who has done more serious research on the subject than anyone, tells me that I. japonica is a sterile species, at least all those in Japan are so, and that it has never set seed, to his knowledge. The entire Japanese population apparently consists of but a single clone! Miraculously this one clone has walked by its long stolons, and with the help of the people, all over the southern three-quarters of the country, to become one of the commonest of plants in the wild. It runs rampant in the mountains, even growing under the timber bamboo where few plants consent to grow. The combination of its form and waxy foliage with that of the bamboo is especially beautiful and is repeated in gardens. The iris grows in areas which reach ten degrees, or perhaps even less, in winter. A memorable sight was its blooming in such a situation near the ancient Kurama Temple in the mountains north of Kyoto, where it had taken advantage of Man's interference with Nature to carpet a sunny bank, its solid, mist-like clouds of two-inch flowers flowing right up to the trainside! Dr. Tomino has reports that I. japonica of Formosa is fertile, but has never been able to obtain any. Perhaps the Ledger form or "UWODU" or the lovely coloured one Edith Cleaves grows could be of Formosan origin; at any rate they are not from Japan." "I. setosa is to be found in many areas of Northern Japan, especially in Hokkaido, and further into Kamchatka, Siberia and eastward into Alaska, but in its Japanese forms is a rough, coarse flower and is not esteemed here for that reason, although it is to be found in some botanic gardens." "Thanks to the untiring efforts of Dr. Hiro and the substantial financial backing of Mr. Kuribayashi of Shukisappu Gardens in Hokkaido, a long-awaited dream of the Japanese Iris Fanciers is fast becoming a reality in the form of a new book to be published later this year. Representing a fantastic investment of "several tens of thousands of dollars", this monumental volume will include well over 300 exquisite 7 $\frac{1}{4}$ " x 10" full colour plates of Japanese iris varieties, not only those bred here, but clones from all over the world, with text in Japanese English and German."

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IRISES FROM SEED TO FLOWER

The Committee

It would appear there are as many ways to handle seeds of iris species as there are those who plant them, and a survey of methods used reveals certain similarities and small variations from person to person. A look back through procedures that have been published concurs to a high degree with practices employed, naturally enough.

"Environmental factors, time of harvesting the seed in relation to its maturity, and planting procedures may influence germination. The depth of planting, customarily one-half to one inch depending on the lightness of the soil or planting medium (This is presumed to be for bearded irises: ED.) and provision for keeping the seeds moist from planting to germination, are other factors which may influence germination." Thus wrote Dr. Randolph in "Garden Irises". While we may experience certain degrees of success and satisfaction with various methods, it is the optimum success we are after, and therefore a look at the results might give a clue to easier successes and less disappointments.

Dykes observed that, "in accordance with the almost invariable rule among irises, the majority of the seeds of a given species will not germinate until the season of the year when normal active growth of the rootstalk will begin its active growth." Thus, unless we practice control of conditions in frame or greenhouse to a degree that appreciably alters the "climate", we can expect germination at a given time. Opinions that seed planted fresh from the pod without the pre-ripening that drying-off gives should be reserved for bearded and aril species, at least until further trials. The autumn germination thus gained may be lost to winter unless special protection of frames or greenhouse is available. Precooling and stratification have been advised; these afford controlled conditions of temperature and moisture that does not induce actual sprouting. Refrigeration in vermiculite or peat, moist but not wet, and in tight containers to conserve moisture is one controlled method of stratification. Another method is leaching in cold running water, but this is unwieldy except for a very few seedlots or special set-up. A common stratification method is employed by natural weathering of seedpots or flats outdoors through the winter, with removal to the house, frame or greenhouse about February or March, when germination will commence early. Freezing of the seed has not been proven to be beneficial nor has alternate warm and cold exposure. Acidity of the medium does not appear to affect germination, though certainly a neutral medium is likely safest. A mild acid fertilizer may be applied to those species known to fare best in an acid soil.

As to the actual constituents that go to make up the medium in which the seeds are to be planted, there have been many experiments and reports. Dr. Milton, writing in the B.I.S. Yearbook of 1956, sums up what many others have concluded, that vermiculite gives consistently high percentages of germination, and that planting from the pod without pre-ripening gives superior results with a variety of kinds of iris (unfortunately not possible with seed from a seed exchange), that decapping of seeds leads to earlier germination and possibly to higher percentages (not practicable with any but large seeds such as pogon and aril), that germination in a cold greenhouse is more satisfactory than exposure to wintry conditions, and that forcing by the use of bottom heat is harmful and to be avoided.

But whatever variations work best for someone, there is reason enough behind them if we look. Vermiculite is sterile; it does not hold water as tenaciously as does peat (also sterile, if fresh) and affords some aeration in the seedbed. Decapping (chipping off the hilum or stem-end) removes the constricting seedcoat and allows moisture to penetrate the seed freely. Drying seed, at least in some species, seems to develop a germination retarding factor in the seedcoat, doubtlessly for the protection of the species, and acting as a regulator so that it germinates at the optimum time, at least in nature. We can control temperature, light and moisture and so do not need a germination retardant, and certainly a frame or coldhouse is to be taken for granted as a convenience, wherein the climate can be regulated at least to some degree and to the advantage of the gardener and the seedlings; a back-porch will do it!

There is one other method, a modified stratification, that has given very good results with a variety of sorts. Leo Brewer has recorded his experience thus: "The polyethylene bag method of germination is a very easy and satisfactory one. Put about four inches of vermiculite

moistened but not wet, in the bottom of each bag and scatter the seed on top, fold the top over and fasten with a paperclip into which the label is also secured; put the bag in a dark place, into the refrigerator if you think cold is necessary for the species (though it is my experience that most irises do not need it), and after a month or two, when the leaves start to show, move them outside, stacked into a box in the shade (sun will heat up the bags too much). Most can be planted into the ground when the leaves are 2 to 3 inches long."

In the experience of many this first transplantation is the critical one and marks the greatest losses. It is of course necessary to be able to give protection from excess cold, wind and wet immediately following transplantation. Generally it is safer to make this first shift when the plant is quite young, rather than when it is too old. The time of year and the conditions of weather at any given time are critical. It is safer to carry seedpans over a year, undisturbed, than to move larger seedlings when conditions are not optimum. There are several ways of protecting an open bed to which seedlings have just been moved; first, of course, it should be lightly shaded for a period of time from the hot sun; it should likewise be protected from drying winds. A wetted burlap sack supported on stakes can accomplish both these protections; a sprinkling with the hose can increase the humidity within the shelter if it fall too low. In general all iris seedlings can utilize a great deal more water throughout the first summer than they will tolerate as mature plants; do not let them over-dry, feed them dilute amounts regularly of a balanced plant food, and decrease both water and food as the summer draws to an end and the cooler days of autumn slow down the growth-rate. A proper ripening will do more for the winter hardiness of your seedlings than the most complicated protections and mulches. In the second summer you should have them well enough rooted-down that they can stand the degree of normal baking natural to the species, and almost every one, even the water-loving species, will benefit from having the water withdrawn so that the rhizomes can "cure", a process that appears to instill the development of flower buds in the growing tips of rhizomes. Bulbous species will flower when the bulb has reached a given size; this size can be achieved sooner by planting them in a sheltered position so that growth is induced as early as possible and by feeding. One caution in handling bulbous seedlings: NEVER transplant in growth; wait until the plant is leafless and resting.

A good many other media than vermiculite have been employed with good results, even with 100% coming. There is no one BEST way for everyone or under all conditions. Peat moss, leached sawdust, pure sand, various composts, including old animal manures all can give good results. It is generally best to pay more strict attention to the soil into which the seedling is to be transplanted, provided the seedbed is loose to the extent that a well developed root system is produced, and for this purpose vermiculite is unexcelled.

Following is a brief guide to the growing of many types of iris species:

T refers to the TEMPERATURE FACTOR: T1 - tender to frost
 T2 - moderately hardy.
 T3 -hardy in the Rocky Mts., Northern U.S.A. and Midwestern U.S.A.

M indicates the MOISTURE FACTOR: M1 - water-loving, even in water.
 M2 - tolerant to fluctuation of water.
 M3 - must be dry in summer or lifted.
 (All species require large amount in spring, even those in M3.)

L indicates the LIGHT FACTOR: L1 - part shade is beneficial.
 L2 - will tolerate some shade.
 L3 - requires the fullest sunshine.
 (Most species are sun-loving; only *I. foetidissima* prefers deep shade.)

S indicates SOIL FACTOR: S1 - a light or sandy soil.
 S2 - any good loamy garden soil.
 S3 - prefers a stiff clay.
 (The pH of most soils is relatively unimportant; exceptions noted below.)

BEARDED IRIS -TB, MDB, SDB, MTB, IB, & BB: T3 (except subbiflora, mellita, pseudopumila, kashmiriana) M2 L3 S2 Drainage critical especially in DB; lime.
 HEXAPOGON - T2 M3 L3 S2 Plants of the near-desert in nature; lime.
 ONCOCYCLUS - T2 M3 L3 S2 Desert plants in nature; lime.
 PSEUDOREGELIA - T2 M3 L3 S2 Relatively little known alpine Asiatics.
 ARIL-POGON - T2-3 M2-3 L3 S2 Hybrid groups vary greatly as individuals.
 REGELIOCYCLUS - T2 M3 L3 S2 Inclined to be more desert-like; variable.
 PARDANTHOPSIS - T3 M2 L2 S2 May be short lived, flowering but once.
 FOETIDISSIMA - T2 M2 L1 S2 Foliage a shining green in shade.
 SIBIRICAE - T3 M2 L1 S2 Meadow plants in nature.
 CALIFORNICAE - T2 M2 L2 S2 Associated with woodland, but require light.
 SYRICAE - S3 Relatively little known desert-march plants. Lime & heat.
 CHINENSIS - S3 Almost unknown Asiatic meadow plants; cool S3; must not dry.
 RUTHENICAE - T3 M2 L3 S2 Likes a moist spot, possibly lime.
 UNGUICULARIS - T1 M2 L3 S2 Must bake in summer; do not overfeed; lime.
 SPURIAE - T2 M2 L3 S2 Large species react to heat; moisture; bake.
 LAEVIGATAE - T2 M1 L3 S2 Gross feeders; avoid lime with kaempferi.
 HEXAGONAE - T2 M1 L3 S2 React to warmth; only brevicaulis hardy.
 TRIPETALAE - T3 M1 L3 S2 Cool plants; tridentata reacts to warmth.
 LONGIPETALAE - T3 M2 L3 S2 Bake; longipetala not hardy.
 ENSATAE - T3 M2 L3 S2 Bake; very drought resistant.
 VERNAE - T3 M2 L2 S2 Dislikes lime and severe baking.
 EVANSIA Evergreen - T1 M2 L2-3 S2 Treat as semi-tropical. No lime.
 Deciduous - T2 M2 L2 S1 Woodlanders; sand for lacustris. No lime.
 (*I. tectorum*, *milesii* more light and a stiffer soil.)
 NEPALENSIS - T1 M2 L2 S2 Dry off in winter for longevity.
 XIPHIIUM - T2 M3 L3 S2 Bulbs. Give a warm spot.
 RETICULATA - T1 M3 L3 S1 Winter and early spring bulbs; shelter.
 SCORPIRIS (JUNO) - T2 M3 L3 S3 Overhead water causes rot; bulbs.
 GYNANDRIS, MOREA, HERMODACTYLUS etc. - Handle as reticulata; not hardy.

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FLOWERING SOME IRISES IN FRAMES

Roy Davidson

The advice of all the garden books on growing the Winter Irises (they are usually called the Stylosas in such books) is to place them at the bottom of a wall or foundation so that the reflected warmth therefrom will force them into winter bloom. This is all well and good and, in view of the fact that it is so often repeated, it must be sound advice. It would seem however, that this forcing might go just far enough to have the whole thing ruined by sudden freezing. The plants of this species are considerably hardier to frost than is usually conceded; just how much cold they will endure is subject to conjecture, and certainly among the many forms, gathered throughout its wide range in the Mediterranean Basin, there would be found to be a variance in cold resistance. But why risk it? Why not go all the way, and in addition to giving them that warm spot at the base of the garden wall, give them some real protection as well?

Quite a long time ago, and in a climate where the winters went to far below freezing and occasionally to zero for some days and nights on end, I constructed a frame for growing seedlings of various perennials in the following manner, and, it must be reported here, with great success. A depression some two feet deep and three feet wide each way, was dug into the ground and in this was inserted a wooden frame with double walls, the space between being stuffed with discarded fiberglass air conditioner filters; the top of the box was a few inches above ground level and was covered with a glass pane. Into this box was put a suitable soil mix and the seeds were sown in the autumn. Leaves were heaped around the box and dug loosely into the topsoil around it to give a fluffy air-pocketed insulation blanket up to the level of the boxtop. When cold weather came, the glass was covered with layers of fiberglass for further insulation.

In adopting this system to growing irises, I would advise the same construction, with the exception that the box need not be sunk into the ground, the same heaping of leaves loosely for insulation and the same cover of glass with a further cover of fiberglass in freezing weather. It will not be possible to enjoy this arrangement as part of the winter landscape of course, but the buds, in favorable weather, will be elevated into their long stem-like tubes, when they can be taken inside for display of the bloom.

I would wager that this method would prove successful into Zone 6 or 7, and probably into colder areas. Just which forms of this iris are to be recommended is not yet known; possibly a good many of them would prove to be successful and, through having several forms, one could have bloom over a longer season. Remember that too large a box, as well as one too small, is not going to prove satisfactory, although the exact size is not of such great importance. It might be well to make it in sections, each side separately, so that it could be held together with a series of hooks and eyes, two at each corner, thus facilitating removal and easy storage in all but the coldest weather. You don't want to see that box at the base of the garden wall all year round.

I now garden in a milder climate, where I can flower this species

out-of-doors most years, but it might just prove a good protection for such things as the tender Evansias, which in my climate want to grow with every mild period, to inevitably be cut back by the next cold period. Be sure to bait for slugs and snails, who are going to assume you have built this wonderful shelter for them alone and have given them marvelous delicacies to feed upon!

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SEED MORPHOLOGY IN EVANSIAS

Marjorie Barnes
Roy Davidson

Before the 1968 seed harvest is too far in the past, and before SIGNA comes off the press again, I wanted to ask about the odd, translucent process I find on all the freshly shelled seed of I. cristata. In so far as I can tell, with nothing more powerful than an ordinary magnifying glass, this isn't particularly concerned with the attachment of the seed within the pod. On some seeds it has a free end and on others it is curled almost aril-like, only in horseshoe fashion, rather than as a complete collar.

When I have opened pods that haven't begun to open by themselves, the turgid, curled process seems to respond like an organic spring, popping the seeds out. Perhaps this explains why I seldom find seed in an overlooked pod that has had a chance to dry on the stem. If the seed is dried off, the process shrivels, but it does not disappear; it just remains to contribute to the raggedy-tag look of the seed, swelling to something like its previous dimensions if the seed is soaked before planting.

I wonder, since I currently do not grow any other crested iris, if the others in the Evansias are similarly endowed? I could not find any description of the seed of I. lacustris except that Dykes said they were "like those of cristata". I was therefore quite interested to receive a few and to be able to study them. They have that soft, watery raphe (I suppose it is so-called) that extends out at one end in a curly little arm, and on drying it becomes shrunken and contorted. What appeared to be a different aspect one year didn't prove consistent with seed from the same plant a second year, except that the seeds are smaller than those of I. cristata and more tear-shaped, the seed of cristata being more nearly round.

Some research in the fine-print of a botanical glossary has shed a little light on the structural nature of the iris seed and its capsule. Seeds are of course, rather moulded by the organs which bear them, and there are certain truths which are not variable, others which may be circumstantial. Iris ovules are without exception axile and anatropous, which means they are attached to the central "spindle" of the ovary by the funicle, but that they take an opposite direction to what might be supposed, the funicle extending alongside the ~~ovary~~ ^{ovule} allowing it to take a reverse position; in other words the funicle end is pointing away from the axile placenta (the "spindle"), or towards the outer wall of the ovary, in what is called an "anatropous" position. When

the ovule swells in growth to mature a seed, the funicle may be crowded into fusing with the outer seed-coat (testa); they are then said to be adnate. On maturity the capsule splits (dihisces), revealing the seed, and the dry appendage that was the funicle is now called a "raphe" and the point of attachment is now known as the "chalaza". This is all quite different from an aril, which is thought to be the vestigial remnant of another seed-coat or testa, and is evident as a partially enclosing cover. The function of arils may be absorptive, to store moisture toward the germination process. As to whether a raphe may assist in propelling seed from the capsule; certainly under such pressure the contents of the capsules do assist splitting and self-escape.

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SPECIES IRIS STUDY GROUP OF THE AMERICAN IRIS SOCIETY

INTERIM FINANCIAL STATEMENT

January 30, 1969

RECEIPTS:

Membership subscriptions:

49 1 yr. @ \$2.00	\$ 98.00	
69 3 yr. @ \$5.00	345.00	
3 3 yr. @ \$5.00 (renewals)	<u>15.00</u>	
		\$ 458.00

Seed Exchange:

Receipts in 1967	\$ 135.56	
Receipts in 1968	<u>217.30</u>	
		\$ 352.86

Direct sales of publications:

61 Cohen Monographs @ \$1.00	\$ <u>61.00</u>	
		\$ <u>61.00</u>
		\$ 871.86

EXPENSES:

Printing and mailing SIGNA # 1	\$ 63.96	
Printing and mailing SIGNA # 2	88.60	
Seed exchange 1967 season	133.85	
Seed exchange 1968 season	93.55	
Chairman's office expense	20.01	
Secretary's office expense	<u>26.98</u>	
		\$ 426.95
		<u>444.91</u>
		\$ 71.86

RESERVES:

NOTE:

Some of the reserves are still held at the date of publication by our former Secretary, Betty Rowe, and until the transfer to Freeman Yendall is complete only an interim statement is possible.

QUESTIONS PLEASE

"HE THAT NOTHING QUESTIONETH, NOTHING LEARNETH." Th. Fuller, 1608-1661.

Q. What is this about I. ensata and I. kaempferi being the same? Dykes describes them as two unrelated species.

A. Hopefully this knotty little problem will be straightened out with the meeting this year of another International Botanical Congress. It is not to be understood that anyone considers the two species the same, only that the name, ensata, is being used for two quite different plants. The Japanese insist that the plant that was described by Thunberg as I. ensata was in reality what is now being called I. kaempferi as defined by Von Siebold, in which case ensata is correct, thus necessitating another name for what we know as ensata, and which would then be I. pallassii as applied by Fischer. Rodionenko sides with us in calling the water plant kaempferi and the arid plant ensata.

Q. Would someone please enlighten me on what difference I should expect from two seedlots plants, one as I. hookeri and the other as I. hookeri Penny. The second one was also labeled setosa canadensis, which I know to be another name for hookeri.

A. There is no inferred difference between the two seedlots; the "Penny" refers to the botanist who applied the name. In print, the binomial (I. hookeri) appears in italic typeface and on the typewriter we underscore it, each to indicate it is in Latin; the name of the author is not differentiated, to indicate it is not Latin. This is sometimes confusing at first because there are clonal names with which the author's name might be confused and this is what has been assumed here. To set clone names off from author's names the clone is enclosed in single quotation marks. As to the synonymy of R.C. Foster's name canadensis as a variety of setosa, the latest revision of Gray's Manual of Botany persists in using Penny's name, thereby giving the plant full species rank, whereas under Foster's name it is a part of the species I. setosa. It would be interesting if someone would attempt to mate this plant with other setosa to give us some further idea of just how near or far they are in relationship.

Q. One of my neighbors insists that her Mexican Shell Flowers are irises because she read it was so. Is it an iris or was it once considered to be? She insists she read it was correctly I. tigridia.

A. There are a lot of confusing circumstances surrounding the names of plants and in irises thankfully there is a minimum of the sort of mixup this question represents. I can think of two parallels, so will discuss both of them in answering the question. Within the Iris Family (Iridaceae) are many genera (plural of genus) of plants including, besides the genus Iris, the genus Tigridia (commonly called Mexican Shellflowers) and the genus Sisyrinchium (commonly called Blue-Eyed Grass). Within the genus Iris are two species named respectively I. tigridia and I. sisyrinchium, and they are not shellflowers or blue-eyed grass. Their only relationship is that they all belong to Iridaceae. It is just a duplication of the name.

Q. Is I. pumila or pumilae correct? I find it both ways in SIGNA, or is this a typographical error?

A. Glad you brought this up and sorry for the confusion. I. pumila is the species name given by Linnaeus. The system of classification that has evolved since the time of the Father of Botany has sort of complicated his simple system. Not only the genus and species names, but a whole set from subgenus, section, subsection, etc., are employed in classification so as to best reflect the relationship of the members involved, necessary in so large a genus as is Iris. Some of these categories include the TYPE plant on which the name is based, and these may derive names from the TYPE; thus the dwarf bearded group becomes PUMILAE from I. pumila, the TYPE. If we were to be entirely correct when using the word "pumilae" we would precede it with the word "Series" and gain in clarity of meaning. It is pronounced POOM-illee or PYOU-millee. The specific name is pronounced similarly, with a quick, short "a" sound.

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NEW MEMBERS

Additions to list in SIGNA # 2

Alice, Mrs. Ada S.	Rt. 3, Box 560, Port Angeles, Wash. 98362
Allen, Foster M.	615 - 34th, Washougal, Wash. 98671
Blankinship, Keith W.	12030 - 8th NE, Seattle, Wash. 98125
Bond, Mark	Box 72, High Rolls, New Mexico 88325
Brewer, Leo	15 Vista Del Orinda, Orinda, Calif. 94563
Brown, Mrs. Rex P.	12624 - 84th NE, Kirkland, Wash. 98033
Brown, Tom & Opal	Rt. 4, Box 26, Walla Walla, Wash. 99362
Burch, Mrs. Ray A.	1605 S. 5th Ave., Yakima, Wash. 98902
Canadian Iris Society	c/o Librarian, Mr. O.L. Kummer, 997 Vine St., Preston, Ont.
Craig, Jack	335 Nanatsu, Shinya, Shizuoka-shi, Shinyuoka-ken, Japan
Dugger, Leonard P.	9080 San Gabriel Rd., Atascadero, Calif. 93422
Egli, Dr. Robert H.	Avenue de Sully 67/CH, 1814 La Tour de Pielz Switzerland.
Fisko, Adam	327 Park Ave., Wilmette, Ill. 60091
Folley, Curtis O.	Route 3, Box 277, Elkvicw, W. Va. 25071
Ford, Mrs. Freida M.	1737 N.E. 69th St., Seattle, Wash. 98115
Hamblen, Mrs. Melba	2778 West 5600 South, Roy, Utah 84067
Hille, Mrs. Ester R.	Box 51, Ralston, Wash. 99165
Hubbard, Mrs. W.R.	902 San Francisco, Olympia, Wash. 98501
Keppel, Keith	P.O. Box 8173, Stockton, Calif. 95204
Lee, Dr. Robert E.	2 Great Oak Dr., Short Hills, New Jersey 07078
McGarvey, Dr. William G.	State University of New York College at Oswego, New York 13126
McLaren, James	Box 4439, Huntsville, Alabama 35802
Murray, Edward	70 Kraft Lane Kenwood, Levittown, Penn. 19055
Padavich, Mrs. Frank	North Bend, Wash. 98045
Penberthy, Mary	3829 N. Grove, Tacoma, Wash. 98407
Pederson, Mrs. Grace	12804 - 84th NE, Kirkland, Wash. 98033
Peterson, Mrs. Henry	616 Whittier, Port Orchard, Wash. 98336
Ray, Mrs. Albert	Route 1, Box 74, Mabton, Wash. 98935

Rhodes, Mrs. Wm. M.	2926 Porter, Wichita, Kansas 67204
Richards, Richard C.	P.O. Box 433, Mt. Baldy, Calif. 91759
Ritchie, Mrs. Jayne K.	4007 Darby Court, Huntsville, Alabama 35810
Roe, Mrs. Audrey C.	29130 Triunfo Dr., Agoura, Calif. 91301
Ross, Mrs. Charles	1337 Tell Ave., North Burnaby, British Columbia
Rutten, M.P.	5 Inee St. Exupery, 72 Le Mans, France
Smith, Robert R.	130 Jennie Dr., Pleasant Hill, Calif. 94523
Snell, Mr. & Mrs. Wm. F.	Rt. 1, Box 183, Outlook, Wash. 98938
Stinson, Mrs. Wynnaline	2035 Alhambra St., Dallas, Texas 75217
Thomas, Raymond	255 N. Routiers, Indianapolis, Ind. 46219
Warner, Mrs. Eileen	Route 1, Box 456, Applegate, Oregon 97530
Weed, Mrs. Melvin	7217 - 27th NE, Seattle, Wash. 98115
Hitz, Mrs. Gifford D.	5330 Jed Smith Rd., Calabasas, Calif. 91302

CHANGE OF ADDRESSES

Peterson, Mrs. Henry	616 Whittier, Port Orchard, Wash. 98336
Ross, Julian M.	402 Mountain Gap Rd., SE Huntsville, Alabama 35803
Whitehead, Mrs. Diane	R.R. 1, Duncan, B.C.
Swearengen, C.A.	7548 Bono Road, Terra Haute, Ind. 47802
Austin, Fr. W.P.	c/o St. Gabriel's Church, Rutherfordtown, N.C. 28139
Dukes, Wm. J.	12055 - 80th So., Seattle, Wash. 98178

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BRITISH IRIS SOCIETY SPECIES GROUP

Bruce Richardson

The following are selected items from the Bulletins issued by the B.I.S. Species Group in 1966, commencing with Bulletin # 3 dated April 19th. It is not your Editor's intent to try to cover everything that happened at these meetings as they are reported from time to time, as they make fascinating reading in their entirety, so only the portions published here are those that our members are unlikely to find elsewhere, and much valuable information about the more common species is omitted if it is considered to be readily available here in North America. For this reason many of the excerpts will seem disjointed as only the meat is intended to be found here.

Irises nicolai and rosenbachiana.

Mr. Anderson has written to say that he disagrees with the Bot. Mag. (and Kew) that these are synonymous. (a) They flower at different times (b) also he has failed to set seed on crosses between them; unless the chromosome numbers differ they should cross. He is going to enquire into this aspect.

Mr. Killens also felt that these were distinct.

Mr. Eliot Hodgkin also agrees that horticulturally the two plants are very distinct, both in colour and time of flowering. He continues

"according to the Russians, they are both endemics (very doubtful) but if botanically they are the same species, one ought to be made a variety of the other". Mr. Anderson's point about being unable to cross them is at least an indication, though this is not proof of their being separate species. (In fact a chromosome count would not necessarily provide absolute proof.)

Dr. Bate-Smith of the Low Temperature Research Station, Cambridge, says that, although he is able to distinguish irises of different sections by the phenolic constituents of the leaves, his methods, (using paper chromatology) would not serve as a taxonomic guide in the case of these species which are both Junos. (A method to be kept in mind for the future, perhaps.)

The answer may well still lie in the Kalifghan Pass in Kataghan, and be one step nearer solution when Admiral Furse returns this year.

Statellae (Todardo) Baker.

Stem 22cm. unbranched; 2-flowered; flowers ivory or greenish-white with tucked in falls. Blooms in April. Spathes green, membranous, clasping and not keeled.

$2n = 40$ or 44 . Fertile for pods or pollen.

Origin obscure; alleged to be a seedling from the Palermo Botanic Garden, but reported growing wild in Sicily. Possibly a natural hybrid of I. pseudopumila. A hardy free-flowering plant. Widely grown and of easy culture in any sunny well-drained soil. It meets with general admiration and approval. No record of fertile seed from its own pollen, by growers who would play Pandarus.

Species unknown to Members at the meeting.

Printed for reference in case any of these should present themselves.

Aequiloba, Ledebour

Stem 2-3 cm. long, leafy; flowers lilac or yellow, the six segments have long hafts; leaves slender, sickle-shaped; spathes long and slender, mostly green-herbaceous, perianth-tube 7.5 - 8 cm.

Closely allied to I. pumila. Crimea and Volga region of S. Russia.

Barthii

An unpublished name, attached to a dwarf bearded seedling obtained by Hanselmeyer from the Cluj Botanic Garden, Roumania. 15 cm. tall, flowers yellow, lavender blue beard, 10 days later than pumila.

Origin considered to be (I. aphylla x I. pumila) back crossed back to I. pumila. Pod parent to the variety 'Laurin', yellowish brown flowers.

Bosniaca Beck (reichenbachii complex)

Stem 10 - 25 cm., unbranched, usually one-flowered, variable.
 $2n = 24$ diploid. April - May. Yugoslavia and Bulgaria, granite formations.

Chalkadiki or Chalcidice

Unpublished name, collected in Greece, growing in contact with I. attica. Stem 20 - 25 cm., flowers yellow, purple, variegatas and blends. $2n = 24$ diploid and $2n = 48$ tetraploid forms. Flower forms and spathes resemble those of the reichenbachii complex. Synonymous I. macedonica Nadj.

Griffithii Baker

Stem 15 - 20 cm., one-flowered, flower purple. April - May. Spathes long, slender, herbaceous. Rare, endemic in Afghanistan.

Kobasensis Prodan

Stem 12 - 14 cm., one-flowered, yellow. Said to be intermediate between large chamaeirs forms. e.g. virescens and bosniaca. Doubtful validity as a species. Bosnia, Yugoslavia.

Panormitana Todardo

Similar to I. pseudopumila only larger. No description available.

Pluriscapis Prodan

Stem 5 cm., leafy, flowers yellow, spathes long, green, the outer keeled; perianth-tube 7-8 cm. The young extremity of the rhizome produces laterally about 10 flower-stems.

Origin unknown. Cultivated in the Cluj Botanic Garden, Roumania. Closely allied to I. pumila.

Reichenbachii Heuffel.

Stem 18 - 27 cm., leafy unbranched, 1-2 flowered, lemon-yellow or brownish-purple. April - May blooming. Spathes distinctive green-herbaceous, long-pointed and acutely-keeled. Plant deciduous. Diploid $2n = 24$. Tetraploid $2n = 48$.

Variable - central to a complex. Distribution essentially Balkans. Distinct varieties: athoa, tenuifolia, dauidoffii.

Sarajevoensis Prodan

Stem less than 2 cm., leafy. Flowers violet and blooms in March. Capsule large and elongated, 7 cm. long. Outer spathe-valve large, mostly green-herbaceous, inner valve membranous. Perianth-tube 5-6 cm. Leaves glaucous. Bosnia, Yugoslavia. Closely allied to I. pumila.

Scariosa Willdenow ex Link

Stem 15 - 30 cm., simple, leafy, 2-flowered, lilac to red-violet veined bronze or red-brown, beard white tipped violet. Blooms April - May. Spathes long-pointed, pale green and membranous, keeled. Leaves sickle shaped and glaucous. Native to Western Siberia, Soviet Central Asia, Sinkiang and Mongolia.

Serbica Pan.

Stem 24 cm. simple, leafy, 1-2 flowered, lemon or greenish yellow, beard orange, blooms April - May. Spathes herbaceous, slender and 4 cm. long. Diploid $2n = 24$. Distinct and of the *reichenbachii* complex. Range Serbia, East Yugoslavia on limestone formations.

Sauveolens Boissier & Reuter

Of doubtful validity, as some collected species have been identified as pumila or mellita (within pumila variation?). Described as a very dwarf plant with small flowers scented like *Asperula adorata*. Butter yellow with a darker spot on the falls. Stem usually one-flowered, spathes herbaceous. Dobrudscha, East Roumania.

Timofejewii Voronov

Stem 15 cm. not leafy, one-flowered, flowers violet, hafts of the segments yellow. Blooms in April. Spathes long, green-membranous with violet veins, keeled. Leaves glaucous, sickle-shaped. Diploid $2n = 24$. Daghestan region, Eastern Caucasus.

I. thungerii Ludstron

With reference to an enquiry by Mr. Dyte in February this year (1966), concerning *I. thungerii*, Dr. & Mrs. Ellis have found the original description by Ludstron 1914 Act. Hort. Berg. V. 111, 16. The species is related to siberica and orientalis. The original description is accompanied by a figure and a hybrid of thunbergii and siberica is described.

This plant has been sent from Japan by Mrs. Brough under the name *Kamayama*, and is now in the possession of Mr. Dyte and Mrs. Marchant. A garden plant only in Japan, it is a native of Korea.

Mr. Luscombe points out that I. kumaonensis is now corrected in botanical publications to kamaonensis, and that it is now accepted practice to begin all species names with a small letter, even those derived from a person or place.

ED: The B.I.S. Species Group put out a list of sources for species in England, which covered 30 nurseries and a very complete listing of species. Below is listed a partial listing, covering the rarer forms that might prove difficult to obtain here. Types considered readily available in North America are omitted. Numbers after the species names are to indicate the name of the nursery.

<u>albo-marginata</u>	11	<u>orientalis</u>	3
<u>clarkei</u>	22	" <u>sanguinea</u>	10; 21
<u>confusa</u>	10	" <u>Snow Queen</u>	10; 21
<u>farreri</u>	11	<u>pallida dalmatica</u>	12; 26
<u>filifolia</u>	18; 22	" <u>alba-variegata</u>	27
<u>gormannii</u>	10	" <u>aurea-variegata</u>	27
<u>kamaonensis</u>	8; 21; 22	<u>perica var. issica</u>	15
<u>minutoaurea</u>	7	" " <u>sichana</u>	15
<u>orchioides</u>	18	" " <u>tauri</u>	15

Pseudacorus bastardii	6; 18	sinten-sii	7; 21; 23
" Golden Queen	18	tingitana	29
" variegated leaf	17; 27	tridentata	1
ruthenica	11; 10; 12; 14; 22	unguicularis	superba 13
" uniflora	12	"	alba 30
setosa	tricuspis 11	"	lazica 7; 21
" dwarf form	8; 23	"	cretensis 7
sindjarensis	18	winogradowii	5; 18

- 3- Bressingham Gardens, Diss, Norfolk
 5- F. Buglass, Green End, Leverstock Green, Hemel Hempstead, Herts
 7- Davenport-Jones, Miss H., Washfield Nurseries, Hawkhurst, Kent
 8- Jack Drake, Inshriach Nurseries, Aviemore, Invernesshire
 10- Hilliers & Sons, Winchester, Hants
 11- Holden Clough Nurseries, Bolton-by Bowland, Nr. Clitheroe, Lancs.
 12- Ingwersen W.E. Th. Ltd., Birch Farm Nurseries, Gravetye, East
 Grinstead, Sussex
 13- Geo Jackman & Son, Woking Nurseries, Woking, Surrey
 14- Reginal Kaye Ltd., Waithman Nurseries, Silverdale, Carnforth, Lancs.
 15- Lt. Col. J.A. Mars, Derrcen, Bell Vale, Haslemere, Surrey
 16- Norton Hall Nurseries, Cold Norton, Essex
 17- Old Court Nurseries (Ballards), Colwall, Nr. Malvern, Worcs.
 18- The Orpington Nurseries Co. Ltd., Rocky Lane, Gatton Park,
 Reigate, Surrey
 21- Maurice Prichard & Sons Ltd., Riverslea, Christchurch, Hants.
 22- J.R. Ponton, The Gardens, Kirknewton, Midlothian
 23- Robinsons Hardy Plants, Greencourt Nurseries, Crockenhill, Swanley,
 Kent
 26- Sunningdale Nurseries, Windlesham, Surrey
 27- Thompson & Morgan Ltd., Nurserymen, Ipswich (seeds only)
 29- John Waterer Sons & Crisp Ltd., The Floral Mile, Twyford, Berks.
 30- Messrs. Garnette Holding, 32, Eldon Road, Luton, Beds.
- NOTE: All the above addresses are in England.

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NOTES FROM THE INTERNATIONAL ARIL SPECIES ROBIN

Bruce Richardson

The below are somewhat random notes taken from a robin that passes through here about once a year, the last time in November of 1968. All live in England except Roy Brizendine. It is the wish of your executive that many more extracts from species robins can be obtained for printing in SIGNA, as the information and thoughts in these robins are usually quite advanced and this is an ideal way to create interest and keep our members up-to-date with iris lore.

Ken Bastow Oct. 25, 1968.

Unusual weather for England; hot, dry early spring, a dull wet summer, followed by a warm and wet autumn. Good sets of seed obtained after good flowering. Of the new collected plants, the most noteworthy were P.F. ewbankiana, fine greenish dwarfs of immaculate form, a curious green-falled urmiensis and a red, presumed natural hybrid, of polakii and paradoxa choschab. Also had a new regelia of P.F. with pale yellow

standards, and darker red-lined falls bloom (which rebloomed in Kent) and is regarded as a new species.

Experience with demawendica is that it resents being moved, and may die out with lifting after two or three years. It comes from a high altitude, 8-10,000 ft. where the winters are hard, with likely complete snow cover for several months. It is very sensitive to excess moisture or excess drought. One dwarf form is completely stoloniferous with runners 3-4" long and bluer flowers.

The onco with the longest bloom season is I. paradoxa choschab, which in Kent bloomed for six weeks.

A moleskin iris is one of very variable colour, small stature, and rather narrow segments from Iran, which has a black beard. They grow over an area of several hundred miles in Kurdistan.

It is assumed that the only I. meda collected by Furse was (1483) and this is a difficult plant to grow and very rare.

I. sprengeri and I. elizabethae are described as small iris like dwarf sari, with big bushy, whitish or yellow beards and yellow segments variously lined, blotched or otherwise marked with anthocyanin to give red or red-brown or violet markings.

Peter Dyte Sept. 12, 1968

Tested I. urmiensis and determined it to be a plastid yellow, (which most yellows are, except that sap yellows occur in the pumilas). Enclosed a slide labeled I. paradoxa Julfa '66 (Paul Furse's Julfa Gold paradoxa). Collected at Julfa in Northern Iran near the Russian border, and has turned out to be something like the form of paradoxa the Russians call mirabilis. It is an albino form, the anthocyanin having been eliminated in the standards, the style arms and the beard.

On the falls the background anthocyanin has gone and one is left with only the signal and main veins. (The slide is Peter's but the description came from Ken Bastow's letter; the effect was most startling and unusual. I certainly hope this one can be increased).

Angela Marchant Aug. 21, 1968

Pseudoregelias: I. kamaonensis seems to do best in a fairly moist place which gets a certain amount of shade in the summer from larger leafed plants behind. I. humilis flowered and increased in almost pure sand. No winter care seems needed for any of them.

Definition of beards: MOLESKIN; matted and flat. UNSHAVEN CHIN; diffuse separate hairs as in helna, ewbankiana, lycotis. FLUFFY; ruffled as in pogan iris, also as in demawendica, meda, sprengeri and urmiensis.

Barbara Clough Aug. 8, 1968

23 oncos under number from the JCA, M&T and C.M. & W. expeditions bloomed in 1968. These stayed green all the previous summer, suffered no ill effects and JCA 2234 (paradoxa var. choschab) had 25 blooms. The past winter was unusually mild with no prolonged frost.

Roy Brizendine

Among the northern oncos that did bloom, one of the Archibald Expedition urmiensis was a very deep gold, with a rather large orange spot; I think it was 2220-D. The turkish elegantissima bloomed with two stems to a plant and was so different from the Russian one (which was almost black and white), while the one from Turkey had deep cream to yellow standards, and almost a red-brown fall. sari was a mixture of many colours with the haft a deep "grass green" colour. The gatesii imported direct from Turkey did not bloom as well as I had hoped, but it was a beautiful form; some much darker than others, and very fertile both ways. sari was probably the most fertile of all onco species although the plants of auranitica were very pollen fertile, and I have at least 30 pods from such crosses.

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EDITORIAL COMMENTS

Bruce Richardson

With this issue our new Secretary-Treasurer, Mr. E. Freeman Wendall takes over his new duties and has already shown his ability in producing our first computerized membership list. Unless the machine slips a gear somewhere, nobody ought to be missed from here on. Freeman lives on the outskirts of Buffalo in Kenmore, is a native of Michigan, and a graduate of Michigan State University. His occupation is research chemist for the Linde Co. He knows oncoregelias and embryo culture, along with chromosome counting, which was taught him by Mrs. Randolph and Dr. Kay Heinig. He does the counting for the Median Society and is currently experimenting with colchicin for himself and others, working on species as well as diploids.

Among letters received, Mr. C.A. Swearngen, 7548 Bono Rd., Terre Haute, Ind. 47802, mentions he is a source of brevicalus, tectorum, setosa and ensata. Has some lacustris, but not enough to sell as yet.

I had expected to be sending you the first of the SPECIES MANUAL series before this issue of SIGNA, but it definitely will be the next publication. Roy has spent a great deal of time and effort on it to ensure it being complete and authentic, so it should be well worth waiting for.

We have heard a lot about the Pacific Coast irises in recent issues, so the next issue will have a change of locality. A few weeks ago I had the pleasure of reading the garden diary of the late Mr. F. Cleveland Morgan, covering the growing of a wide range of species in the Montreal area from about 1914 until a year or two before his death in Oct. of 1962. Like all garden notes intended for one's own use they are often far too brief, but many clues are to be found in them as to the growth habits and hardiness of many species in this northern area. I hope you will enjoy reading them as much as I have.

Like all publications, SIGNA is a sinkhole for material; too bad it can not be used over and over! Roy has contributed much to this issue and the previous ones, but can't do it all alone indefinitely. HELP!