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THE REVIEW
OF
THE SOCIETY FOR JAPANESE IRISES

Contents

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THE PRESIDENT'S LETTER

The 1981 Japanese iris bloom season is rapidly approaching and this is the time to share their beauty with others. It would be nice if each member would take the time to obtain just one new member. All that is necessary to increase the popularity of Japanese irises is to bring their beauty to the attention of other flower lovers. An application of balanced fertilizer, such as 5-10-10 for instance, will improve your bloom especially next year.

Please support THE REVIEW. Send your Editor Japanese iris information from your area.

Adolph J. Vogt

Extending the Blooming Season and Prolonging Flower Longevity of Iris kaemoferi

Dr. William L. Ackerman & Margot Williams*

We at the U.S. National Arboretum have been involved with the breeding and development of the Japanese iris, Iris kaempferi, for approximately two decades. The stock from which our program was developed consisted of 395 plants grown from seeds of choice garden hybrids of the Kumamoto strain obtained in 1956 from the Seiko-en Nursery, Kanemoru, Hiroshima-ken, Japan. During the past three years several introductions of iris plants from Japan have provided us with specimens of 65 cultivars developed primarily by Dr. Shuichi Hirao of Zushi-Kanagawa and Dr. Kozi Tomino of Nagoya, Japan. These additions to our collection have greatly expanded the genetic base of our breeding program.

Although we have tried to follow a number of objectives in our efforts toward producing better Japanese irises, only two of these will be discussed here; (a) extending the blooming season of our progenies, and (b) developing clones with individual flowers that last longer than those of others.

Most quantitatively inherited characters are controlled by multiple genes while qualitatively inherited characters are much more likely to be controlled by single genes, or at the most, two or three interacting genes. Since the time of blooming is progressive (may vary from early to late season in daily increments within a group of seedlings) and flower longevity may also vary, both must be considered to be quantitatively inherited. To accomplish our objective we needed to accumulate as many genes as possible expressing the desired character in one individual. This was attempted by bringing together those individuals approaching the desired character and concentrating them by imbreeding through selfing, sib-crossing, and back crossing.

* Research Horticulturist and Horticulturist respectively, U.S. National Arboretum, Agricultural Research, Science and Education Administration, U.S. Department of Agriculture, Washington, D.C. 20002.

BLOOMING SEASON

Japanese irises as grown at the Arboretum usually begin blooming during mid-June, shortly after the bearded irises are at their peak, and continue until mid-July, or approximately one month's duration. Environmental conditions such as temperature, moisture, and soil conditions which vary from year to year can change the length of time the irises are in bloom. Back in 1959, when we first took records on our original population, the blooming period lasted only 20 days from first to last flowering for the progeny. At that time we were not aware that this was actually about two-thirds of what one might expect from a random population. We did, however, feel that something might be done to prolong the season so that flowering would take place over a longer period of time. A logical approach was to self and cross the earliest blooming clones among themselves, and do like-wise among the late blooming clones. Progress during the first several generations appeared to us at the time as reasonably promising. By the second generation (F_2) our season had been increased to 33 days. This is approximately equivalent to the blooming period described for this species by Dr. K. Tomino (2). Thus we had taken two generations to arrive at a blooming season equivalent to that considered normal in Japan. If this proves nothing else, it demonstrates that a breeder should be thoroughly familiar with the existing potentials of the plant material with which he is working before expending much time and energy on it. Increases in blooming season length during the next several generations were not very spectacular. In fact, it appeared that we had reached a plateau and perhaps the limitations of the species. This condition held true through the F_4, which had a blooming season of 37 days. However, records for the F_5 generation taken in 1978 and 1979 averaged 62 days for the general blooming season, with a scattering of very late blooms extending to 95 days after the first clone bloomed. Since many of the very late bloomers were young plants coming into flower for their first time and a few were determined to be re-bloomers, we did not attribute too much significance to many of the late stragglers. There were some, however, which could not be readily discounted on the basis of either of these two conditions.

The summer of 1980 was unusually hot and dry with prolonged high temperatures during parts of late June, July and August. A number of weather records were broken that year. Our Japanese irises started blooming early with the first flower records taken on May 30. Although the early part of the blooming season appeared otherwise normal, we feel that the latter part was considerably shortened. None-the-less, the general blooming season lasted 56 days with a scattering of late blooms extending the season to 74 days. As in the 1979 season, a number of the late season flowering clones were re-blooming types having had their first set of blooms in mid-June and a second set in late July.

Various explanations might be proposed as to why we showed so little progress in extending the blooming season between the F_2 and F_4 generations and then obtained a sizable increase in the F_5. The senior author's opinion is that it took these several generations to bring together the genetic alleles working toward either (a) earlieness or (b) lateness, and it was not until the F_5 generation that we actually got the proper combinations concentrated into individual seedlings. A related observation is that far less progress was made in advancing the dates of first bloom to earlier spring blooming, than in retarding the dates to later summer blooming. Perhaps this is actually for the best, since earlier blooming Japanese irises would come into competition with the bearded irises, whereas extending the season into later summer offers no such problem.

CLONAL FLOWER LONGEVITY

A disadvantage of the Japanese iris is the short lifespan of the individual blossoms. This averaged two to three days among our original population, which we understand is considered about normal for the species. This compares to three to six days for many bearded irises. Increased flower longevity may encourage more gardeners, to plant Japanese irises. In the early 1960's we decided to see what might be done to genetically influence flower lifespan (1). A survey was made of our seedlings while in bloom and a number of potential breeding parents selected for evaluation. The following season floral longevity studies were made for each seedling by tagging each individual flower as it began to show color. Daily flower sequence data were recorded on each tag, beginning with full bed and extending through four stages of development to the fading of the flowers. A minimum of ten flowers were tagged for each clone; at most several dozen flowers. It might be noted that this was a very time-consuming and tedious job involving observations seven days a week. To miss one day's record meant a loss of complete records for several days before and after the missing day. The average lifespan of flowers on individual clones varied from one to five days, with the greatest number lasting from two to three days. Thirty-nine seedlings of fair to good floral quality with average lifespans of four to five days were selected, moved to an isolated location, and allowed to cross among themselves. Plants resulting from these crosses constituted an F_2 generation. Flower longevity among the F_2 seedlings varied from two and one-half to five days, with the greatest number lasting from three to four days. All seedlings among the F_2 population with flowers that lasted less than four days were destroyed, and the following year the remaining plants were allowed to cross among themselves, resulting in an F_3 generation. Flower longevity among the F_3 seedlings varied from three to five days, with the greatest number again lasting from three to four days. Although the average floral longevity was advanced one day (from 2 to 3 days to 3 to 4 days) among the F_2 seedlings compared to that of the original population, little improvement was gained in the F_3. At this point the study was terminated because of a shortage of help for such a time-consuming job and the strong probability that only diminishing returns might be expected from continued efforts. Although an occasional flower on some F_2 and F_3 seedlings lasted six days, it appears that five days may well be the limit of flower longevity, at least for the Kumamoto strain used in this study, and possibly the limit for the species.

Literature Cited

1. Ackerman, W.L. 1973. Japanese iris with five-day blooms. Amer. Hort. 52(1): 18-19

2. Tomino, K. 1963. Studies on the Genus Iris in Japan, especially cytotaxonomy of the genus and breeding of Iris ensata Thunberg. Bull. of Lib. Arts Dept. Mie Univ. No. 28, Tsu, Japan.

BEE WARBURTON WRITES

"While working on an index of the first decade of the AIS Bulletin, I have come across a few items such as the enclosed, that still seem pertinent and interesting enough to reprint. This whole article is perhaps of interest, but anyway, the enclosed interests me mightily because of the little known fact that wild iris kaempferi is mutable to a greater extent perhaps than other species which is, of course, the reason that the Japanese were able to build such a terrific body of variable horticultural forms in such an incredible short time.

"The following extract is exceptionally interesting to me because Michio Cozuca has sent me from Japan a collected form of I. ensata (kaempferi) with five parts. It has the narrow red-violet petals of the usual wild plant, but has not bloomed for me. As Cozuca mentions a bitone form of wild kaempferi, I have written to ask him to write up these unusual forms for the AIS Bulletin.

"The following excerpt was written by B. Miyazawa and appeared in the AIS Bulletin of October, 1925:

'Usually the parts of the iris flower are arranged in threes but in one variety, JUNI HITOE, they are arranged in fives, that is, inner and outer segments, stamens and pistils, even the chanbers of the ovary, are five in number, although occasional flowers are normal. It is a red-purple with yellow at the base of the segments and breeds true when self-fertilized. When crossed with a single flower, however, the second generation shows some plants with six petals (generally called double-flowered), some normal and some that are pentapetalous. There are also other curious forms in which the outer segments do not open but stand erect uniting and forming a rather ball-shaped flower. These are, however, only curiosities, even in Japan."

Editor's note: Plate 77 in THE JAPANESE IRIS, Kuribayashi and Hirao, shows JUNI HITOE. On page 28 of the English text the authors refer without specification to "other unusual forms with four, or five, petals"

Seed Size of Miniature Japanese Irises

Currier McEwen, M.D.

Although I have hundreds of seedlings of what I refer to as miniature Siberian irises, i.e. flowers not more than three inches (7.5 cm.) in diameter on stalks seven to fifteen inches (17.5 to 37.5 cm.) tall, I have found only two miniatures among my seedlings of Japanese irises. These two sister seedlings, 73/22 A and B, came from seedlings going back to mixed seeds sent to me by Dr. Suichi Hirao and Mr. Arlie Payne in 1963 and 1964, and came from crosses made with no thought of obtaining miniatures in mind. Unfortunately their parents have been long discarded and my notes record merely that one was white and the other a marbled reddish-purple and I have no record of their size. The two miniatures are essentially identical in form, height and size of flowers, but one is white and the other wine-red. Both are single with flaring falls of open type. In both, the three inch (7.5 cm.) flowers are carried by fifteen inch (17.5 cm.) stalks.

I made a number of crosses of one by the other and each one selfed. A striking feature of the several hundred seeds from these crosses is their small size, measuring an average of 5x4 mm. in diameter compared with average

diameters of 10x8 mm. for seeds from other diploids of standard height and size of flowers. I have previously noted that similarly small seeds have been a consistent feature of those from my crosses of miniature Siberian irises and wonder, therefore, if this is a characteristic of miniature forms of both Japanese and Siberian irises. If this has been observed by others, I will appreciate learning of it.

PREPARING FOR THAT SHOW --

It is not too early to be thinking about that Iris Show. We are taking the liberty of passing on some tips on "SHOWING". These were written by Ron Mullin, new A.I.S. 1st V-P, for use in a 1978 issue of the Region 2 NEWSLETTER. We don't have room for all of Ron's exact words, but we hope we can convey his message.

Long before show time, begin a program. Give your Irises fertilizer so they will grow to proper size. Clean out the beds so there will be fewer insects to bother and there will be no interference from weeds and grass. Spray to get rid of insects. Water before and during the blooming season if the rains do not come.

Now for the Show -- "First, an iris is judged according to perfection for that particular variety. That means you must have the name of the iris to enter it in the show". Don't expect someone at the show to identify it for you. "If you do enter a variety, the judge will determine its merits according to whether it is right in color, height, bloom size, etc. More than the flower is considered."

"When selecting an iris for show, see that the stalk is straight. It should have branching which is far enough away from the stalk to keep the flowers from appearing improperly formed because of interference with the branch." Ideally, there should be a terminal (top) blossom. "Two flowers at one terminal are worse than one of mediocre form".

"When you find a stalk with a flower in good shape, a straight stem, and all the other elements of a good specimen, cut the stalk to the proper length. The stalk should be cut almost at ground level -- not so low that the rhizome will be damaged." Never cut the stalk too short. "If the variety is supposed to grow 36" high, and your entry is only 24", your chances of winning are not good."

There should be no insect damage to any part of the show entry. It will cost you points. A good spray program will cut down this problem. "The flower should be fresh and have no damage such as tears or breaks. There should be no discoloration such as spots caused by weather or because of age. (Ed. note: Be especially careful when getting to the show.)

Check the garden several days ahead of the show date for those which look as if they might make good show entries. With the wind storms that we have or the sudden downpours of rain, you might have to cut the entry the day before the show. "A little sugar in the water will help preserve the flower, but don't expect to cut a stalk a week ahead and still have it in perfect condition just because you put sugar in the water. Refrigeration helps to keep the flower from opening too quickly, so shove the food aside and put those show winners in the refrigerator." If you wrap a bud to keep it from opening too soon, wrap it loosely.

Now that you have that would-be prize stalk, "be sure it is clean." Use a damp cloth to wipe the stems. All irises have a white substance on the stems, and this is easily removed by using the cloth. The cloth will also remove the residue from spraying, also any dirt that may be on the stems. The flower itself should also be clean, and the best method for cleaning is to use a small watercolor brush or any other brush that is small and soft. When cleaning the flower, look for aphids. Try to get rid of all of them.

"Arise early on show day. There just may be a good entry in the garden that you did not see the evening before. Also, that prize winner in the kitchen may not have opened overnight. If it didn't, place it in warm, not HOT, water; or, if it is almost open, gently blow on it to help it open."

Editor's note: The above article is copied with permission from the Region 6 Newsletter after being condensed from an article in another Regional Newsletter. It is understood that Ron Mullin was the original author.

KALAMAZOO JI SHOW

The 8th Kalamazoo Japanese Iris Show will be held Saturday, July 11, on the West Main Mall in Downtown Kalamazoo. Entries will be taken from 8:00 to 10:00 AM and the Show will be open to the public from 11:00 AM to 7:30 PM.

The theme for the Show will be Hanashobu. Artistic arrangement classes will be based on the names of Japanese iris introductions from Japan. For instance Mai Ohgi (Dancing Fan) might be used for an arrangement featuring motion and rhythm. Horticultural classes will be open for any type of iris in bloom at the time.

Further details for the Show are incomplete as we go to print. Show schedules may be obtained from the Chairman, Mr. Leland M. Welsh, 1003 Newton Ct., Kalamazoo, MI., 49008.

SUMMERVILLE, SC., IRIS SOCIETY JI SHOW

The 3rd JI Show of the Summerville Iris Society will be held Saturday, May 30 in the Community Building, 101 West 5th St. in West Summerville, SC. Entries will be received after 8:00 PM, May 29 and from 7:00 to 9:00 AM, May 30. The Show will be open to the public from noon to 8:00 PM, May 30.

The Horticultural part of the Show will have sixteen JI classes and five for other species plus one for seedlings and one for container-grown plants.

The theme for the Artistic section will be VIPs of Japanese Irises. Five well-known JI personalities will be honored: Walter Marx, W. A. Payne, Fred Maddox, Adolph Vogt and Arthur Hazzard. Irises used in the artistic division need not be grown by the exhibitor.

The $25.00 registration includes refreshments Friday evening and on Saturday breakfast, bus trip to Swan Lake Iris Gardens, lunch, supper, the JI Show and the Ikebana Show in the Garden Center at Sumter. The Ikebana Show will consist of arrangements by the Ikebana Arrangers.

JI Judges training sessions will be held at the Test Garden and Sumter Garden.

Mrs. Wells E. Burton, 210 Miller Drive, Ladson, SC., 29456 is Show Chairman.

GUEST JAPANESE IRISES WANTED
1984 AIS CONVENTION

Mrs. George F. Lankow

King County Iris Society and the Pierce County Iris Society of the Puget Sound Area will be hosting the 1984 AIS Convention in Seattle. We will be inviting guest bearded irises in 1982 but we can accept plants this year and encourage you to send beardless irises this year so they may be seen on representative plants.

Experience leads us to believe that it often takes an extra year for irises to adapt to our climate, but once established, almost all types just love it here. Arils and many arilbreds don't care for our climate, but just about everything else does and we should have enough variation in peak bloom season among our display gardens to see a wide selection of types.

We ask that you:

1. Send 1 to 4 plants of each variety.
2. Send official guest irises to Guest Iris Chairman, Mrs. George F. Lankow, 725 20th Ave., Kirkland WA., 98033.
3. Include the hybridizer's name, address and phone number, name or seedling number of the variety, type of iris (Siberian, Louisana, Japanese, etc.) and year of introduction.
4. When seedlings under number are named before the Convention please notify the Guest Iris Chairman before November 1, 1983 so that labels may be changed.

A receipt will be mailed to all contributors. A growth report will be sent so that losses may be replaced. Contributors will be asked for disposition of plants after the Convention. Failure to reply will be considered an order to destroy the stock. Guest plants will be returned at the contributor's expense.

The Convention Committee and Guest Iris Chairman cannot take the responsibility for loss of plants that fail to grow, but we will take every precaution to protect contributor's guests.

FOR THE RECORD

W. E. Ouweneel

Most of the SJI members have probably seen my letter to the Editor of the AIS BULLETIN which appeared in the January, 1981, issue in which I disputed a statement in a recent issue of the BULLETIN stating that Japanese irises "need good drainage for low temperatures". Without repeating here twenty one years of experience detailed in the letter (twenty four in 1981) I repeat here that the quotation is totally in error.

When the quotation was made in the AIS BULLETIN in another article in 1975 I decided that irisarians were entitled to have the discrepancy between the quotation and my experience reconciled. For the last five years, like Diogenes, I have searched for someone willing and able to defend the quotation. My efforts, like Diogenes', have been fruitless.

If any reader has any explicit facts supporting or explaining the quotation, he or she is requested to send them for publication in the next issue of THE REVIEW - deadline, October 1, 1981.