

IRIS SETOSA, THE COLD-RESISTANCE CHAMPION

By Dr. G. Rodionenko – St. Petersburg, Russia

DISTRIBUTION RANGE

The species is enormous. It occurs in the wild on two continents, in northeastern Asia and northern North America. When determining the precise limits of its immense range, I had to use both my own observations and information from numerous publications. Used as a supplementary source was the information on this iris occurrence, gleaned from letters of my numerous correspondents and talks with many botanists and travelers. The information gathered allows several conclusions.

The first of them concerns the northern limit of the genus *Iris* range. In the original scheme shown in Figure 1, its boundary runs across the Asian continent. The newly gathered information enables it to be changed as shown in the Figure 2.

The second conclusion lies in the fact that in its voyage northwards *I. setosa* not only left behind all the rest of the *Iris* species, but also all the species of *Iridaceae* family (perhaps, except for some species of the genus *Sisyrinchium*).

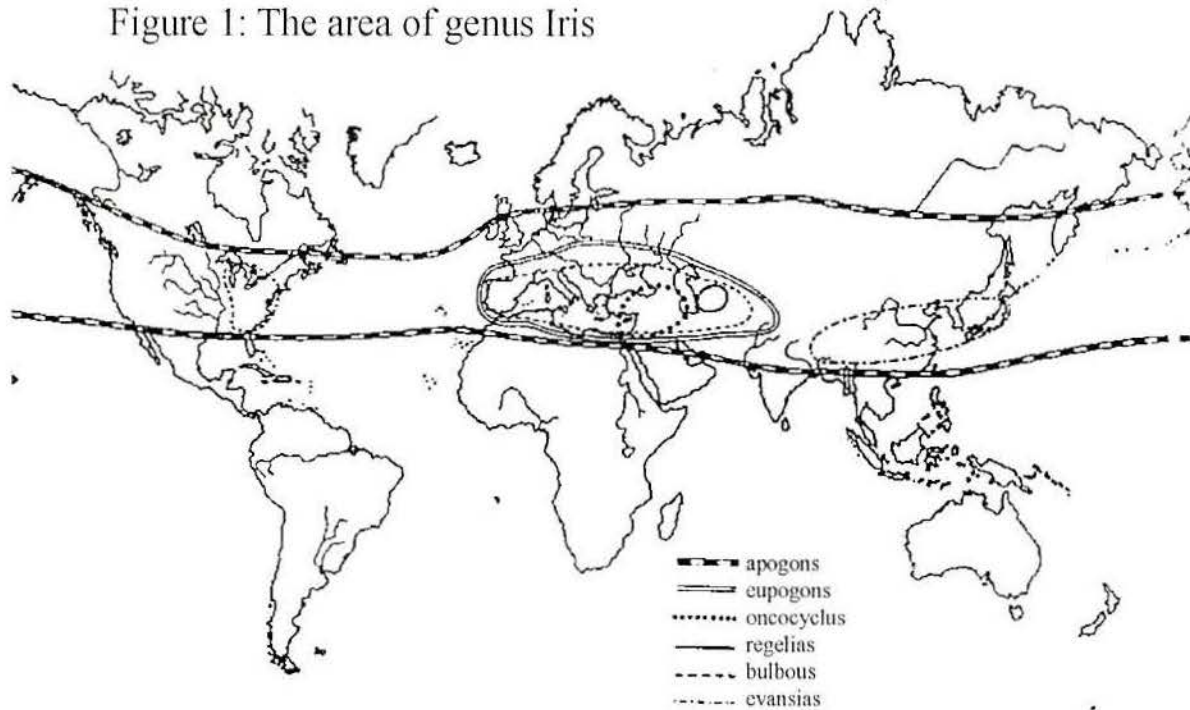
STRUCTURAL AND BIOLOGICAL PECULIARITIES

The question arises: which of the biological and structural peculiarities, inherent to *I. setosa*, enabled its penetration into the extremely severe conditions of the North?

Among structural, or morphological as they are called, peculiarities, the structure of its seed capsules deserves close attention. The capsule is a bladdery thin-walled chamber, in its center small one-sided seeds, which are firmly attached to the placenta (Figure 3). There is a sufficiently large air space between the seeds and the capsule wall, and air is known to be an excellent heat insulator. This enables the seeds to tolerate frosts which occur rather often during the growing season in the extreme North. After ripening, the seeds fall off from the placenta, so the capsule, when shaken, sounds like a baby's rattle. This peculiarity, as far as I know, is unique to the capsules of *I. setosa*.

In addition, I have found repositories, filled with a secreted substance. Its composition is similar to polymerization products of tannic substances, which have protective properties against low temperatures as well as fungal and bacterial infections.

Figure 1: The area of genus *Iris*

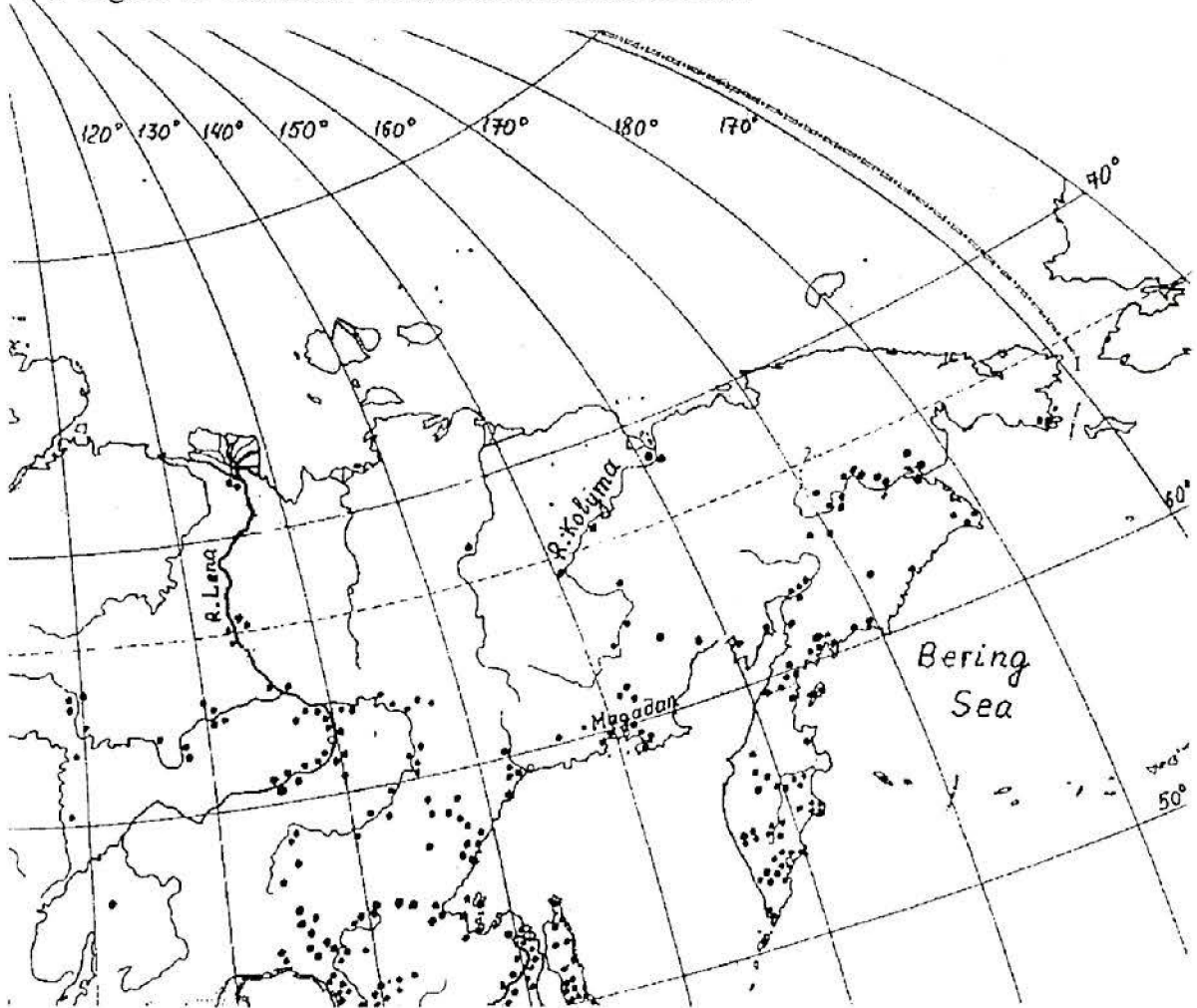


Apart from the seed protection, the capsules of *I. setosa* are able to participate in their dissemination after ripening. In the extreme North, strong winds, so-called "buran" (snowstorms) quite often take place. The capsules, even at the stage of the full maturity, are ajar at their top only. Most of the seeds remain in their capsules, and the latter, by virtue of their lightness, can be born away by wind for long distances.

However, the main method of seed dissemination is a hydrochory (dissemination by water flow). In our experiments, seeds of *I. setosa* retained their ability to float for over 200 days. That is why its habitats are usually related to river valleys.

While causes of the flower tripetality, typical for the present forms of this species, are under discussion, it should be noted that it probably was a response of their ancestral forms to the climate sharply growing colder. Plants developing under extreme conditions come under the influence of the law of the substance saving. Action of this law in the process of adaptive evolution leads to reduction of organs the least important for plant life. In this particular case, those are the standards, which play a minor role. The flower of *I. setosa* have retained the ability to function normally even after the complete loss of the standards. At present, however, forms can be found among populations of this species, where the process of the standard reduction is not yet complete.

Figure 2: Northern Border of *I. Setosa* in Asia



My hypothesis on the causes of the tripetality origin in the flowers of *I. setosa* is to some extent confirmed by research of E. Anderson, who studied falls and standards in the flowers of *I. virginica* and *I. versicolor*¹. He recorded a decrease of the standard size relative to the fall size when the species moved forward into more northern conditions (Figure 4).

The work by E. Anderson is very interesting as a whole, but I can by no means share the author's conclusion concerning the origin of *I. versicolor* as a result of hybridization between *I. setosa* and *I. virginica*. *I. setosa*, an Asian species by its nature, possesses a number of characteristics lacking in the two other species. The structure of both its capsules and seeds demonstrates qualitative rather than quantitative distinctions from the seed and the capsule structure of *I. virginica* and *I. versicolor*. It is my strong

¹ Anderson, Edgar. The Species Problem in *Iris*. In: "Annals of Missouri Botanical Garden", 1936, vol. XXIII, p. 457-509.

conviction that the species under comparison have different ancestors and different evolutionary-genetic origins.

Under extreme northern conditions with a short vegetation period, only plants with an accelerated development survive. Our "northerner" has attained perfection in this respect as well. Formation of its capsules and ripening of its seeds take place extraordinarily quickly. Although cross-pollination is a peculiar crown of evolution, plants under severe conditions of the North are far from being always provided with insect pollinators. As our experiments with macroisolators have shown, self-pollination is also typical for the flowers of *I. setosa*.

TAXONOMY

The cradle land of ancestral forms of *I. setosa* most probably lies in one of the northeastern regions of Asia. Everything points to the fact that this iris could not come to being in subtropical or temperate zone. Even its populations occurring on the islands of Japan reach the top of their development in the cool subalpine belt. The historical age of *I. setosa* is very old, since its ancestral forms could penetrate the North American continent only in those times, remote by millions of years, when there existed the-so called Beringian Land, joining the two continents.

This species, which has been in existence for many millions of years over such a vast area, under different climatic and soil conditions, could not remain uniform. Since the time of its finding (*I. setosa* was discovered by the Russian botanist P. S. Pallas in 1820), taxonomic botanists have described nine forms and varieties characterizing *I. setosa*. Some of the varieties were raised to the rank of a separate species. In the book "The Iris" by B. Mathew (1990) all the nine taxa are described at the rank of infraspecific forms. I quite agree with such a decision by B. Mathew.

The question is difficult concerning the degree of relation of *I. setosa* to the rest of the *Apogon* irises. While in *I. pseudacorus*, a tripetalous iris as well, genetic relations to the rest of the series *Laevigatae* species are clearly traced, no genetic relation of *I. setosa* can be traced either to the series *Laevigatae* species, or even to *I. tridentata*, the latter being placed to the same series *Tripetalae* as *I. setosa*. By peculiarities of the seed and capsule structure, *I. tridentata* is more closely related to the species of the series *Laevigatae*, and I intend to remove it from there. As to the series *Tripetalae*, it should be left monotypic, with the one species *I. setosa*.

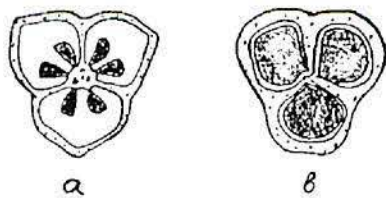


Figure 3:
Diametrical cut of seed capsule of *I. setosa*

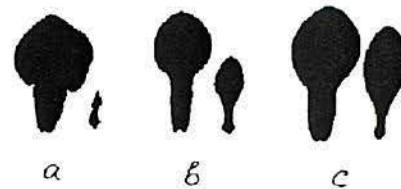


Figure. 4:
Size correlation of falls and standards of:
a) *I. setosa*
b) *I. versicolor*
c) *I. virginica*

USE

Any species, including *I. setosa*, is characterized by both positive and negative properties. The most valuable property, which is gifted to *I. setosa* by nature, is an extremely high winter resistance of its northern populations. Rhizomes of *I. setosa* are able to sustain the most severe cold, and the plant can content itself with a very short growing period. Moreover, in unusually severe years, after a loss of the foliage and flower buds due to sudden frosts during the growing period, it is able to revive, rising like the Phoenix bird from its ashes, and under more favorable growing conditions in succeeding years yield flowers and seeds again. The aforesaid allows me to conclude that this iris can play a leading role in the northern advance of beardless irises by use of it in hybridization.

My long-standing work with irises has forced me to a conclusion, that each of the species should be studied at the population level. Due to the enormity of the species, *I. setosa* especially needs a study of this kind, which has not been yet undertaken so far. Over the vast area of its geographical range, populations of the species have adapted themselves to the most different environmental conditions. The botanist M. S. Boch has found a population in one of the northern areas of Kamchatka, which grew at the Pacific coast, 15–20 m far from the water's edge, on salty sand among shells, seaweeds and other sea deposits. At this point, let me make a suggestion that the seeds of *I. setosa* can most probably be transported by sea water. Another researcher, Mrs. A. T. Reut, observed plants of *I. setosa* at the coast of the Gulf of Anadir, which grew on a depressed maritime terrace, in the forb-grass meadow, on the salty soil.

The Canadian hybridizer T. Huber has reported in a letter: "I was in Alaska, Fairbanks area to collect *Iris setosa* var. *interior*, the plants were in full bloom June 21st with 24

hours daylight, they grow over perma-frost during the season thaw (from mid May to last week of September)". In our experiments at the latitude of St. Petersburg, the seedlings planted from seeds collected in Alaska proved themselves the most vital. In contrast, plants brought back from the Vladivostok environment typically showed decreased vitality.

Hybridization can reveal many of the useful properties of this polymorphic species. That may be both interspecific and intraspecific. Wide potential of the interspecific breeding can be judged from results obtained for instance by T. Tamberg. Hybrids of *I. setosa* to cultivars of Siberian irises, or 'Sibtosas', are unusual for both their highly ornamental appearance and biological resistance.

The intraspecific hybridization may deal with the forms created by nature; a brief discussion on these is contained in the book by B. Mathew "The Iris" (1990, p. 86), well known to iris-growers. I myself can add that the most bright-colored and large-flowered forms occur on the Japan Islands, namely *I. setosa* var. *hondoensis* and *I. setosa* var. *nasuensis*. Unfortunately, these forms were not tested in our collection, but, judging from appraisal of both wild and cultivated Japanese forms of *I. ensata*, they are characterized by a low winter resistance. By hybridization of these forms to *I. setosa*, interesting results can be achieved.

Among the infraspecific forms, populations with flowers of different colors occur. Very special are the marble-painted (*I. setosa* f. *marmoreus* Reinwald) and the white-flowered forms, collected by a horticulturist V. Reinwald at the Sea of Okhotsk coast. Clumps or entire areas assembled from well-developed plants of *I. setosa*, are especially showy against a background of water.

Another peculiar feature, typical for *I. setosa*, was noted by the great expert in the flora of the Russian Far East, the Academician V. Komarov: "It grows in swampy meadow plots, at river banks, more often near settlements on pasturelands with grazing cattle, who leaves this plant alone" ("Flora of Manchuria", 1901, vol. 1, p. 496). "Thrives in especial abundance in pastures" ("Flora of Kamchatka Peninsula", 1927 vol. 1, p. 306). A similar observation was made by Mrs. A. T. Reut: "Near many settlements it acquires features of a weed (ruderal) plant. It readily inhabits waste grounds near abandoned buildings, along roadside ditches etc. In such places, it forms dense tufts, flowers abundantly. It occurs in abundance in the outskirts of the town of Magadan and a number of settlements" (from a letter).

The above information describes some of the particular characteristics of *I. setosa* which enable its extreme cold-resistance, and makes it a suitable and useful iris for planting in northern regions that are lacking in ornamental plants.





KOSHO-EN



var. *nasuensis*

Iris Setosa

photos by Carla Lankow



subsp. *hondoensis* Honda



var. *arctica*



ARCTIC REBLOOMER



MOORSEE (tetraploid)



I. setosa seedling
from Roy Davidson

2003 Convention Guests



Versatile Versicolors

By Jennifer Hewitt

(reprinted with permission from The 1994 Iris Year Book of the BIS
with updates by the author)

Those who are interested in the potential for diversity among the beardless irises are finding that barely-explored species can have a lot to offer. News of some developments, and of interspecies hybrids, has appeared in the *Year Book* quite regularly, but some of the newer cultivars are as yet little known outside their home countries. One species which is showing a great potential is *Iris versicolor*. Although only a few people are working on it, there is already a range of cultivars which deserve to be more widely grown.

Iris versicolor itself, the Greater Blue Flag of eastern North America, is well known and appreciated for its succession of flowers on well-branched stems and the fact that, in soil which does not dry out too quickly or for too long, or better still as a marginal plant in shallow water, it is extremely easy to grow. The flowers are of fair size, mostly in shades of violet to purple. Collected forms in a wider colour range, and hybridizing by a few people with vision, are increasing the variety available.

One well-known variant is 'Kermesina', in its best form a rich red or red-violet; seed-grown plants vary in depth of colour and it is worth looking for a good one. I have not grown 'Claret Cup', said to be similar, or 'Rougette' which has larger and better-shaped flowers. Nor do I (as yet) know two pinks, 'Vernal' and 'Version', but I do grow *Iris versicolor* var. *rosea* which is pale pink and seems shorter-stemmed than the type, and 'Wild Hearts', slightly deeper in colour and of average height, around 24 in (60 cm).

White forms are occasionally found in the wild and one collected in the 1930's, 'Murrayana', is available in the USA. The flowers are pure white with bright yellow signal stripes on the falls and a bit smaller than is typical, but it is vigorous (not always the case with albinos) with good foliage. Also vigorous, but short (12 in/30 cm) and dainty, is 'Little Rhyme'. Raised by Jan Sacks and Marty Schafer, its white flowers have green and yellow markings.

Jan and Marty are hybridizing versicolors, inspired by Bee Warburton who has collected or raised some of the most attractive forms. 'Rougette' and 'Wild Hearts' are two from her, and there is the collected 'Cat Mousam' with large violet-blue flowers which has yet to bloom for me (but I did pass near its original home in Maine in 1993!). 'Whodunit' (Warburton) is among my favourites, a large and well-formed flower, basically white with much violet veining on the standards and style arms, while the upper half of the falls is white with a few darker veins and the lower half almost entirely overlaid violet. It is slightly taller, 27 in (68 cm). Another striking flower from Bee is 'Mint Fresh'. Here the white ground is densely veined with red except for the style arms which are white with a red midrib. 'Candystriper' (Warburton) sounds similar but with rose veining; it should flower here in 1995. In her 'Party Line' the pink has a violet tone, the colour being deep in the centre of the standards and pale at the edges,

while the falls are even deeper violet-pink contrasting with the white signals and slightly creamy style arms.

Just what combination of genes produced the very unusual standards of Jan and Marty's 'Pink Peaks', I wonder? The flower is a very pretty clear pink, mostly a self colour except for the white style arms which have deep pink midribs and crests. The standards, instead of being rounded or gently pointed, have a series of notches in their upper edges and a fine, quite long, narrow tip. Another fine flower from these two is 'Between the Lines' which I saw in their Massachusetts garden and was given. This, on a white ground, has many fine violet-blue veins, and looks blue from a distance.

Some of these plants have come from seed distributed by SIGNA, the Species Iris Group of North America, and seed in mixed colours or from known pod parents if offered in the BIS Seed List. It is well worth trying as different colours and combinations can occur. I have a pretty white with pale violet veining which is probably not different enough to deserve a name but earns its place in the garden. Another I have grown for some years is up to 36 in (91 cm) tall when grown in water and has light violet-blue flowers, up to 10 per stem. Seed has been offered as 'pale blue' in the BIS list and the plant has now been registered as 'Silvington'.

The most dramatic of versicolors is 'Mysterious Monique' raised by Uwe Knöpnadel of Germany. Coen Jansen gave me this, and Tomas Tamberg has brought it to a BIS show, and it is a conversation stopper everywhere, for it is nearly black and white. The standards are small, deep wine red, the style arms white and wine red, and the falls are the deepest red-black, and velvety, below white signals. About 30 in (75 cm) tall here, it can grow taller, has elegant branching and many buds.

If you do not have the conditions for growing them, dig a hole and line it with polythene in which a few holes have been punched so that moisture is retained but there is drainage too. Fill it with soil plus manure or compost, and you have created a site which should suit them very well. Plant the versicolors and watch them enjoy life while you enjoy them; you won't regret it.

Some hybrids of *Iris versicolor* x *I. laevigata* are also well worth growing; they seem to do best in shallow water but I have not really tried them for long enough in other conditions to be sure. Two red ones appear to be very similar. Tomas Tamberg's 'Berlin Versilae' has been seen at a BIS show but has not yet flowered there. It is described as red-violet with a white and yellow signal and the flowers are larger than those of the wine-red *I. versicolor* parent but, I think, smaller than in the pollen parent. *I. laevigata* 'Regal'. The one I have grown for longer came from Akira Horinaka of Japan from similar breeding and the flowers have light wine-red standards and style arms with slightly velvety, darker falls. Mr. Horinaka also sent me a fine violet hybrid from two other forms of the two species. This is a very vigorous and a lovely clean colour, tall and well branched. This is now (2002) registered as 'Omoide'. All these hybrids are sterile but hybridizing among other forms of the species could produce some interesting results.

Iris musulmanica

By Dave Niswonger – Missouri

As a species, *Iris musulmanica* varies quite a bit. I've grown several clones of it, and found that it comes in blue, violet, even a somewhat rosy color with variations or combinations of these colors. They are similar to the hybrid spurias we grow, which are about 40 - 46 inches tall here in Missouri; I'm sure they would grow taller in California. Of course, many of our hybrids have *I. musulmanica* in their ancestry. Hybrids from it seem to hold their green color longer in the summer.

I. musulmanica generally has 44 chromosomes, which is on the high side of the spurias. An exception is the dwarf spuria, *I. pontica*, which has 72 chromosomes. The tall species that make up most of our hybrids range in count from 38 chromosomes (as in *I. notha* and *I. demetrii*) to 44 chromosomes, with the majority ranging between 40 – 42.

When I told a fellow from England that *I. klattii* and *I. musulmanica* were not the same, he told Brian Mathew, who wrote me a letter. I had to admit to him that I was unable to verify that the clone I grew of *I. musulmanica* was the true species. Brian mailed me some seeds which he had positively identified as *I. musulmanica*. The plants I grew from these were identical to my original plant, so I'm sticking to my story that *I. klattii* is not the same. Seedlings from *I. klattii* bloom a week earlier than most hybrids, and are about one foot taller. *I. klattii* has scarlet red pollen like paprika, whereas the pollen of *I. musulmanica* is a non-descript pale yellow.

The cultivation of this species is similar to that of the spuria hybrids in the tall group. I would recommend the following: plant two inches below soil level, put plenty of organic matter in the hole – a handful of alfalfa pellets or bone meal, and perhaps a sprinkling of Osmocote (slow release fertilizer) 14-14-14. Pour water in the hole when planting; don't try to water in later. Pull loose soil around the plant, making a dust mulch, then mulch with pine needles, straw or bark, but don't pile it up around the plant. The following spring, side dress with a balanced fertilizer.

If the plants dry out, they will go dormant and start growing again in the fall. If they stay damp, they will continue growing. In a hot climate like Arizona, they tend to go dormant, but this can be controlled by irrigation. In the Midwest, we cannot always shut off the water. If weeds are allowed to grow up around the plants, they may get southern blight or mustard seed fungus, which is deadly. This can happen when the temperature is in the upper nineties.

We have found that spurias like plenty of moisture, and can take more fertilizer than tall bearded irises. They even like well-rotted manure, which I wouldn't put around a tall bearded iris. If a person has a spot in the garden that tends to stay moist, that's a perfect place for them.



GERMINATION

By Sam Norris - Kentucky

Those of you who have taken advantage of the SIGNA seed exchange have no doubt seen a wide variation in the way seed from different species germinate. Some very few will germinate about as easy as radish seed while others prove to be almost impossible to obtain seedlings from. Yet in the wild seed from all the species do germinate. While trying to grow the aril iris from seed I worked out a method that gave a fair amount of germination and was not too complicated.

John Holden had been growing the aril iris for many years, and he eventually resorted to embryo culture in an effort to obtain a reasonable amount of seedlings. While the embryo culture would not give 100% germination, it came very close to it. John and I kept in touch until the time of his death, and by comparing the results from similar crosses we determined that the method of germination I had worked out gave results that were comparable to those obtained from his embryo culture.

The first attempt at using my method of germination was on seed that had been potted up for three years with no signs of any germination. The seeds were exhumed, the seed coat removed, and a very light cut was made on the embryo end of the seed. The seed were then held in the refrigerator in moist vermiculite for two weeks. Germination started almost immediately once the seed were brought back to room temperature. Later work with different seed lots showed that for the aril iris a three week cold treatment produced better results. The aril iris were the only ones tried that seemed to require the cold treatment after being cut, the others did well when they were planted immediately following the cutting.

I had pretty well worked out what I was going to try before ever starting on the seed from what had been published in different articles. While none of it had ever been brought together it did indicate that germination could be much improved. There seemed to be two different things involved that prevented early germination. First of all, there must be some kind of inhibitor that prevented the embryo from actually germinating until it had elongated enough for the growing point to be away from the influence of the endosperm. I have observed seed where germination tried to take place before the embryo had elongated and in most cases the embryonic leaves could not break through the endosperm, which resulted in their death.

The endosperm is strong enough mechanically to prevent the embryo from breaking through as the seed takes up water. There has been considerable speculation that the end of the endosperm weakens enough over a period of time so that the embryo can

break through, but if the seed has become thoroughly imbibed prior to cutting the endosperm, the embryo will start to elongate within a day or two.

The cut has to be made just right or there can be no germination. A very light cut, probably no thicker than a sheet of paper, will be about right. If the cut is too light the seed will not respond to it. If too heavy a cut is made the growing point of the embryo will be injured or actually cut off. It is a good idea to do the cutting under a fairly strong magnifying glass for better control of the cut.

This cutting can be rather tedious, especially when a large number of seed are involved. For the best results with a minimum of work, plant the seed, then after the first flush of germination is over, exhume the seed that have not germinated and proceed with the cutting. This gives a maximum generation with a minimum amount of work. If there is no germination after a reasonable amount of time has elapsed, say two and one half to three months, then exhume the seed and proceed with the cutting.

So far all of the different iris species that I have tried this on have responded well to it. The cold treatment following the cutting may be needed on seed other than the aril iris but so far I have not found any. Seed other than the iris that have a similar embryo/endosperm arrangement will also respond to this cutting. Two that I have tried are *Phoenix dactylifera*, the Date Palm, and *Podophyllum peltatum*, the Mayapple. While this is a waste of time with the easy to germinate seed, it can be time well spent on seed that are in short supply or with those that are known to be hard to germinate.

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Randolph-Perry: Who Were They?

By Bob Pries – High Ridge, Missouri

New members of SIGNA may have heard of the Randolph-Perry Medal for hybrids of Iris species, but many may wonder whom these people were and what they did to be so honored.

Choosing a name for an award is not easy. There are many people who deserve recognition but presumably the award should be named after someone who saw the potential of the class of iris represented by the award and was one of the early promoters. Amos Perry's name easily stood out. In 1927, the first Dykes Medal in England was given to his species cross, a cal-sibe, 'Margot Holmes'. This was the result of the first registered cross between *I. chrysographes* and *I. douglasiana*. Amos Perry was the first hybridizer to try this type of cross and 'Margot Holmes' deserved this unique recognition. This not only was a lovely garden plant, described in the checklist as having flowers of royal purple and falls with golden lines at the base, but inspired many hybridizers to try unusual crosses with species iris.

Of course Mr. Perry was not the first person to try unusual species crosses to see what type of hybrids they might produce. Sir Michael Foster (1836-1907), the mentor of Dykes, and considered by many to be the father of Iris research, tried (it seemed) to cross every species he had available. He wrote extensively about experiments and new species of Iris; he deservedly received a knighthood and has the Foster Memorial Plaque named after him. Foster was a great collaborator with John Gilbert Baker at The Royal Botanic Gardens at Kew and together they named several new species, such as: *I. cypriana* and *I. barnumae* (both 1888). Foster himself named ninety-five cultivars of species and species crosses.

Amos Perry was a nurseryman, not a scientist like Foster. Perry named at least one hundred and one species and species crosses, the most of any person to date. If World War II had not intervened, it probably would have been many more. Of course numbers do not necessarily mean much, but these varieties encompass a broad range of crosses and selections. He was very much the Ben Hager of his day working with everything, and taking iris in many new directions. Tomas Tamberg and Tony Huber are two modern hybridizers who seem to have similar goals.

It also seemed appropriate to have an American on the name of the Medal, someone who was a scientist and hybridizer, someone that contributed enormously to the gene pool available for such crosses. L. F. ("Fitz") Randolph was an obvious choice. A

professor of botany at Cornell University, his research showed how *I. pumila* had arisen from an ancient cross of *I. pseudopumila* and *I. attica*. He also named the new species *I. nelsonii* that was of hybrid origin between two Louisiana Iris species: *I. fulva* and *I. giganticoeurulea*. This alone might have qualified him as the choice for the other name on the award, but there were many more reasons to honor Professor Randolph.

He was the editor and driving force behind the American Iris Society's book *The Garden Irises*. Perhaps in places a little intense for the average gardener it gave a detailed account of Iris hybridizing and what was known about Iris genetics and chromosome numbers. Randolph recognized the value of having a large gene pool of material to draw upon, and traveled across Southern Europe and Turkey collecting various bearded iris species, subspecies and varieties, many from their type localities. These were used not only for his own research but were shared with species enthusiasts around the country. Unfortunately only a few were given cultivar names. Many plants are still in cultivation under Randolph's collection numbers, however without access to personal collection books or hybridizing notes, it is difficult to verify the descriptions of unregistered plants. (Distributing plants under numbers whether by collection, or seedling numbers, I find very distressing since it is only in the personal collection books or hybridizing notes in which one can verify the descriptions with these plants. As a rule, I would say all plants being distributed should receive a registered name, thereby a description is documented which is easily accessible to anyone.)

Randolph and Perry seem a perfect complement to each other and help to define the reasons for this medal. The scientist and the nurseryman, each in his own way promoted the experimentation and innovation that leads to new types of garden plants.



As a supplement to the Checklist of Cultivars of Species and Species Crosses I have been compiling a list of all the hybridizers and selectors, with a short biography and a list of the cultivars they have produced. The following is for Amos Perry and Fitz Randolph. This list of cultivars includes only those irises that are selections of species or are attributable to the crossing of species. It does not include the advanced hybrids of established categories. Mr. Perry's biography is based primarily on the AIS 1939 Checklist.

Perry, Amos, (1869-1953). Perry's Hardy Plant Farm, Enfield, Middlesex, Enland. One of the most celebrated nurseries in the world. Mr. Perry's father and grandfather

were partners in the old firm of R.S. Ware at Tottenham, an outstanding nursery of its day, noted for the raising and introducing of new plants, among which were many

irises of all groups, especially Japanese. These varieties were among the best of the period and some are still in the trade, such as GRACCHUS. Mr. Perry was active in raising new irises during about 1916-1917, putting out splendid varieties that have been ancestors of many of the best we have today, as BLACK PRINCE from which descended the DOMINION race. His most unique activities in iris culture are the beardless hybrids, crosses between widely separated groups etc., making new sections or iris races, as CHRYSOWEGI, BULLEYGRAPHES, DELFOR, TEWAT, etc. Among these, MARGOT HOLMES won the first English Dykes Medal. There are hundreds of good iris varieties that have been produced by Mr. Perry. In later years he has raised a great many magnificent daylilies and oriental poppies, not to mention all the fine asters, delphiniums and other hardy plants the horticultural world owes much to him. He has also written a superb, illustrated book-catalogue, *Water Plants* without doubt the most complete and charming brochure devoted to one horticultural subject. A great many catalogues on different sets of plants are issued by this firm, a very good one being *Hardy and Exotic Ferns*, of which there is a remarkable collection in this nursery, as there is also of bog and water plants. They listed Irises in 1906 and the Iris catalogue began in 1923. The list of plants produced and introduced by this firm is an imposing one and should be published as a record to horticulture. Mr. Perry received the Victoria Medal of Honour in 1935.

AMBROSE WISEMAN, R. 1921;
 AMMON, R. 1923;
 AMY BRANDON THOMAS, R. 1923;
 APHYLLA OSIRIS;
 ARKANENSIS, 1930;

BALCENG;
 'Balceng Harlequin';
 BARBARA PERRY, 1903;
 BENONI, R. 1923;
 BLUE BEARD, 1903;
 BOSNIACA MAJOR;
 BULLEGRAPHES, 1925;
 CANARY BIRD, 1903;
 CENGIALTI MINOR;
 CENGIALTI NANCY;
 CENGIALTI PURPUREA, before 1920;
 CENGIALTI THALIA, 1923;
 CHRYSOBIRICA, R. 1923;
 CHRYSOBIRICA GLORIOSA, 1924;
 CHRYSOBIRICA PURPUREA, 1924;
 'Chrysodoug';
 CHRYSOFOR, R. 1923;
 CHRYSOFOR BRONZE QUEEN, 1927;
 CHRYSOFOR CANARY, 1924;
 CHRYSOFOR DELICATA, 1927;
 CHRYSOFOR GLORIOSA, 1927;
 CHRYSOFOR MAGGIE, 1929;
 CHRYSOFOR MARION, 1927;
 CHRYSOFOR NANCY, 1924;
 CHRYSOFOR PEGGY, 1924;
 CHRYSOFOR PRIMROSE QUEEN, 1927;
 CHRYSOFOR PURPUREA, 1926;
 CHRYSOFOR SUNRISE, 1927;
 CHRYSOFOR THELMA, 1927;
 CHRYSOGANA, 1924;
 CHRYSOGANA PURPUREA, 1929;
 CHRYSOWEGII, 1924;
 CURIOSITY, 1903;
 DARMSTADT, R. 1940;
 DELAVAYI PALLIDA, 1928;
 DELFOR, 1926;
 DOUGBRACKT, R. 1925;
 DOUGBRACKTIFOR, 1929;
 DOUGLASIANA ALBA, R. 1938;
 DOUGLASIANA GLADYS,
 DOUGLASIANA MAUVE QUEEN, 1940;
 'Douglasiana Rosea', 1923;
 DOUGRAPHES, R. 1924;
 DOUGTENAX, R. 1923;

E. A. BOWLES, 1916;
 EDEN PHILPOTTS, 1921;
 ERATO, R. 1923;
 GRACILIPES ALBA, 1927;
 HARLEQUIN, 1903;
 HAR-TEN;
 INDIANENSIS, 1930;
 JENKINSII, R. 1923;
 KERMESINA, 1901;
 KING GEORGE, R. 1911;
 KULAN TITH, 1923;
 LADY CHARLES ALLOM, 1921;
 LAEVIGATA SEMPERFLORENS, 1919;
 LEANDER, 1897;
 LONGSIB, 1925;
 LONGWAT;
 LORD LAMBOURNE, R. 1923;
 MARGOT HOLMES, R. 1927;
 MARION, R. 1938;
 MARJORIE TINLEY, 1922;
 MME. EMMA NEVADA, 1923;
 'Monwat';
 MRS. HETTY MATSON, R. 1923;
 PALLIDA MINOR, 1919;
 PALLIDA NANA, 1921;
 PEGASUS, R. 1922;
 PERRY'S FAVOURITE, 1911;
 PRINCESS LOUISE, 1903;
 PSEUDACORUS ACOROIDES, 1938;
 PSEUDACORUS ALBA, 1906;
 PURPURASCENS, 1906;
 SAMBO, 1903;
 SIBIRICA BLUE BIRD;
 SIBIRICA MRS. PERRY, 1912;
 'Sibirica Nana', 1940;
 'Sibirica Nana Alba', 1940;
 SPURIA PALLIDA, 1924;
 STANDARD, 1903;
 STYLOSA SUPERBA, 1933;
 TEBRACT, 1925;
 'Tectorum Alba Semi Plenum', 1909;
 TECTORUM LILACINA, before 1928;
 TENAX EXCELSIOR, 1940;

TENAX PURPLE QUEEN, R. 1936;
 TEWAT, 1926;
 THE CZAR, 1910;
 THORA PERRY, R. 1923;
 TOPSY;
 VARIEGATA MINOR;
 'Versicolor Novaboracensis', 1938;
 WATBRACK, 1925;
 WATTII ALBA, 1933;

Randolph, Lowell Fitz, (1894-1980).
 President of the American Iris Society (1960
 – 1962), vice-president (1958 - 1960).
 Chairman of the publications committee
 and editor of Garden Irises, 1958. Professor
 of Botany at Cornell University, Ithaca,
 New York. World famous for his work on
 the cytogenetics of corn. He traveled
 through southwestern Europe and Turkey,
 collecting living material of many species
 and geographic races of irises, both for
 cytologic study and breeding new
 introductions. He contributed many articles
 to the AIS bulletins on such topics as iris
 genetics, embryo culture, and variety
 classification.

APHYLLA HUNGARY, R. 1958;
 'Aphylla Slovakia';
 ATTICA PARNES, R. 1957;
 'Bohemica';
 CHAMAEIRIS CAMPIGLIA, R. 1960;
 CHAMAEIRIS LE LUC, R. 1960;
 ILLYRICA TRIESTE, R. 1957;
 ITALICA CAPRAZOPPA, R. 1961;
 OLBIENSIS SANNICANDRO, R. 1960;
 'Pseudopumila Randolph's I-43C';
 PSEUDOPUMILA ZADAR, R. 1957;
 PUMILA MUNICH, R. 1960;
 TRINKEDOR, R. 1949;
 'Variegata – Randolph's 61-72';
 'Virescens-#1';
 'Virescens-#2'

Why I Grow Irises from Seeds

contribution from Caroline Stalnaker to the on-line Sibrob,
printed with permission from the author

I'd like to offer another perspective on growing from seeds. I basically see myself as a conservator - growing mostly historic and species. I am a seed-aholic. I am very concerned that species will be lost with climate and habitat change and so when I can get species plants and or seeds, I grow them. While they basically breed true, even with species there is variation and my grandmother, who was also a seed-saver taught me to select the earliest, latest, stockiest and tallest plants to save seeds from; not just the earliest and biggest as different characteristics are advantageous in different seasons, a drought can wipe out a species. I recall Ellen mentioning her Dawinian selection and have been interested in comments about the introductions which do or do not do well for certain people. Whether or not you choose to hybridize or grow species, some selections must be made.

Another reason I grow plants from seeds (for instance from the Hudson Seed Co.) is that I can explore micro-climates from the many progeny until I figure out the necessary requirements here without the cost of killing many plants in my experimenting stage.

A third reason I grow from seeds is to get large numbers of plants, for instance versicolors, to reintroduce them to the flood plain of the farm where they were once native, but were killed out by herbicides many years ago. For whatever reason one chooses, growing from seeds is a really exciting project, but it requires a certain discipline and clear goals and patience. Five years ago I set out about 2000 three year old *I. versicolor* seedlings. About half were washed away or drowned by floods three months later. Of the remaining half, only about 30 plants survived three years of drought and were still growing last summer. I haven't checked this year. By the way, if you grow a species from a named clone your plants do not take the name of the clone, but are referred to as "from Kobana". For whatever reason, growing a few seeds will give you a new perspective and a lot of respect for hybridizers.

Good luck,

Caroline, where the rain continues (I am not complaining), and grass and weeds along with cherished plants flourish in the NW corner of VA.

IMPORTANCE OF THE PROTECTION OF FULL NATURAL VARIABILITY OF IRIS SPECIES FROM THE VIEW-POINT OF THE DEVELOPMENT OF GARDEN VARIETIES

By Milan Blažek, Czech Republic

The Botanical Garden belonging to the Czechoslovak Academy of Sciences was established in January 1963, and after five years it became a part of the Institute of Botany.

The base of the botanic garden was the famous park of Průhonice, spread over 250 hectares (100 acres). For the construction of new, specialized collections a garden covering 20 hectares (8 acres) in the neighborhood was available. The concept of the garden had to link with both botanical and gardening tradition, as well as with cultural activities taking place in the Průhonice Park. It also had to correspond with the classic botanical programs at our universities. The specialized, new collections were to be – after these criteria - based on up-to-date information useful for the development of new experience and knowledge.

After my arrival to Průhonice in September 1963 the genus *Iris* was incorporated into the program. The knowledge and interest in both wild and garden plants, and the initial basic collection of Irises from my family garden originated in the course of my studies of plant taxonomy at the Charles University in Prague.

In our work two basic aspects are mixed together: scientific studies are combined with the standard activities of botanical gardens.

Concept and construction of the *Iris* collection

The first goal was to bring together as many examples as was possible, in the broadest possible range of taxa, and using them in as many directions of work as a botanic garden allows. In the Botanical Garden the first task was to broaden these groups in the areas of interest for study and to prepare the collection for a systematically organized Iridarium, serving to further study as well as for cultural and educational purposes.

The original private *Iris* collection consisted of wild plants as well as old, nameless cultivars from the surrounding area, named cultivars from nurseries, and also recent American cultivars, sent me from their originators or from specialized nurseries gradually from 1958. The collection was continued and developed fully after being brought to Průhonice.

Basic scientific approaches

As the practice of any botanical garden should be based in solid scientific knowledge, various studies and experiments were made toward the development of the deepest possible understanding of the genus.

Although an attempt was made to include the entire genus *Iris*, due to dominant climatic conditions – and also to the most promising perspectives – an emphasis was placed on bearded irises. These provided a rich choice of plants with which to work, and a broad variety of working themes.

Various experiments were carried out, and an extensive hybridizing program was possible with the cultivation of thousands of plants obtained from every accessible resource: nature, leading personalities in the Iris world, botanical gardens, nurseries, amateur gardeners, village gardens and cemeteries. The knowledge obtained in this phase was reflected later in various working branches, which would have been only superficial without good personal experience. Rich didactic and educational activities developed, as did gene-pool protection theory and practice of both wild and garden plants.

Studies of geographical distribution based on herbarium collections and literature data were carried out, and the variability in natural populations was studied using a classical taxonomic approach. The available resources needed for evaluating the necessary number of representatives did not however allow a conscious, profound monographic evaluation of taxa of scientific interest. Strong influencing or even changing of certain basic characteristics in herbarized as well as cultivated plants, resulting in the necessity for extensive field work in difficult-to-access territories, may be the main reason why we still find so many open taxonomic problems even among seemingly well-known species.

Hybridization of domestic wild plants

An extensive hybridizing program accompanied our work for almost three decades as one of the basic methods. This in combination with available published data enabled a necessary understanding of relationships among plants from botanic, genetic, cultural and gardening points of view. This experience showed to be useful in a subsequent goal of the botanic garden to participate in various forms of gene-pool protection.

The hybridization has been done in my private garden in Zbuzany since 1957 and it has continued later in parallel at the Botanic Garden in Průhonice. The number of pollinations ranged between several dozen to many hundreds each season. Especially in the first years all possible promising (and partly also only curious) combinations of parents were tried, however always with a certain theoretical or practical goal.

One part of experiments had its goal in the botanical sphere: to elucidate the relationships between selected taxa, to confirm or disclaim certain supposed cases of hybrid origin of taxonomic or gardening importance, or to prove the relationships among certain individuals or taxa. The other direction of our work was aimed toward the creation of new types of garden Irises. Thus, it was necessary to consider as many types of heredity as possible, and to compare the characteristics of hybrids of garden varieties with wild species as well as of supposed spontaneous hybrids.

Regarding flower color of garden varieties the main interest was concentrated on recessive forms (*plicata*, tangerine bearded cultivars), and dominant bicolor descendants of PROGENITOR, the most important genetic resource of the 20th century. Numerous combinations of these basic types of heredity, including line-breeding as well as outcross and backcross, produced several generations of interesting seedlings which are still growing in various gardens in our country and abroad. The best specimens are being preserved in Průhonice. In this program many forms of species were included, preferably selected clones from wild occurrence.

Hybrids of Tall Bearded cultivars with *Iris pumila*

The great variability in color of our domestic *I. pumila* was the basis for my decision to use it in an extensive hybridization program.

This work was started forty-five years ago when international interest intensified for new Dwarf Bearded Irises. At that time, the basic information about the size, blooming time and fertility of (Tall Bearded cultivars x *I. pumila*) hybrids was already available from the literature. A good selection of such varieties was present in nurseries abroad, but little information existed with respect to the heredity of colors in crosses between wild and garden plants.

Surprising results of our experiments showed that the hybrids of advanced Tall Bearded cultivars with various color forms of naturally occurring, wild *I. pumila* lead to much earlier progress in the development of garden hybrids than using random examples of the species.

Our first success resulted from the use of unusual red-purple to carmine red shades of *I. pumila* from wild populations. The first Czech named dwarf seedling – the very dark red TEMNO (Blažek 1967) won the second position among Miniature Dwarf Bearded Irises in the International Concurrence in Vienna in 1970. Its origin was (ORELIO x a red-purple *I. pumila*) X (RED ORCHID x deep carmine *I. pumila*). In flower form and its smooth color it surpassed even its grandparents of garden origin. It was also the first Czech variety to ever win an international award.

Its name “Temno”, meaning Darkness, was carefully selected to be acceptable for non-Czech speaking people. Another deliberate undertone was that this word is the title of a famous book about the Dark Age Era (17th and 18th century) in Czech history. Also in the color was a shade of red, a color symbolizing a more recent Dark Age Era in our history. I never needed to grow a really red Iris, but I still love this plant and wish strongly that the last saved piece will come through this winter.

The white form of *I. pumila* proved especially useful in combination with the recessive tangerine factor of Tall Bearded garden Irises: already the second generation of hybrids obtained the unusual color of the Tall Bearded ancestors. F1 hybrids of HAPPY BIRTHDAY x white *I. pumila* were yellow self or yellow with a large brown spot. Already in F2 generation from a yellow colored seedling appeared however a plant with obvious recessive pink color inherited from tall grandparents.

It bloomed first in 1965, in a time when this color was in Dwarf Bearded cultivars still a rarity: the only other plant of this group in our collection was then the apricot colored LILLIPINKPUT. I gave to my seedling the name MALÝ PINK (meaning Small Pink). The plant obtained not only the planned light pink color but also a high individuality, which does not allow confusion with any other seedling. This plant is unhappily not very vigorous, but it is still present in Průhonice. Another seedling of this type from that time, a much less pretty one, still shows after many years the best growing energy.

Subsequent generations of Tall Bearded x *I. pumila* hybrids showed a very positive influence of the selected wild *I. pumila*, both in the Standard Dwarf Bearded as well as Intermediate Bearded group. In that time a rare deep red tone appeared for instance in our SAMETKA (Blažek 1966) derived from JUNGLE FIRES X (ORELIO x red-purple *I. pumila*).

Our best result, however, was a small, but successful series of seedlings derived from MALÝ PINK. Encouraged with the appreciation of TEMNO, some years later I sent to Prof. Kurzmann in Vienna some of my pink IB seedlings. A pink IB hybrid from MALÝ PINK breeding, (LODORE x MALÝ PINK), was awarded with Honorable Mention in 1980. It was not very clean in color, but for that time still a good, vigorous and large flowered early blooming plant, suitable for any garden. It was selected already in 1970, and named "LDMp", later ZLOM.

The small series of hybrids from MALÝ PINK x POMPANO PEACH bloomed first in 1967 and 1968. MALÝ PINK is rather late blooming for a Dwarf Bearded, so it was possible to use it even as a mother plant. All seedlings had clean shades of apricot color. I liked them, so I decided to save them, even if I noticed critically their not very good branching and also a rather low vitality of some of them.

Thirteen years later, in 1980, I had an opportunity to visit Switzerland. There I was for the first time able to see an American IB novelty in the apricot/pink category. It was much younger than my apricot IB seedlings. After coming back home, I became less critical to my plants. This new opinion and the success of ZLOM contributed to my decision to send one of my older apricot seedlings to Vienna.

In 1983 a surprising and very pleasing report informed me that my rather old plant, selected in 1968, won a first price in the IB group. I named it MERUŇKA – apricot fruit.

The transfer of yellow pigments into the outer perianth segments (falls) of hybrid seedlings, resulting in the yellow amoena pattern in seedling of IB category was easier to achieve in these *I. pumila* hybrids than it was in tall cultivars not related to *I. pumila*. Surprisingly yellow amoena IB seedlings, strongly resembling PINNACLE, did not result from the extremely rare, true white pumila with a yellow spot, but from a blue, self colored tall variety and a dwarf seedling of BLUE SHIMMER x *I. pumila*.

If we admit that the hybridizing work was based on a rather rich variety of experiments, but only a few seedlings from each parent combination were actually grown, the results were surprisingly productive. Three of six awards, received in the Vienna international competition, were given to hybrids, resulting from our work with selected clones of the domestic *I. pumila*. This indicates the advantage of the purposeful use of the natural variability of wild species.

An interesting, and quite surprising experience with *I. pumila* was in the different size of TB cultivar x species hybrids according to the geographic origins of *I. pumila*. The combination of the Central-European *I. pumila* with Tall Bearded cultivars gave us significantly larger seedlings than the first dwarf cultivars developed from *I. pumila* obtained by American hybridizers from the Romanian Black Sea coastal territory. This is just so interesting from the point of view of production of garden hybrids as well as of taxonomy of *I. pumila*. In size, the American Lilliputs, descendants of southern pumila, are conspicuously smaller. This is especially appreciated in the selection for small plants. Our seedlings TB x Czech pumila were well over 40 cm tall. My interest was more in study, to check the genetic potential of various proveniences of *I. pumila* – to prove whether the southern plants could be perhaps separated as a subspecies. Obtaining of garden plants of certain size was a secondary goal, but the hybrids showed, that southern plants are not identical with those in the northern part of the area of the species.

(end of part I)

Irises from the Czech Republic

-Milan Blažek-



Clockwise from bottom left:
yellow *I. pumila*,
MALÝ PINK, TEMNO,
MERUŇKA, ZLOM,
SAMETKA, former assistant
Petr studying irises in the wild



2002 Founders of SIGNA Winner



CANDYSTRIPER

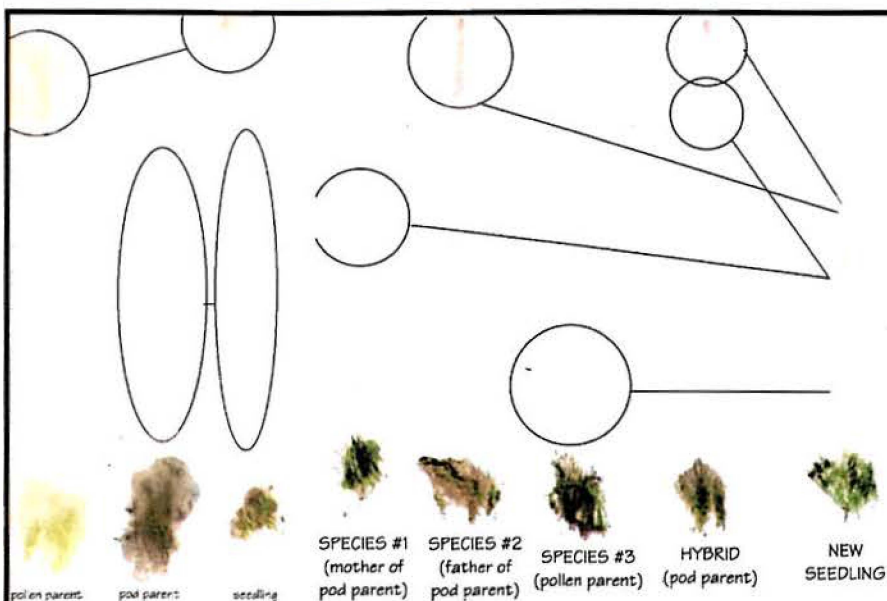
Selected by Bee Warburton

photo by Jan Sacks



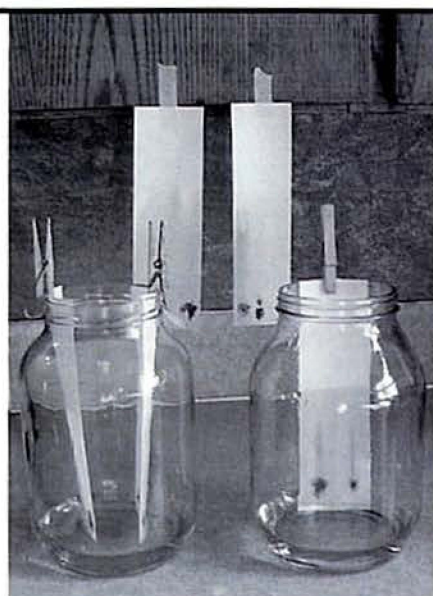
I. Musulmanica

photo by Dave Niswonger



Simple Species
Chromatogram

Advanced Species Chromatogram



Gallon Jars with Paper
Chromatograms

KITCHEN CHROMATOGRAPHY

By Christy Hensler
THE ROCK GARDEN

Newport, WA

<http://www.povn.com/rock/>

Though I collect and work with a number of iris species, my primary interest revolves around species-crosses. Knowing whether or not a cross has been successful as early as possible can save a lot of paperwork and garden space, not to mention frustration if a plant takes years to reach maturity.

When Jean Witt first suggested that I might try kitchen chromatography as a tool for confirming some of my species iris crosses I was a bit intimidated. Except for the familiar applications I use in baking or brewing, chemistry is a subject I find rather overwhelming.

She assured me that it was a simple process and I probably had most of the things I'd need right in my own kitchen. A sample chromatogram she generously made using the blooms from some of my more problematic seedlings answered a lot of questions about them and convinced me to give it a try.

The directions were adapted from methods used by the Dwarf Iris Society many years ago and except for filter paper, all of the materials I needed were either already on hand or could be found locally. While I waited for bloom season, I searched for a source of filter paper and finally located a business online that sold small quantities at a reasonable price (see Sources).

I also did some additional research on chromatography and found a mention that while the process of chromatography was discovered in 1906, it only began to be used widely in the 1930s. The word "chromatography" comes from two words meaning "color" and "to write". In simplest terms, a solvent is used to separate the pigments within a sample and pull them along as the liquid is soaked up by the filter paper.

While identifying which pigments are present in each species of iris would be handy, it's not required for this. What is required is to know that different pigments within each sample will separate depending on how soluble they are and to some extent how easily they are carried up the paper by the solvent.

Quite a few iris species show noticeable differences in the amounts and types of pigments they contain and if the blooms are darkly colored, stains from the petals are quite easy to make.

*More information can be gathered by controlling all of the variables (humidity, temperature, amount of material and the way it's prepared) but for the average hybridizer wanting to know whether a special seedling is a species-hybrid, this simple approach works well.

To make a chromatogram you'll need:

DISTILLED WATER

PETALS FROM PARENT PLANTS AND SEEDLING(S)

FILTER PAPER FOR CHROMATOGRAPHY (coffee filters will not work)

NYLON or PLASTIC SPOON (not metal)

GLASS GALLON JAR

PLAIN AMMONIA

TAPE or CLOTHESPIN

PENCIL (not a pen)

BLACK LIGHT (Ultraviolet light. Nice to have since some pigments will show up better under black light than daylight. You can achieve a similar effect by scanning the freshly dried paper and increasing the amount of blue in the image using any good graphics program.)

Check the filter paper to be sure the grain runs vertically and if you need a bit of help keeping the samples lined up evenly, mark with pencil, a straight line across the paper about 1/2" from the bottom to act as a guide.

On the filter paper, mash each individual petal sample with the spoon just hard enough to make a 1/2" to 3/4" diameter stain as dark as possible just above the pencil line you drew near the bottom edge. For best results, try to keep each sample about an inch apart. Label each stain with pencil. Pens should never be used since the pigments in the ink will also separate.

Pour 1" of distilled water into the jar. Lower the filter paper into the jar until the bottom edge is about 1/8" into the water and clip or tape the paper in place.

Allow about 2 to 3 hours for the filter paper to absorb the water. The water-soluble pigments in the petal samples will separate as they travel with the water up the paper. I don't let this sit longer than 3 hours since the paper can absorb only so much moisture and will "top out" at about this length of time. Immediately pass the damp paper over the ammonia letting the fumes react with the pigments. The ammonia deepens the color of some pigments enough to make them visible.

Compare the stains in sunlight and under the black light while they're still wet and shortly after the paper dries. You should notice different groups of pigments within the streak from each sample.

For a permanent record of the chromatogram, you'll have to scan or photo it as soon as possible once it dries since the pigments will begin to fade rather quickly.

In testing a suspected species-X seedling, samples are taken from the pod parent, the pollen parent, and the seedling. If the seedling is hybrid it should show the combined pigments of the parent plants.

I ran into a few problems almost immediately since quite a few of the plants I'd hoped to check had white or very pale blooms or weren't yet old enough to bloom.

Remembering that the leaves also carried flavones and should show distinct differences between species, I thought using the leaves might work a bit better for what I was doing. Best of all, even small unbloomed seedlings could be tested since I didn't need much material for samples. With this approach water wasn't an effective solvent.

After experimenting with a number of different solvents, the only two that gave me good separations were acetone and plain ammonia. Ammonia worked slightly better and the cost was considerably less. Disposal was also a consideration and the used ammonia could be recycled as an ingredient in window cleaner.

Because it's quite a bit harder to crush leaves than petals, additional care must be taken not to damage the filter paper. I've found that twisting and breaking the leaves before crushing them on the paper helps. For large projects involving dozens of plants, a small easy to clean food processor or mortar & pestle might be a better option.

Chromatography as means of checking parentage doesn't work well for all species-crosses. *Siberica* and *setosa* have shown no easily discernable differences in the chromatograms I've made but several of the family groups of species-crosses I've sampled have been surprisingly easy to read. The quick results and the relatively low cost of paper chromatography along with the ability to keep an image of the results in my files make this a nice addition to my toolkit.

Sources

Finding chromatography paper wasn't as easy as I first thought it might be but this source gave me exactly what I was looking for.

Analytical Scientific, Ltd.
11049 Bandera Rd.
San Antonio, Texas 78250
Phone: 210-684-7373
Orders: 800-364-4848
<http://www.analyticalsci.com/>.

Their 57x64cm chromatography paper (Item #4537-1 by the sheet) can be cut into 9" x 11" quarters and each piece will give enough room to do approximately 10 samples.

Black light bulbs can be found at hardware stores or in most craft stores (They're especially affordable around Halloween.)



Experts Column

(X = unknown quantity spurt = drip under pressure)

by Carla Lankow - Renton, Washington

Question from Hao Chang, Bethel CT:

I have an *Iris orientalis* plant, which has been growing in sun/part shade for 2 years. It's reached a good size now - almost 2 foot tall, and is a fairly good size clump, however, it's never bloomed. The soil is not overly rich in organic matter, but other irises - siberians mostly - have bloomed in similar locations. I'm wondering what I could do to induce this plant to bloom. I like foliage plants as well as anyone, but generally I don't grow irises for the leaves!

Answer: *Iris orientalis* is one of the tall species in the spuria group. In the references I checked several remarked that it was "difficult in some gardens". It was also stated that the spuria species as a whole were more difficult than the hybrids. *I. orientalis* needs full sun in a well drained neutral to slightly alkaline soil. All spurias are heavy feeders and need a moist area and plenty of water in the spring and early summer. In late summer, even the summer green types like a bit of drying off during the resting period. Watering during hot weather can cause rot in the new growth tips. From personal experience I know most spurias take at least two years to settle in and bloom well.

Question from Ken Walker of Concord, CA

I have a question for the SIGNA Experts Column. I've noticed that the style arms of *I. setosa* are held well above the haft of the fall, exposing the stamens. This is true for the varieties I grow and for the pictures I can find on the web. I have much more limited experience with *I. tridentata*, but from what I've seen, its style arms are held tight against the haft of the falls (which is very noticeable when you try to pollinate them). Is this a reliable way to distinguish these species?

Answer: Good question Ken you are getting tough on the X-spurt right away! I have to throw this one out to the membership as I am not familiar enough with *I. tridentata* to be able to judge. The clones I have grown do hold their styles close to the haft of the fall but this may be due to the fact that they seem to have short styles and long hafts which slope up at a sharp angle. Is this a regular characteristic? I also notice that *I. setosa canadensis* (*I. hookeri*) also holds its styles closer to the falls. This is a very interesting observation, something I had not noticed before. I think however that size of the rhizome, *I. tridentata* has a more slender rhizome, and bloom time might be better characters to distinguish between the species. *I. tridentata* blooms in mid to late summer long after *I. setosa* has finished.

I. tridentata is a very interesting and little known US species. Some books say it has yellow signals and some books say white. Jean Witt raised some seedlings of *I. tridentata* and about half of those had yellow signals surrounded by white the other half were split between totally

yellow signals and totally white signals. Will someone more familiar with this iris please give us a short write up on it for the next issue? In fact I want to hear from several of you, we can combine your comments. I want to learn more about it!

Question from Michael Zuraw, Bethel CT:

We grew several *Iris setosas* from SIGNA seed planted in the fall of 2000. They grew quite well in a sunny spot next to a stone wall, and bloomed nicely this spring (2002). Unfortunately, a few weeks after flowering, the plants began to turn yellow, and one clump has died. There were no obvious signs of disease or insect damage. I've read that *Iris setosa* needs constant moisture and will do well next to water, but that it can also be grown in ordinary garden soil. I don't understand why the plants survived the first year, but not the second. What can I do to prevent this in the future? The soil in our garden is acidic and somewhat amended with organic matter. Being on the East Coast, rain is fairly frequent (it rains approximately once a week), although occasionally it was quite hot (in the 90's) this spring.

Answer: I think your answer may be in the last line of your question. If you spring weather was hot while the soil was still quite wet you may have had a root rot or even crown rot. Many beardless irises will rot if given water in hot weather. *I. setosa* is a plant of the arctic regions and grows in areas where the soil is quite wet, even boggy when it thaws in the spring but is often kept cool by frozen subsoil. It is better if allowed to dry off a bit in summer. I have had trouble with *I. setosa* rotting in hot weather. Does anyone in the membership have any ideas to help Mike?

Your not so expert X-spurt did not do so well this time I need help from all of you to answer some of these questions. I also need more questions for the next issue. Please send both questions and answers to:

Carla Lankow
11118 169th Ave. S.E.
Renton, WA 98059 USA
Or by email to: SIGNA@bigfoot.com

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Carla Lankow
11118 169th Avenue SE
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Introducing Pardancanda to the Wild in Armenia

by Raffi Kojian - Yerevan, Armenia

In the spring of 2002, I set out to introduce Armenia to the Candy Lily. Pardancanda, which is still far from common in the United States where it originates, has never made it to Armenia as far as I know. At a previous residence in California I had been successful in growing these beautiful, care-free flowers, and the much harsher winters of Armenia had me racking my mind for what I could grow here. Again and again I thought of pardancanda. This plant's requirements seemed to be a perfect match for the climate of Armenia. Neither long, dry summers nor long, cold winters are a problem for this plant, and since it is in fact ideally suited to those conditions, the next logical idea seemed to be naturalizing the lily in the wild. Armenia already has a number of wild Iris varieties which are successful in the south, so this plan seems very realistic.

On a visit to the United States in early 2002, I ordered five packets (25 seeds/packet) of seed from Park Seed, which had originally introduced the plant to the market. This was my only source for seed, and a project like this I believe must start from seed to make it cost-effective. My plan was to sprout the plants myself, and grow as many as I could for future seed supply, while those I could not grow myself would be given to friends who could care for them. A few planted in the wild would jump start the naturalization. In early spring approx 120 seeds were planted in window boxes while it was still frosty outside. The few remaining seeds were planted in the wild, in an area which satisfied all of the plant's growing requirements.

Over the course of the year about 75 of the window box seed sprouted. These were transplanted into pots as they grew large enough. 50 of the plants I kept on my own balcony in pots since I did not have land of my own, and the remainder were given to two friends who have well cared for gardens. By giving them to friends I could track their progress, and gather the valuable seed.

The success of the first planting did not ensure any seed production in the first year, so I decided to go ahead and ask a visitor from the states to order and bring me ten more packets of seed in the summer of 2002. The arrival of this seed meant that I would be able to sow some in the wild beginning in the fall of 2002, and have many left for planting myself in the spring of 2003. Those new sprouts would be primarily given to local gardeners who would propagate them or plant them in the wild as seedlings in order to enhance their chances of survival.

Planting in the wild in Armenia poses problems that would not be encountered in America. Although the climate is idyllic, there are two man-made threats which could easily destroy the plant's chances of surviving in the wild: grazing and flower-picking. The vast majority of the land in Armenia is subject to grazing by domesticated and sometimes wild animals. Finding pockets of land which are unaffected by grazing, and are not covered in either

deep shade or tall grasses is a big hurdle. After finding spots which are free of this first threat, it becomes even harder to satisfy the second requirement, a spot which is virtually never visited by man. The capital of Armenia has many flower vendors, and wildflowers, even endangered ones, are often available. Along the highways as well, wildflowers are collected and offered for sale. Hard to access spots, nature reserves with little traffic and isolated homes with semi-wild gardens offer the best hopes for the plants to grow unmolested, and shed their seeds in the wild each year.

During 2003, many of the seeds I plant in the fall should sprout, and I will be planting many seedlings in the wild. In fall 2003 I will have an entire harvest of seed from the plants my friends and I are growing. These will be both planted in the wild and given to individuals who have nice gardens in order to ensure the plant's success in Armenia. Hopefully by the end of 2003, the success of pardancanda in Armenia will be achieved in people's gardens and in the wild.

*If anyone wishes to help in this effort, the author may be contacted at the following address:
Raffi Kojian 25 Saryan Street, #38 Yerevan, Armenia 375002*

Note: We at SIGNA do not recommend putting any plant into the wild as they could crowd out existing Species.



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Membership Secretary
3 Wolters Street
Hickory Creek, TX 75065-3214

Seed Stories

Marty Schafer – Carlisle, Massachusetts

I have been thinking how much fun it is growing irises from seed. The first irises we sowed came from Thompson & Morgan and were listed as 'Modern Siberian Hybrids'. They sprouted easily and we planted them in a little cluster and looked after them with great care. A year later they began to bloom. The flowers were not at all "modern" though one was a beautiful light blue with the shape of *I. sanguinea*, and another one actually repeat bloomed. They had their faults. The pretty blue one collapsed in a heap after flowering and the repeater was so unattractive we decided that twice as many flowers did not make it any better.

We started growing siberians from our own seeds and we looked for sources for other iris species. That's when we came upon SIGNA and started learning about the wider world of irises and irids.

We knew almost nothing about spurias, except for *I. graminea*. The hybrids do not grow well in New England. They form masses of foliage but rarely flower. We tried a couple of the *I. spuria* subspecies, *carthalinae* and *halophila*. About ten *carthalinae* seeds sprouted and we planted them in a damp place where they grew rapidly (Brian Mathew in "The Iris" - an outstanding resource - said they grew in wet habitats in Georgia, Asia). One of them stood out as the strongest and most beautiful (a rare and fortunate combination). It had the typical spuria shape with very long narrow hafts covered by long stylearms and long narrow light blue standards which were very upright, sort of quilled and lightly ruffled. It also had a lovely rose fragrance which may or may not be typical since it is not mentioned in the literature. We moved the plant to a drier spot in our garden hoping it would grow well in more normal conditions which it did. In 1996 when we had visitors for the Siberian and Species Convention several people who knew the species commented on how unusual it was and we decided to name and introduce it. It is a little tricky introducing species when you don't know much about them. We were lucky to have had advice from the expert visitors to confirm that this was indeed *I. spuria* ssp. *carthalinae* and that it was a particularly fine representative. We chose the name 'Georgian Delicacy' because of its native habitat of Georgia and its delicate flower and pale coloring. We often contribute seeds of it to the seed exchange.

The *halophila* seeds were a little different. Four seedlings sprouted and were also planted in the damp where they flourished. The flowers were a glorious yellow but the leaves weren't lovely. We brought them into the garden, in spite of the leaves, but they have not done well. They grow, but seldom flower. I think they are still remembering the abundant moisture they once had.

Because of my interest in hybridizing siberians, the species *I. sibirica* offerings in the seedlist have drawn my attention. We have sown wild collected seeds from Germany, Switzerland, Russia and Turkey. From a listing called "wild form" we got two white-flowered sibiricas. They were tall and beautiful the first year they flowered, but drastically dwindled the next. Luckily the first year I hand pollinated several of their flowers for the SIGNA exchange and kept a few to grow. One of the resulting seedlings (also white flowered with a pale blue signal) might be introduced if it continues to grow well.

Another *sibirica* seedling came from seed labeled *I. longipetala*, an unusual Rocky Mountain iris, which was donated by a European botanical garden. It is one of the unfortunate hazards of growing any plant from seed that it may be mislabeled. Rather than being discouraged, I take it as a challenge. Whenever something blooms that I don't have experience with I go to all my resources- text and photo- and try to confirm its identity. I don't want to perpetuate a mistake if I can help it. Anyway,

the “longipetala” turned out to be a *sibirica*. Only one seed sprouted, and it is an amazing plant. It has all the fine traits of *sibirica* - thin leaves, tall, branched and many-budded stems, and abundant seed set. The flowers are small and perfectly formed, and paler blue-violet than most *sibiricas* with typical white signals veined in deep blue. Unlike most siberian irises it forms a tight-knit, compact clump that shows no tendency to hollow out its center. During the early spring after its first bloom, while all of the *sibirians* around it were pushing up new growth, this seedling looked dead. All that showed was a neat little mound of light brown stubble where we had cut the leaves the previous fall. The agony of uncertainty must have gone on for a week. Finally the first signs of growth appeared with little fans poking up throughout the entire clump. It has continued with this habit of late emergence in the spring - but always comes through. We introduced it in 2002 as ‘Forward and Back’ - looking back to the species for inspiration and forward to what positive effects it may have in our siberian breeding program.

Another species we have enjoyed growing from the seed exchange is *I. setosa*. One bunch we got under the name *I. tridentata*. *I. tridentata* is in the same series as *setosa*, Tripetalae, but is less available. Both have similar standards - almost none - just tiny bristles, and blue-violet flowers. Both are American natives, *I. tridentata* is from Florida to North Carolina; and *setosa* is from Maine and eastern Canada and Alaska (and is also found in Asia). *I. tridentata*, however, blooms here in July, is stoloniferous, and has narrow leaves and delicate flowers. *Setosa* blooms in May/June and forms a clump. Regardless of the labeling mix-up, these *setosa* seedlings were unusual compared to most we had grown and we were delighted with them. They were a lighter color than most *setosas*, more purple than blue-violet, and had light yellow signals rather than white. They also had a very good bud count. We finally decided on one to propagate for possible naming. *I. setosa* can sometimes be difficult to transplant, but so far this one seems to be growing well.

The most fun *setosas* are those from Maine and the eastern Canadian provinces known as *ssp. canadensis* or sometimes as *I. hookeri* and sometimes called “nana”. Whatever you call them they are cute. They bloom in June for us. They are quite variable - their leaves can be narrow (almost grassy) or wider (relatively), but they are always short, from 5” to 15” high. Their flowers are also small. Ours have all been blue-violet. I’ve never seen or heard of a white one, but I would love to grow one. From several different batches of seed we have also gotten six-petalled forms, but they have not remained faithfully double. They make great plants for a small garden where regular *setosas* can be too large.

The best bearded irises we have grown from seed are also the tiny ones. We got some seed donated by Cleo Palmer called “mixed 32 chromosome *pumilas* and MDBs”. Most of the flowers are red-purple and brownish yellow, but they grow nicely on our poor dry slope along with creeping thyme, lavender and blue flax - all of which are allowed to seed around. These little irises seem to be immune to the troubles of other bearded irises. They have been carefree, growing into larger clumps each year, covering themselves with bloom. We have heard that the MDB descendants of *Iris pumila* have short lives, but we have not noticed this trait. Though we have not divided these plants for six years, they show no signs of exhaustion. They also have been self-sowing, and the volunteer seedlings are showing some variation in pattern, color and shape. They are a total delight in early spring when few perennials are blooming. We have seen photos of *I. pumila* growing in the mountains of Austria where the clumps were ever-expanding rings of flowers more than 2 feet in diameter. Ours might never reach this grandeur, but we can dream.

I have many more stories of growing irises from seed to write about....and would love to hear from other SIGNA seed growers about theirs.

Plant portrait, *Iris paradoxa*

By Bob Pries – High Ridge, Missouri



One of my favorite plants is *Iris paradoxa* Steven. It is relatively easy for the beginner to grow and is such a unique Iris.

The first thing I like about it is its small size. The drawing above is only slightly larger than life-size. Generally plants are between 4 and 8 inches. The flower when spread out is often as wide as the plant is high. It is quite amazing to think that so few leaves can make such a large flower. Surely the flower represents three quarters of the entire plant. Truly this is what nature intended, and I find it rather strange when judges try to declare various rules of proportion of how a flower should only be so big, on such and such height of plant. Mother Nature apparently has her own ideas of proportion and I like to come down on her side whenever possible.

I like to think of it as a plant butterfly. By this I mean it holds its standards high, but as the day grows it spreads these wings like a butterfly sunning itself, then as evening approaches it can lift them back upright. Each day it will do this, but each time it becomes harder to achieve the closed position. The bizarre falls are reduced in size, covered almost to the tip with velvety hairs. This reminds me of three bumblebees converging on the center of the flower. The hairs of the beard are very short when compared to those of the familiar bearded iris. They have the appearance of velvet, and the beard itself covers a broad area of the fall almost to the tip. At the end of the beard is a lighter chevron shaped area before the end of the fall. In some varieties this has been described as pink. This means this species carries some very interesting genes for color.

Because it is placed under that great group of desert irises, the *Oncocyclus*, some people assume they can't grow it. I find it is not that difficult to fulfill its needs, although you must do certain things which may seem harsh.

An Iris from the mountains of Turkey, *Iris paradoxa* can tolerate quite cold conditions in the winter. In its native land it has a long, cool spring watered by snowmelt. Immediately after flowering, the weather warms and the plant goes completely dormant. This is the time when most gardeners lose it. It must be kept very dry after flowering. I find the best solution is to grow it in an 8" clay pot, which can be

moved out of the rain at any time. This can be left outside, semi-buried through the winter or in a cold frame. During cold weather it is not essential to keep it dry, as this is when many of the feeder roots are developing. It can never be water-logged but some moisture undoubtedly helps with this root development. If one doesn't have a cold frame, a cold garage might be satisfactory since no top growth of leaves takes place during this period. Although it cannot tolerate waterlogged soil, it does not necessarily need to be protected from extreme cold. *Paradoxa* can tolerate -10° Fahrenheit or lower, as long as the soil is well drained. I believe it makes most of its growth for the following year during that short period of active growth between emerging from winter dormancy and flowering. After flowering it needs a totally dry baking rest. This is where most of us go wrong and try to push it a little further. It is also how I finally lost my plants. When hot weather arrives these iris want to go dormant or rot; the choice is with the gardener.



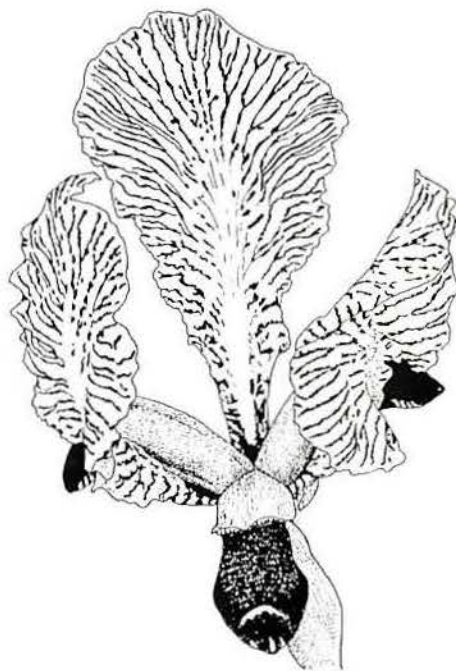
form known as 'Choschab' drawn at left. The Choschab form seems to have been more widely distributed to gardeners and was introduced by The Van Tubergen Nursery in 1901. Although 'Choschab' is said to be pure white on the standards, it can have a little purple veining at the base. This can be so variable that some forms have very strong purple veining throughout, which gives them a tiger-like appearance as shown to the right. These have not been given a varietal name although they certainly appear distinct.

There is also a very rare, yellow standard form with honey colored hairs on the falls. This has previously been referred to as the Jolfa Form reflecting where it was first collected. Someday I would like to grow a variety of these of cultivars but they are not common in cultivation despite the fact they really are not that difficult to grow.

It may be difficult to obtain plants of *Iris paradoxa* since it is quite rare in cultivation. Seed although a possibility has some distinct drawbacks. Oncocycluses were shown by Dykes to take as long as 16 years to germinate. A small proportion do germinate the first year but after that you may be in for a very long wait. Excising embryos and growing them on media is a way around this but still not for the faint of heart. Truly rhizomes are the easiest way to receive plant, but I know of no nursery currently growing these in any quantity.

The soil needed to grow these plants does not seem that special to me, since I live on the edge of the interface between prairie and oak-hickory forest. But for those in wetter climates, I would advise the following: well-drained soil with manure and dolomitic limestone. Oncocycluses of all types are notorious for needing very fertile soils, hence the manure. These semi-desert plants also come from areas where the soil is very alkaline and high in calcium. These natural soils are also rich in micro-nutrients. Magnesium found in dolomitic limestone is one of these although there maybe others that are equally important. By well drained I don't mean that one should exclude clay. Clay particles are particularly good at holding nutrients and some water, even when the soil appears totally dry. For this reason, I would add some clay to the typical soil available in the United States.

The plant is variable in coloration. The form pictured at the beginning of this article is an unusual variant known as var. *atrata*. It has dark black purple standards and falls. The more common variety appears to have standards of lilac. Color can vary all the way to a pure white



Hybridizing with paradoxa

Iris paradoxa Steven, variations of the species;

'Atrata'
CHOSCHAB
'Jolfa Form'
MEDWEDEWI
'Mirabilis'
'Paradoxa'
PARADOXA ALBO-LUTESCENS
PARADOXA VIOLACEA

Iris paradoxa crosses:

With Section *Iris*;

Iris paradoxa X *Iris variegata*
PARVAR (Foster, 1900)

Iris paradoxa X *Iris pallida*
ALKMEME (Dammann, 1896)
HAMADAN (Foster, 1909)
LADY LILFORD (Foster, 1916)
PARPALL (Foster, ?)

Iris paradoxa X *Iris sambucina*
PARACINA (Foster 1901)
PARSAM (Foster, 1905)

With Section *Regelia*;

Iris korolkowii X *Iris paradoxa*
CAMILLA (Van Tubergen, 1923)
CLYTEMNESTRA (Van Tubergen, before 1925)
SIRONA (Van Tubergen, before 1907)

Iris paradoxa X *Iris korolkowii*
PARKOR (Foster, before 1895)

With other *Oncocylus*;

Iris camillae X *Iris paradoxa*
FIRST SERGEANT (Luella Danielson, 1987)

Iris iberica X *Iris paradoxa*
IB-PARAD (Van Tubergen, 1894)

Iris paradoxa X *Iris iberica*
PARADIB (Van Tubergen, 1894)

Iris iberica and *Iris paradoxa*
'Koenigii' (Sosnowsky, 1938)

Iris paradoxa and *Iris sari*
SHADRACH (Barr, 1903)

Iris paradoxa and *Iris acutiloba*
'Zuwendicus' (Grossheim,)

Further generation *Iris paradoxa* crosses

TB X (*Iris paradoxa* X *Iris pallida*)
'Cactiforium' (William Aylett, 1932)
EMILY PYKE (William Aylett, 1933)

(*Iris lortetii* x *Iris paradoxa*) X Onco hybrid.
CHARMING CHICK (Luella Danielson, 1990)

(*Iris korolkowii* x *Iris paradoxa*) X (*Iris korolkowii* x *Iris mariae*)
CLOTHO (Van Tubergen, before 1915)

(*Iris paradoxa* x *Iris pallida*) X (*Iris iberica* x *Iris germanica*)
DON RICARDO (Rosenzweig, 1964)

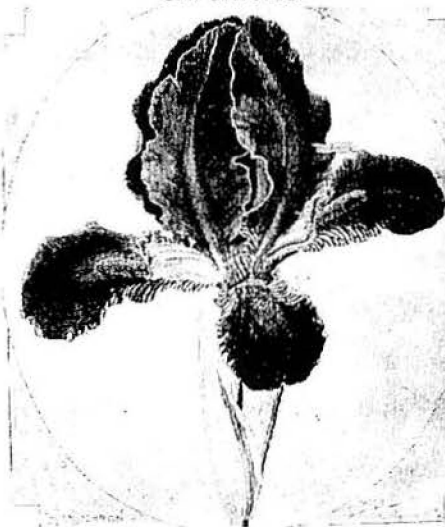
TB X (*Iris korolkowii* X *Iris paradoxa*)
REGAL PLUS (Mayberry, 1970)



Iris 'Parsam' drawn from *Memoir 100*

At left is a summary of the recorded variations of and crosses with *Iris paradoxa*. It is quite logical that an easy species to grow like *I. paradoxa* might have been tried in more crosses, but this does not seem to be the case. Perhaps the form of *Iris paradoxa* was a bit too unusual for all but the most adventuresome hybridizers. Maybe its rarity in cultivation has also limited its use.

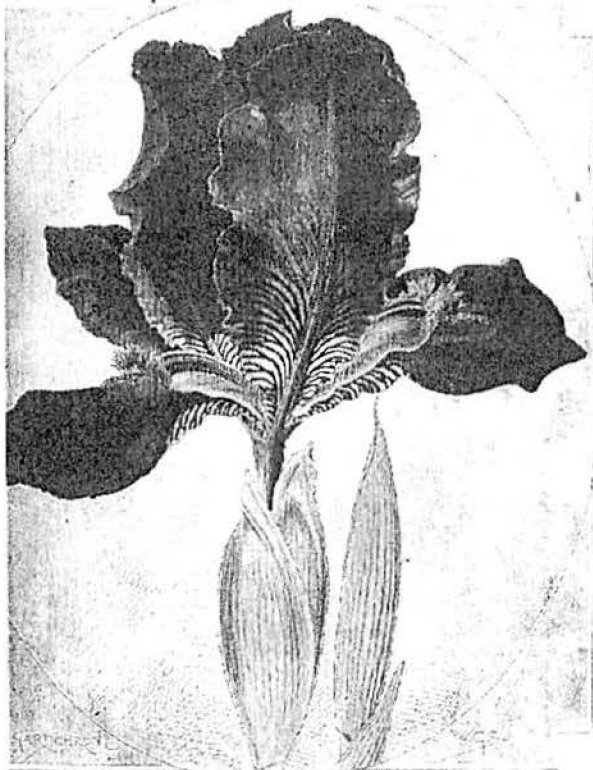
Iris 'Alkemone' from *Gardeners' Chronicles*



There are several types of crosses in which *Iris paradoxa* has been involved.

Crosses with Section *Iris*:

Crosses with bearded irises in the Section *Iris* would give what are commonly called halfbreds. One would expect these to be almost as easy to as their bearded parents.



Iris 'Parvar' from Gardeners' Chronicles

Sir Michael Foster crossed *paradoxa* with several of these bearded species. Foster is the only person, I believe, who has been knighted for his work with iris. He was an avid collector, grower, and experimentalist. So it is not unexpected that when he obtained *paradoxa* he immediately tried it with species he had at hand. His life spanned the era of the most active collection of new species and because of his extensive network of correspondents, he along with his friend Dr. Gilbert Baker at Kew are probably responsible for the description of more new *Iris* species than anyone. He was the mentor of Dykes and probably equaled or surpassed Dykes' achievements. To this day Irisarians are honored by receiving the Foster Memorial Plaque for hybridizing. It would be interesting to know what such an eminent hybridizer's goals and expectations might have been for these crosses. Certainly the black velvet beard covering most of a fall could have been an interesting feature.

Foster crossed his *Iris paradoxa* with *Iris variegata*, *Iris pallida*, and *Iris sambucina* in this group. The offspring, somewhat intermediate

between the parents, had falls which were always flaring, and reduced in size, although not to the extent of the *paradoxa* parent. I can find no color pictures of these plants but three of them are represented by fine line drawings in the literature. 'Alkemene' and 'Parvar' in the *Gardeners' Chronicles* and 'Paracina' in 'The Garden' and a fourth, 'Parsam' is photographed in black and white in the *Memoir #100* of the Cornell Agriculture Experiment Station 1926 which I have redrawn in the accompanying figure. All of these were shades of dark violet-purple. 'Parsam' had brown haft reticulations. In habit these early



THE NEW IRIS PARACINA. (Reduced.)

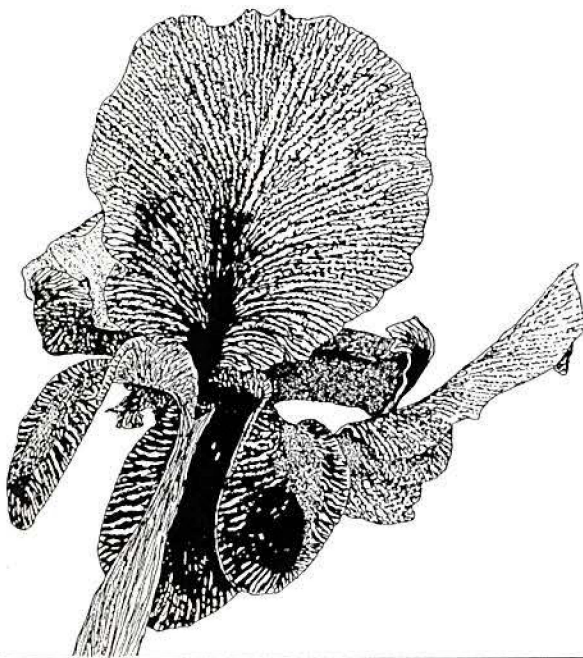
Iris 'Paracina' from The Garden 1

arilbreds seem more like the "true" bearded species than the Arillate *paradoxa* parent.

Foster seemed to be impressed by the black color of 'Lady Lilford', but I have found no record that he used these cultivars in further crosses. About thirty years later (1932) William Aylett apparently used 'Lady Lilford' to produce

'Cactiforium' but it apparently was never registered and I could find no description. He did register 'Emily Pike'. These paradoxa arilbreds seem to be hardy enough to still be extant, perhaps as curiosities in some garden.

Most of these halfbreds were about 15 inches



**'Ib-Parad' redrawn from The Garden
1904 1**

tall. One cannot help but wonder if someone crossed paradoxa with a dwarf species or a Standard Dwarf bearded today whether one couldn't produce a plant more tolerant of summer moisture but with the look of paradoxa. This would make an interesting rock garden plant.

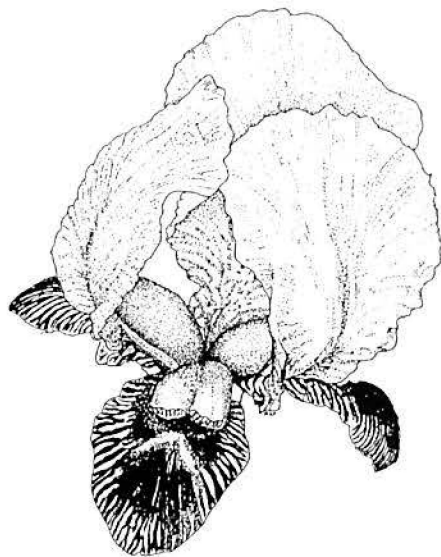
With Section *Regelia*:

Again Sir Michael Foster lead the way with his 'Parkor'. The firm of Van Tubergen, and several generations of the family Hoog, experimented with producing a more durable garden Oncocyclus by crossing with the very hardy, *Iris korolkowii*. The vast array of Regeliocyclus Irises they produced were all named for Greek characters, gods, and demi-gods. They proved to be intriguingly beautiful garden plants and some have lasted to today. These regeliocyclus are intriguing for the interesting venation on most of them and it is strange that C.J. Van Tubergen's favorite type of iris would not have been reproduced by many others. I could find no illustrations of any of the regeliocyclus that used paradoxa as a parent.

Crosses with other *Oncocyclus*;

Van Tubergen crossed *Iris paradoxa* with *Iris iberica*, trying the cross both ways with paradoxa as pod parent and as pollen parent. He named them using the format that Foster had developed of combining the species names. Thus, we have 'Ib-Parad' and 'Paradib'. This method of naming cultivars later caused problems when scientists changed the species names. Consequently the International Code today prohibits this type of name formation for cultivars, although it can still be used for groups. But after over a hundred years of use by Iris enthusiasts these old compound names are conserved by the code. As tempting as this long history is, using this format for new names is discouraged by the International Code.

'Ib-Parad' was favored by van Tubergen over 'Paradib'. We know today that very different results can be obtained from the same cross depending on which parent was the pod parent. I have redrawn the drawing from The Garden since a direct copy did not reproduce well. Neither illustration shows the fact that that 'Ib-Parad' has a ^ shaped "chevron" of dark reddish color noted in the text. It was also noted that the seed required two years to germinate.



It is surprising that modern hybridizers have not used paradoxa in crosses with other oncocyclus. Luella Danielson stands alone as the only hybridizer to use *I. paradoxa* in the last sixty years, in an effort to bring greater hardiness to her oncocyclus crosses. 'First Sergeant' stands apart as a unique and interesting pure Aril hybrid.



Siberian-Species Convention 2003

By Hao Chang – Bethel, Connecticut

The triennial convention showcasing siberian and species iris will be held June 12 – 15, 2003 in Ontario, Canada. This will be the first national convention to feature species iris since the 1996 convention in Massachusetts.

Registration will begin on June 12 at the Sheraton Hamilton hotel and will be followed by an evening reception at the Royal Botanical Garden. Garden tours will take place Friday and Saturday, June 13 and 14. An awards banquet will be held Saturday night, with separate awards for Siberian and Species in recognition of individual hybridizers. Judges training will take place Friday evening (classroom) and Sunday morning (garden) for interested members.

The main iris display garden will be located at the Royal Botanical Gardens (RBG) in Burlington/Hamilton, Ontario, in the Laking Garden. In addition to their permanent collection of over 500, mostly TB irises, the Laking Garden is the home to the RBG's extensive peony and heritage perennial collections. The Sondra Cornett Peony collection includes a wide range of both tree and herbaceous peonies, some of which will be in flower, and will complement the iris bloom during the convention. The Heritage garden is fashioned after a southern Ontario garden at the turn of the century, when Canadian gardeners were adopting the Victorian gardening style of the time, incorporating formal beds of colorful annuals. Heirloom plants dating back to the turn of the century are used in the garden.

Also featured on the tours will be two host gardens: the Chuck Chapman Iris Garden, a commercial garden in Guelph Ontario located slightly north of the RBG, and McMillen's Iris Garden in Norwich, Ontario, another commercial garden to the southwest. The McMillen garden, set on 15 acres, features over 1000 varieties of iris, ranging from the medians to Tall Bearded to Siberians.

The fourth convention display garden will be on the grounds of the University of Guelph Arboretum. In addition to the main attraction, the irises, the arboretum offers numerous nature trails, a Japanese garden, the Gosling Wildlife Garden and an extensive collection of 2,900 kinds of trees and shrubs to explore.

For the guest irises, among the newest and best Siberians, there will be a number of noteworthy species and species crosses. From Tony Huber, guest irises include two selections of *I. pseudacorus*: TOP PIC and SUN CASCADE, and several species crosses: JOLIETTE, LAVENDER BLEACH, LAURENTIAN SUNSET, MIRABEL GLOW, ORIENTAL DAWN as well as KRIEGHOFF (*I. versicolor*), ORIENTAL TOUCH, and BEE FLAMENCO (both *I. x versata*). From Monique Dumas-Quesnel, we can look forward to RED RASPA and GO GO BOY (both *I. x versata*) and CHALGALL (*I. versicolor*). From Jill Copeland, there will be several new selections of *I. pseudacorus* and *I. x robusta* (*I. versicolor* x *I. virginica*). From Schafer/Sacks, their

aptly named *Iris versicolor* VERSICLE. From Katherine Steele, the *I. pseudacorus* FOXCROFT FULL MOON. From Christy Hensler will be the wide cross (JI x Siberian) ADRENALINE RUSH.

For those who might like to spend some time on non-iris activities, a diverse range of local attractions can be found in the area. Noteworthy are: Dundurn Castle, a national historic site, which was once the home of Sir Allan MacNab, one of Canada's first Premiers. Costumed guides take visitors through the 40+ room home, illustrating what mid-nineteenth century life was like in a grand Hamilton mansion. Also located in Dundurn Park is the Hamilton Military Museum. The Canadian Warplane Heritage Museum in Mount Hope contains a large display of vintage aircraft, and boasts the only flying Avro Lancaster bomber in North America. For sports enthusiasts, the Football Hall of Fame can be found a few blocks from the hotel. Also nearby is the Art Gallery of Hamilton, the third largest art gallery in Ontario, which houses one of the most comprehensive collections of Canadian, American and international art. The African Lion Safari, located in Cambridge, Ontario, is a game reserve where visitors can drive through and see over 1000 birds and animals in the "wild"; nature tours and live animal shows are also offered.

Convention registration forms can be found on page 3542. Additional information is available on-line via a link from the SIGNA website (www.SIGNA.org). Please note that there is a limit of 300 registrants.

New updated SIGNA Checklist now available

The newly revised 2002 SIGNA Checklist of species and cultivars has just been completed. The 272-page publication is brimming with important and useful information for the hybridizer and species enthusiast. Part one lists all accepted species with descriptive notes, synonyms and chromosome numbers. Part two lists species variations and registered and unregistered hybrids of species, along with a complete description (as available) for each cultivar. A separate list of cultivars of each species is also included, as well as a listing of award winners in the species and species x classes.

Copies can be ordered for \$19.00

Carla Lankow
11118 169th Avenue, SE
Renton, WA 98059-5964

U.S. Book Rate.....\$19.00
U.S. Priority Rate.....\$20.50
Canada.....\$23.50
All Other Countries...\$25.50

Photo Contest

Open to all SIGNA members

Here is your chance to show off your best photograph or to take that photo that you have been dreaming of and get it published in our SIGNA Bulletin with full credits to the photographer (YOU). All photos must be of your own work and must be in one of two categories: Species or Species X. Be sure to note on the back of your photo or along with it the information about the plant that you are photographing the name or type of plant, where the photo was taken, and of course your name and address. They may be prints or in digital format. If they are in digital format, they must be at least 600 dpi or more for a 4" X 4" size print. Prints may be 3" x 5" or 4" x 6".

All entries must be received by August 1st of 2003.

We will have awards for three places in each of the two categories and one overall grand prize. Winners will be published in the fall 2003 bulletin. Please send all entries to:

SIGNA Photo Contest
P.O. Box 250
Molalla, OR 97038-0259
Or email them to: gardens@molalla.net

We will have an award-winning panel of judges awaiting your submissions.
So start planning that award winning photo and be sure to send it in!

Membership Challenge

An organization like SIGNA is only as vital as its membership.

To further our goal of promoting species irises we must continue to attract new members.

SIGNA's president Will Plotner, has challenged our officers and board of directors to each recruit five new members this year.

We, in turn, would like to challenge you, the membership, to each recruit one new member. Surely you know one person with an interest or knowledge of species iris that would enjoy a membership to SIGNA. It could be a neighbor, a coworker, or a member of your local iris society. If you are looking for a gift for that special irisarian, SIGNA also makes a great gift!

We've enclosed a membership application in this newsletter to make it easy.

As an incentive, two copies of the new edition of the species iris checklist will be given away.

Write your name at the bottom of the application to be included in the drawing.

Thank you for your efforts to keep SIGNA going strong!

Siberian-Species Convention 2003

REGISTRATION FORM (form updated as of August 21, 2002)

Burlington/Hamilton, Ontario, Canada JUNE 12-15 2003

To easily print this form please use the print function provided on your web browser.

IF MORE THAN TWO REGISTRANTS PLEASE USE A SECOND FORM

Registration includes: garden tours, welcome and awards banquets, judges training, special speaker(s).

NAME OF REGISTRANT 1

NAME OF REGISTRANT 2

ADDRESS

CITY

STATE/PROVINCE

ZIP/POSTAL CODE

COUNTRY

TELEPHONE

E-MAIL

CONVENTION REGISTRATION FEES

\$135US/ \$200CDN per person x _____ persons postmarked prior to April 1 2003

\$175US/ \$250CDN per person x _____ persons postmarked April 1 – April 30 2003

Please note that registrations are LIMITED to 300 - additional registrants will be notified and placed on a waiting list.

PLEASE CAREFULLY NOTE CURRENCY OPTIONS - US residents remit US funds, Canadian residents remit in CDN funds. Full registrations only. Sorry, we will be unable to refund registration fees after April 30, 2003. Credit card registration is not available. Please remit by check or money order. No cash

TOTAL AMOUNT ENCLOSED \$

make all checks payable to: **Siberian-Species Convention 2003**

Please complete the following to help us plan the events:

Main banquet dinner choices: (CIRCLE SELECTION)

REGISTRANT 1: VEGETARIAN LASAGNA, ONTARIO TURKEY, PRIME RIB

REGISTRANT 2: VEGETARIAN LASAGNA, ONTARIO TURKEY, PRIME RIB

Please register _____ persons for the classroom Judges Training session on:
Friday June 13, 2003 7:00PM-8:30PM

Please register _____ persons for the garden Judges Training session on:
Sunday June 15, 2003 10:00AM-12Noon

Mail this completed Registration Form to one of the convention registrars: A confirmation letter will be sent out to all registrants.

USA residents:

remit in US funds and send to:
USA Registrar, Peter Weixlmann,
280 Seneca Creek Road,
West Seneca, NY 14224

CANADIAN residents:

remit in CDN funds and send to:
Canadian Registrar, Pat Loy,
18 Smithfield Drive,
Etobicoke, ON M8Y 3M2

For administration use only:

Registration received on date:

Confirmation letter sent out on date:

Notes: