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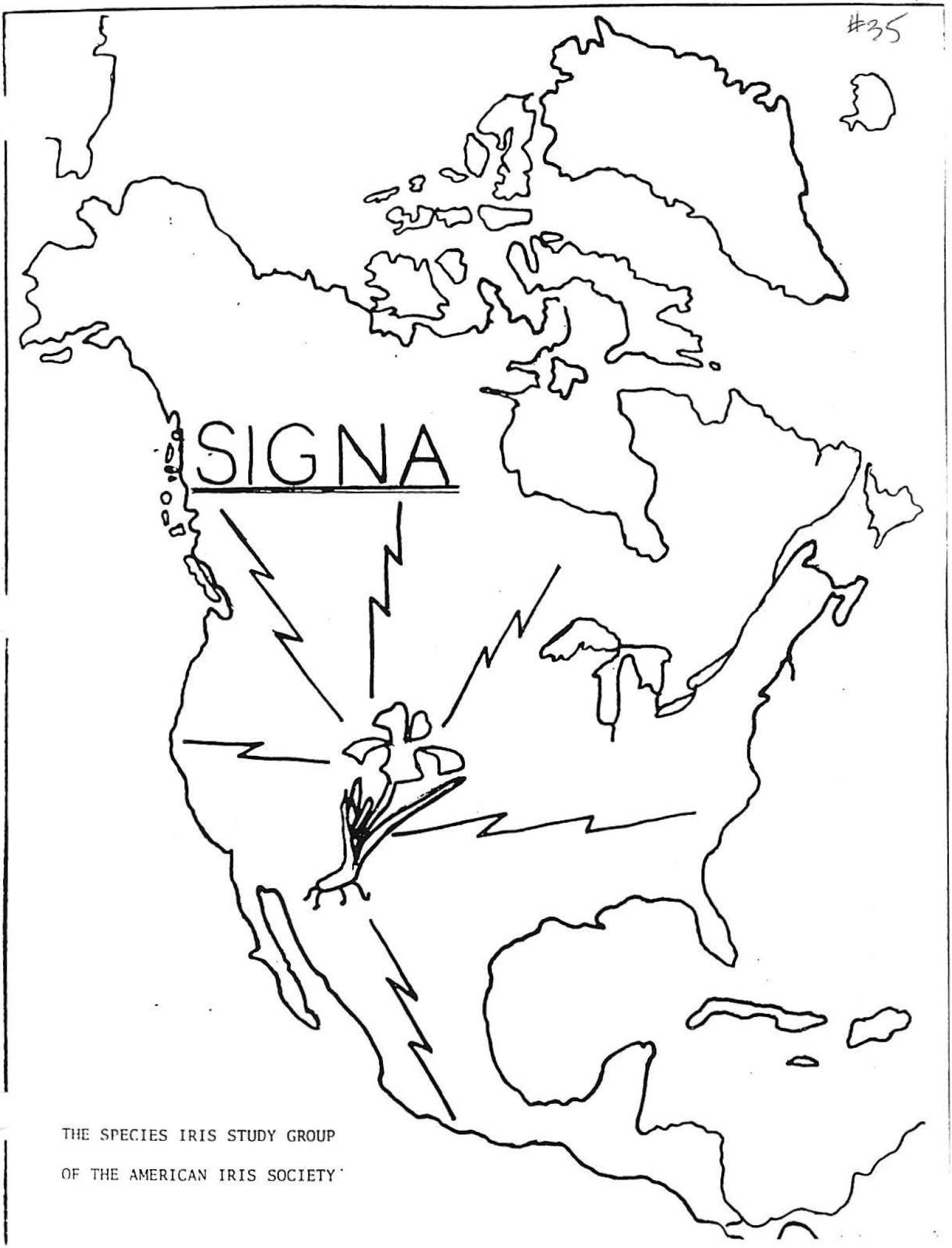

THE SPECIES IRIS STUDY GROUP

OF THE AMERICAN IRIS SOCIETY

SIGNA

SPECIES IRIS GROUP OF NORTH AMERICA
OCTOBER, 1985 NO.35

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CHAIRMAN'S MESSAGE

When I pick up the new issue of a plant journal I always look first for articles on the cultivation of this or that iris I am trying to grow, or hope some day to grow. Even just a page or a paragraph -- even a piece without an author or dateline (so that its relevance to my own situation is questionable) gets a thorough perusal. I suspect most readers of SIGNA feel the same way.

There are probably many good iris experiences out there that are not getting the circulation they deserve. Don't you find that when you met other iris growers you can talk for hours about what you've tried and they've tried -- and yet non of this ever gets on paper for wider circulation?

If you belong to a round robin, you may have slipped easily into the habit of writing informally about your irises, but have you thought about telling SIGNA? There is something about print that inhibits, in most of us, the free exchange of ideas. We like to be a little more certain we know what we are talking about. I must say I often wish I had not been so hasty about sending off this or that bit of iris news to SIGNA; on the other hand I keep looking for more stories of other grower's observations, wishing they would only be equally rash.

There are two sides to science, the ambition to be right and the admission that we will often be wrong. I hope readers who like to hear about rach other's work with irises will realize that we are all learners who must take turns teaching or else fall for our tastes -- not, at least, when it comes to specific problems of culture, and not at all, usually, when it comes to iris appreciation, the qualities that make us want to have an iris for our own.

The SIGNA STUDY MANUAL, outlined in these pages years ago, will try to fill the "culture" gap with information on growing a very wide range of species. But here the standards will necessarily be very high, the task is demanding, and the peiple who are planning the chapters of the STUDY MANUAL have more reason than the rest of us to sift their views and hone their opinions.

The rest of us ought to reflect that if we want to know more about, say, the Evansia irises we may be able to stimulate discussion with o question or two. And if we only know one thing for sure about keeping Juno irises in the ground over summer that may be the very thing some other reader is pining to know. So while we wait for the STUDY MANUAL let us exchange news without too much concern whether it is the last word on the subject. We like to try new things in the garden, where success or failure as we all know is a year-to-year thing. The pages of SIGNA too are hospitable to our trials and errors. Questions, discussions, suggestions and speculations are all ways ot getting at scientific truth.

Elaine Hulbert, Floyd, Virginia

APOLOGIES ARE DUE
to Ila Nunn and Ruby Buchanan

We goofed and we are sorry. Ruby's quotes of Ila Nunn's remarks re I. hexagona came out in print without full and proper credit being given to Ila for her comments originally published in the Society for Louisiana Irises First Special Publication 1941-1966. I assume complete responsibility. Part of my boo boo was due to trying to use footnotes instead of references as Ruby wrote them, in process losing some quotation marks. I am sorry!

We would like to have printed the entire article but Ila says it would not be that current in 1985; so herewith the material quoted with **boldface denoting the quotations used in Ruby's excellent article.** Joan Cooper, ED.

THIRTY YEARS WITH LOUISIANA IRIS IN TEXAS

By Mrs. Ila Nunn

Since Gulf Coast growing conditions, as to temperature, humidity and amount of rainfall are much the same in Louisiana and Texas, Louisiana irises are almost as much at home in the Houston area as in the environment of their discovery. Some species of the subsection Hexagonae are found in Texas, Iris giganticaerulea and I. fulva along the waterways of the East Coast, I. hexagona as far west as Bryan and I. foliosa as far south as Freeport. Although I am using these species designations, I feel strongly that nomenclature, classification and the relationship between the species now recognized are still subjects that await the botanists for further study and clarification.

To grow and enjoy plants is not enough for some gardeners. Being one of those described by Caroline Dormon in the foreword of her FLOWERS NATIVE TO THE DEEP SOUTH, "to whom the finding of a new flower is a real adventure, and who cannot be content until they learn its name", I find many questions about the beardless irises of the Gulf Coast still unanswered. What about I. hexagona, a designation which is not used in Miss Dormon's book nor in the most excellent brochure, LOUISIANA NATIVE IRIS, by Joe G. Richard (Agricultural Extension Publication 1017, Louisiana State University). **Is this not native to Louisiana along with those normally listed as growing there: I. fulva, I. foliosa (I. brevicaulis), I. giganticaereulea, I. shrevei, I. verna and I. virginica? Or is I. hexagona a synonym for one of these as some early botanists thought might be the case?**

GARDEN IRISES, the most recent authoritative work on irises, published by the American Iris Society and edited by Dr. L. F. Randolph, includes I. hexagona in the listing of species of the subsection Hexagonae and in other references under Interspecies Hybrids, but does not identify it further in any of the cultural articles. So although apparently recognized and present in the South as a native it remains somewhat of a mystery. The examples sent me from a pond near Bryan, Texas, look for all the world like low-growing giganticaeruleas. One can only conclude that this member of the Hexagonae, relatively unknown to gardeners, must be very closely related to the Louisianas.

In THE IRISES OF THE ABBEVILLE, LA. REGION, an article by Percy Viosca, Jr., published in the A. I. S. Bulletin 102, July 1946, I. hexagona is referred to as the western counterpart of I. giganticaerulea which he locates at this time as near New Orleans. At times he speaks of I. hexagona giganticaerulea, but this article provides the only reference I have been able to find among the several American authorities on Louisiana irises since the period of early classification by Dr. John K. Small. Mr. Viosca does not use this designation in his earlier work, THE IRISES OF SOUTHEASTERN LOUISIANA nor do Miss Dormon and Ira Nelson in early articles published by the American Iris Society. Recently I was surprised to find hexagona specified by a landscape architect for a small garden here, and decided to look further into this. As it turned out the architect had meant I. pseudacorus which does have a good landscape value, but he specified "hexagona" and so I picked up the scent. I have concluded that, if it is a separate species at all, it is very closely related to the three species called Louisianna irises, but the mystery of its omission from so many sources of information puzzles me.

(Article Continues)

This was written before I. nelsonii was made a species. (Ila Nunn's note)

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OUR READERS WRITE

Have just received my No. 34 SIGNA and as usual have read it from start to finish and thoroughly enjoyed it. I always say that it is the best value for money of any of the iris or other garden literature that I subscribe to, and I get quite a lot. After reading Roy Davidson's article on Iris Rust, I felt I should write and tell you what I have been doing for some years with very good results. I spray the irises every winter when they are dormant with Lime-sulphur, 1 part to 35 parts of water. If they are badly affected it may take a couple of years to clear it altogether and even then I still get an odd one, especially anything with Aril breeding that won't respond. But what has impressed me so much is the terrific decrease in all other disease as well. I haven't had one case of soft rot for some years now and much less crown rot and leaf spot of both kinds. I put most of the spray down at the base of the leaves and on the ground around the plant. A lot of growers in New Zealand carry out this winter spray and everyone I have spoken to thinks it is well worth doing. Of course some of the improvement in the health of my irises may be that I always wash, dip the rhizomes in Benlate and dry before planting, but I do know that Benlate won't stop rust. So far we have had a very mild wet winter, quite a change after 3 very dry ones, but it won't be so good for the irises. I just hope it doesn't mean we are going to get a cold spring, as such a lot of spring flowers are out and so many things with new shoots showing. Have several clumps of I. reticulata in bloom and I see the evansia NADA has flowers out, so it shouldn't be long before the miniature dwarfs are popping up.

Mrs. Hilmary Catton, Hawkes Bay, New Zealand

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WHAT WAS THAT QUESTION AGAIN ABOUT IRIS MISSOURIENSIS

--A SERIES--

SERIES LONGIPETALAE: TAXONOMIC HISTORY

SIGNA has recently requested input on Iris missouriensis; it seems opportune to review therefore what has gone before. These western American irises have been known by several names. Dykes had allowed four species, one by his own name published after his monograph The Genus Iris. As none has proven to hold up to close scrutiny as being consistently recognizable as separable from others, the consensus is that the Longipetalae consists of a single wide-ranging polymorphic species, the name of which must be that one longest in use -- Iris missouriensis, although the group name remains Longipetalae. For clarity we may continue to employ disused species names -- as "arizonica form," "montana form," both in formal writing and in popular discussion.

Over a century ago (1881), Baker had forecast the taxonomic destiny of the lot when he expressed some doubt that missouriensis was "anything more than a mountain variant of longipetala." In the interim, however, reported chromosome distinctions served to separate those two, at least academically, until it was found these reports did not reflect the truth of the matter. Sturtevant (AIS Bulletin 11) had felt that "further study might reveal but a single species" rather than the several of the time, and Mackenzie (AIS 104, 107; BIS Yearbook 1951) discussed the frustrations of attempting to force plants from the southern Rocky Mountains into one of another of the "molds" for species, where they did not fit at all convincingly. Moore (AIS 109) and Fisk (BIS 1955) recorded certain peculiarities of Wyoming plants, while Stinson (AIS 59) from observations in Washington state wrote that those from near Sequim on the Olympic Peninsula seemed quite different from robust and deeply colored ones east of the Cascades. Dr. Foster (Contributions Gary Herbarium 1937) was moved to lump both I. montana and I. arizonica within I. missouriensis, and Metcalf, concluding a detailed study, did likewise for I. longipetala (See World of Irises, p. 295.). Botanists characterize the Longipetalae largely by the short-cylindrical capsule on a scape that may persist for two or more seasons.

Mackenzie observed in AIS Bull. 98 (August 1949) that "the more Dykes wrote of the Longipetalae Group the more confused he got -- and with good reason." "I wish," he explained, "that he could have seen the melange that has just finished in my garden from plants collected in much of the Rocky Mountain area. A splitter like Dr. Small could make at least twenty species of them while a lumper might make two."

(See AIS Bull. 147 for more on these.)

Additional references to Longipetalae Irises in SIGNA on the following pages: 120-134-136-204-330-507-647-1070-1085.

R.D.

NATIVE IRIS IN WASHINGTON

Harry L. Stinson

Some years ago, feeling the need of quiet, after a day spent in a noisy machine shop, I took to gardening and purchased a few rhizomes of iris from one of our local growers. They bloomed and waxed strong in numbers, so much so that I gave up vegetable growing and grew flowers instead, for the Good Book tells us that man lives not by bread alone. Having no particular interest in any particular family or genus of plants. I just grew anything that presented itself. So while attending the University of Washington Summer School, I had to pass by daily a large planting of iris, and some of them tempted me so much that I would sit nearby and scheme how a few rhizomes could be removed without detection! While in this frame of mind, I made the acquaintance of the caretaker and discovered that they were just plebians in the iris realm, so I could not stoop "to lift" just common roots.

Anyway, gradually "irisitis" had me down, and I purchased the entire stock of a teacher-friend of mine who was giving up bulbous iris and giving his entire time to gladioli. Now, I was fever-hot. I had heard of wild iris across the mountains near Ellensburg, so Memorial Day the good wife packed a "box of eats" and at five A. M. we headed East in "Old Henry" for the iris quest. Surely enough, there they were, but we had to eat first, so eat we did, and started back to dig some roots. While coming back through town, by the stock yard (loading chutes in the railway) here was a white one. Oh! were we over the fence, had it dug and safely stored before the startled natives realized that they were being invaded by foreigners. That was our downfall, for since then we have searched out many roads for various iris species. On this trip we secured the blue and white Iris missouriensis.

Next adventure, we heard from a neighbor that an iris grew up on the Olympic peninsula, near Sequim, so away we went and found a couple of hundred clumps growing in a cow pasture. It did not appear to be the same that we had gathered east of the mountains, but we decided we would grow it side by side and see what it was because we could find no reference of it in any botany. It is much more robust and deeper in color than the Iris missouriensis. So, that question is not yet settled or answered.

Recently, we made a rather long trip to make a further study of the Iridaceae, and in going east, the Iris missouriensis is found in many localities along water courses and some in widely separated areas, far from water. In growth and color they vary little or none until you find them over in the Blue Mountains of northeastern Oregon, and there they have almost a pink standard -- otherwise all localities are alike.

(AIS bull 39:Oct 1935)

WITH IRIS MISSOURIENSIS AT HOME--IDAHO

Stanley C. Clarke, Idaho

It is stated in the April 1934 Bulletin that as a group the Longipetalae like a heavy loam and resent transplanting; in May, 1924, beardless on the whole were said easy to grow in "good garden soil," rarely requiring lime or good drainage! It has occurred to me that it may be of interest to describe the ecological relationship of Iris missouriensis as it grows in northern Idaho, where it is found on what is known as Caldwell silt loam, a recent alluvial accumulation derived from a wide range of rocks and minerals and consisting of reworked eolian and residual materials occupying bottoms along slow streams, but ordinarily above the flooding overflow. Natural drainage is fairly well established, but typically this soil is slower to warm up in spring, and such areas are not tillable, with the result that they are used mainly as pasture.* The upper soil horizon lies to a depth of 10-15 inches, a dark gray silt loam underlain with about three feet of a silty clay-loam of lighter color, usually of a more compact nature and generally more moisture retentive than are lighter subsoils. This may be an important factor to the species in site selection.

The soil of adjacent highlands where missouriensis is not found naturally is defined as Palouse silt loam, eolian or loessial in origin. The surface layer is generally high in organic matter while the subsoil is both heavier in texture and more compact in structure, but in many places the two (Caldwell and Palouse silt loams) are practically the same. Structure of both surface and subsoils permits ready absorption of moisture and there is little erosion on highest hills. (Alas, Mr. Clarke would be chagrined to see these slopes today.) This soil type occupies the rolling prairie usually referred to as the Palouse wheat country (mainly Whitman Co., Wash. and adjacent Latam Co., Idaho.) As virgin soil this supported a luxuriant rankness of bunch-grass with brushy growth in bottoms and on north slopes consisting of roses, snowberry, buckbrush, hawthorne, etc. The pH of Palouse silt loam is about 7 and the Caldwell counterpart is slightly acid, about 6.2. It is generally agreed that unless acidity is quite marked its effective influence is generally negated by air and water relationships.

(AIS Bull. 61: March 1936)

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*Since 1936 agricultural practices have considerably influenced such soils, with more acres cultivated; Iris missouriensis does exceedingly well transplanted to Palouse silt loam if given additional water in growing season (although in bottomlands and on north slopes it is still holding forth strongly in this Palouse country, in those places where water stress has never been of consequence --precisely as it has too in a dozen other western states in similar soils.) Soil moisture is obviously the limiting factor to distribution of the species. As mentioned, compact, retentive subsoils both hold moisture and allow it to rise to plant roots over the critical periods.

"Elsewhere in Idaho, as elsewhere in the west up to 6-7,000 ft. -- even to ten -- this species can be found hanging on in the bottoms on soils that are highly laden with salts and near -- or even within groves of aspen and cottonwood. It takes time to produce special soils for exotic species, but I do not believe this species "dislikes" transplanting -- it is more a matter of timing." (Patience is a factor also.)

(Comment by Roy Davidson)

AIS Bulletin #11 (May 1924) carries a striking photograph of missouriensis on the slopes above Bear Lake in the San Bernardino Mountains taken by the late Steadman Berry.

MISSOURIENSIS IN COLORADO

Katherine N. Marriage

As a garden-maker, I am definitely interested in Iris missouriensis. Some years ago I found a field of this in bloom, about ten or fifteen acres. At first glance it appeared to be a cloud of lavender floating over a swampy mountain meadow through which a stream of clearest crystal flowed. On closer inspection I found variations from clear white to pinky-lavender and on through many blues to lavender-purple. These being pasture weeds to the farmer, I was invited to dig and I selected some of all tints, of the best petal substance, and widest petals.

In the garden the pinky ones have been most admired but the white ones have a more distinctive quality. The lavenders and purples are excellent for massing. Foilage is slender, neat and unassuming, with flowers the size and quality suited to the smaller garden. This is a flower whose beauty is enhanced by a sympathetic background. They transplant amiably anytime here (Colorado Springs). Whole fields are always where there is underflow of water until blooming season and then gradually diminished moisture until by autumn they are quite dry. [Here in the garden] They flourish with run-of-the-garden care and since our humidity is low, artificial watering may be necessary on occasion.

Eastern gardeners have had varying successes growing them. It is quite possible that more attention to drainage may help crowns to dry off after blooming. This seems a requirement of many Rocky Mountain plants. (photograph.)

AIS Bull. 61; March 1936)

AND IN MONTANA

Julius Donnblat, Jr.

At the close of each season I like to conjure in my mind again and again the iris picture which pleased me most. This year the gorgeous patches of missouriensis along the highway leading to Glacier National Park gave me more than the usual delight. . . A quietly joyous prelude to the grandeur that is Glacier.

(AIS Bull. 66-Sept. 1937)

MISSOURIENSIS RANGE EXTENDED TO NEBRASKA

Homer Metcalf in investigation of material sent for identification by the University of Nebraska Museum has identified at least three of the collections as being Iris missouriensis, two of them rather older and one somewhat more recent. These represent insofar as we know a species not heretofore reported from Nebraska.

1989 - col. in flower in August by Bates, at Franklin, Franklin Co.
1891 - col. by Bates at Long Pine, Brown Co. (an incomplete specimen not appearing typical of missouriensis; perhaps virginica?
1951 - col. by Keiner #26896 in wet meadowland 3 mi. E. of Potter, Cheyenne Co. on 25 May (2 sheets)

MISSOURIENSIS IN BRITISH COLOMBIA

Roy Davidson

As of 1956 there were no records on file at the University of British Columbia to indicate that Iris missouriensis had ever been known within the province, but since that time a number of collections have been made. There is reason to wonder whether it has been introduced there. The earliest of the records is apparently a collection made by Eastwood in 1914 (but not of record in the university's herbarium). It is labeled as from Taku Arm of Lake Atlin, which straddles the line between the Yukon Territory, thus putting the species to a familiar "stretch" not unlike its occurrences elsewhere, with big gaps in the range, such as the recently verified Mexican occurrence. It is usual rather than unique that this plant is one of such discontinuities in its range, as also in the Black Hills, on the Olympic Penninsula and in remote but predictable stations in southern Arizona and California, all quite isolated.

In 1959 while supervising reconstruction of telephone communications through the Skeena-Bulkeley drainage of the province, David Saunders discovered a number of colonies extending over a distance of some forty miles, and specimens were made and sent to the university. Meanwhile some other locations had been made. Writing in Canadian Field Naturalist, 1966, DeVries declared that, of the four collections known to him, all had been obviously intro-

duced, and he had explained it as the result of a great influx of prospectors and workmen with various construction projects and that "tremendous quantities of rhizomes were used in herbal remedies and quack medicines." Others have put forth the idea that if introduced it might have been as seed carried in the meadow hay imported to feed livestock. But from whence?

Those who know this iris will realize that if imported rhizomes were dried out any at all they would surely never have sprouted and that when grown from seed it is a very slow and exacting species in respect to its water needs.

One of Saunders' stations was at the old town of Hazelton at the junction of the two rivers and one-time head of navigation from the salt water at Prince Rupert, a village relocated as New Hazelton in 1866 when the Collins Telegraph located a construction camp there. Shortly thereafter the Grand Trunk Railway built a line through the Bulkeley Valley and over the summit to connect the productive inland agriculture with coastal shipping, followed by ever-widened highways alongside. Irises could well have waxed and waned in open meadowland, of which little is left now. Saunders had reported the colonies in very poor survival condition as if they were on the margin of their habitat conditions.

There are some other (unverified) reports of occurrences in British Columbia; altogether they constitute a pattern of distribution in the kind of bottomland where the species is found flourishing elsewhere. It does seem entirely possible they are natural populations.

Known colonies recorded:	1914 - Eastwood - #648 Taku Arm, Lake Atlin	59°35N
	1959 - Saunders - 1/2 mi. E. of Quick Sta.	ea.55°N
	1959 - Saunders - 20 mi. S. of Hazelton	
	1959 - Saunders - Prince George	ea.45°N
	1959 - Saunders - Bennett	59°50N

Reported also in Wells-Gray Provincial Park.

YELLOW-FLOWERED MISSOURIENSIS

Roy Davidson

After quite a lot of rainbow chasing I just may have something of concrete interest on the frequently mentioned "yellow flags" growing wild in the American west. Not all of them have proven to be escaped pseudacorus.

A friend who was on the track of one such in a colony of missouriensis in the drainage of the Scott River in northern California was thwarted when the Christmas floods of that year rampaged through, so altering the terrain it was hopeless to even begin to look for a small iris plant in the vast devastation or to speculate if it might have survived. I wondered just how yellow it might have been. Where I had found a good percentage of albinos astraddle the Spokane-Adams county line in eastern Washington were two quite different sorts, one had only the narrow yellow spear in the center of the

falls as do most irises and the other sort had a rather big central blotch of yellow. Then one year I had been quite surprised when I got over the fence to examine another white one to find that the entire blade of the falls was netted in a cobweb pattern of delicate golden lines. Although the plant was dug with all due care (and a lot of love) it failed to grow.

Many years later in western Colorado by another such coincidence I happened onto the right place at the right time and there was a third sort of yellow, this one with a background of soft primrose yellow. This was a large plant being trashed in the flooding of the snow pack, but I took off a small piece and was again sorry it did not survive. Without much heart I looked for this plant again when I was in the vicinity several years following. By happy coincidence I found it. . . one bud showing color on a now very much depleted plant with aspens casting too much shade, and this time I took off a couple of pieces to leave with a friend in Colorado. Again they failed to grow. Now, though empty-handed, I can say definitely that this species can be yellow. Maybe I shall be so lucky to find again this last one, and maybe it will have survived flooding, shading and pilfering.

MISSOURIENSIS STILL LIVES IN MEXICO!

Roy Davidson

Like a shout came the announcement from Homer Metcalf. After a century in limbo, one of the "doubtful" records of this iris was authenticated, found still growing in far-off Coahuila!

Dykes had cited certain specimens collected in 1880 by Palmer as taken at "Lerios, east of Saltillo; 10,000 ft." The printed labels distributed with these collections bore the heading "Flora of Mexico, States of Coahuila and Nuevo Leon" with the date "February to October" and the collector's name -- not a great deal to go on should anyone hope to refind the place; Los Lerios, it is properly called on today's maps.

Certain other circumstances had contributed to the castings of certain "shade" on Palmer's work of this season. Many of the plants he recorded from Coahuila have never been found there by anyone else anytime. There was neither an itinerary nor a complete list of the collections. Although Sereno Watson later prepared such a list as could be reconstructed, it lacked a certain authenticity as a record of so important a survey. It was often said and with certain seeming good reason that "it was apt to be quite uncertain just where any Palmer collection had been made."

Ironically there were two different Palmer irises from Lerios, number 1302 as missouriensis and number 2009, a bearded white foreigner obviously from a

churchyard or garden, a certainly introduced plant and a disquieting coincidence. Several persons in attempting to verify this station had been unable to locate any habitat at all suited to Iris missouriensis.

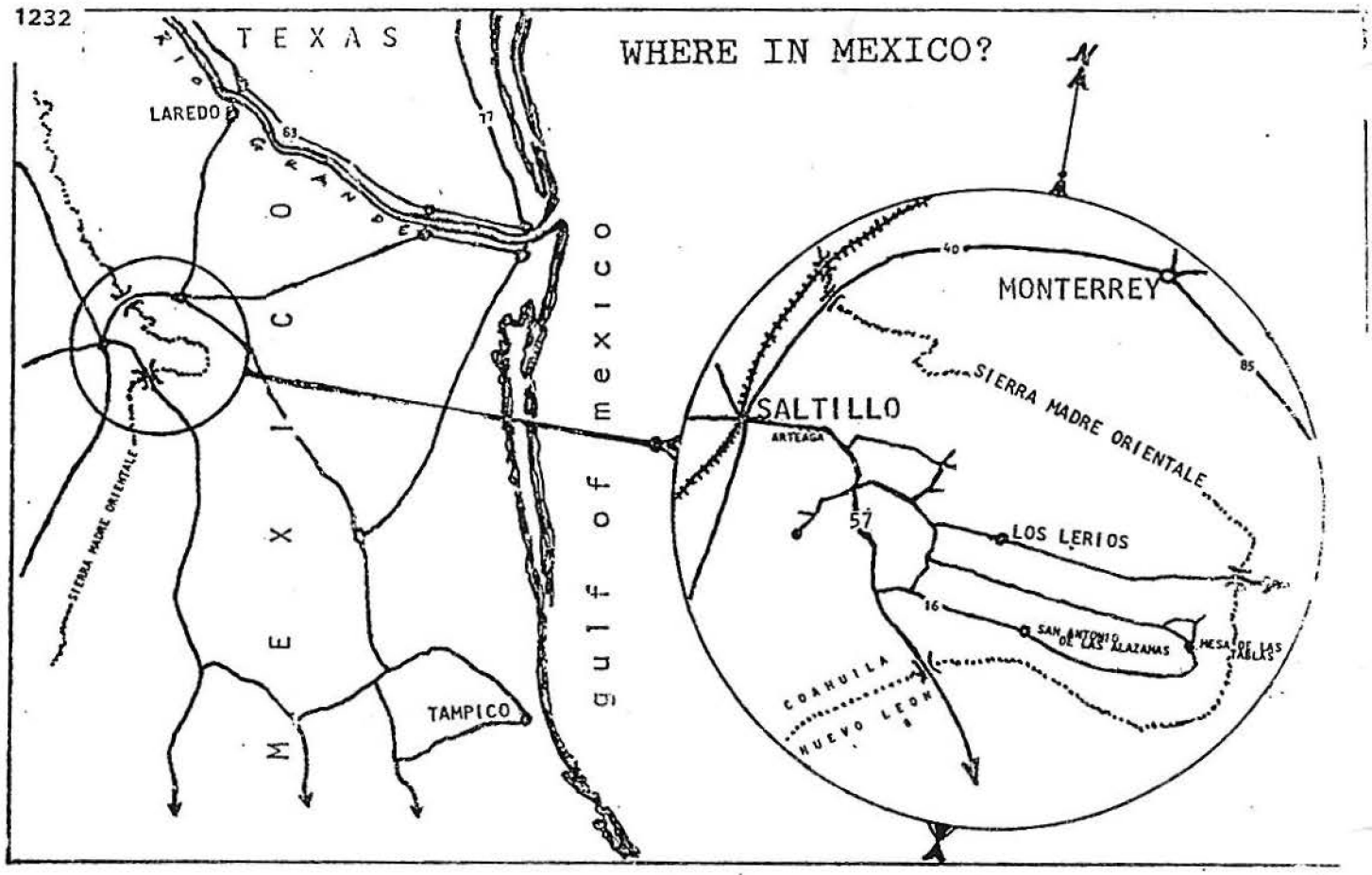
After having puzzled over all this for some time, it undoubtedly came as an astonishment to end all -- the finding of Palmer's intact field notebooks and other personal papers carefully filed away in obscurity. From these, Rogers McVaugh has written a biography of this remarkable man and his work: Edward Palmer, Plant Explorer of the American West; Univ. of Oklahoma Press, 1956.

Born in England about 1831, Palmer came to America at age 18 seeking the adventurous life of collector and naturalist. Thirty years later, in the autumn of 1879 he was working southwards in Texas and crossed the border to arrive in old Monterrey in mid-February. As spring began to warm the slopes of the Sierra Madre Orientale he commenced working upwards and over to the plateau city of Saltillo in Coahuila, arriving in mid-April. He was much attracted to the great high valley to the east and this proved to be the site of his astounding collections; it was as if a small piece of the southern Rocky Mountains had been miraculously transported there. Among the plants were the irises of course, but also such things as the northwestern species of Pachistima, otherwise found no nearer than the northwest of Colorado!

Palmer made Lerios his headquarters for a month and in late spring set off to investigate some prehistoric burial caves, returning to Saltillo at the end of June. He paid a farewell visit to Lerios in early July and found the iris in fat pod, and by mid-August he was enroute back to the States with his collections, which totalled over 17,000 for the season!

Palmer is revealed in this engrossing record as a most thorough and methodical worker -- perhaps a romantic -- but obviously dedicated and disciplined. It is quite typical that in the villages on market days he sampled and recorded whatever fruits or vegetables or herbs as were offered along with their intended usages. He also reported that the boll weevil was rife in the Coahuila cotton fields, at a time it was otherwise known only from a few obscure herbarium specimens. His careful records and papers vindicate any hint of carelessness or irresponsibility; rather we find a man obviously enjoying his sometimes hard lot, one who bore his circumstances well. His collections have had unanimous praise for their quality, but he was apparently intolerant of the tedium of packing and shipping the material as it was disposed of. These matters he left to good friends who obviously held him in respect, though some remembered him as being a crotchety old man, and maybe he was.

Not totally by accident Metcalf learned of the rediscovery. He had sought information from the National Herbarium who forwarded it when it came through to them: In early June of 1981 Bernard Ebel and associates were in the vicinity of Los Lerios in the course of an entomological field study and happened quite by chance into one of the numerous little drainages of the valley, this one bearing a seapage from which trickled a small stream -- precisely the sort of place we would expect missouriensis -- and there it was, the last flowers described as being "pin-striped in purple and white" with old seed stalks still standing and still holding a few seeds. Although this is measured as being considerably lower in elevation than the ten-thousand feet reported by Palmer, the fact remains that the iris still is there in Coahuila.



EDWARD PALMER'S LOS LERIOS

Eastward from the plains of Saltillo in the Mexican State of Coahuila a series of high valleys and sharp ridges of the Sierra Madre Oriental form a botanically unique pocket arcing in an easterly manner with the area bounded on three sides by the summits. From Saltillo highway 57 extends for 15 km east to Arteaga, then veers off southeasterly and begins to gain elevation. At 4 km beyond that village the first of three roads branch off into the area, this first one of no consequence, but in another 7 km a second branch does lead to the village of Los Lerios, the area where Palmer headquartered in 1860. It also goes beyond, to cross the range and descend to a good stream and highway 85 southeast of Old Monterrey. Los Lerios appears to be located in a broad treeless valley; probably all has been cut for fuel. Immediately to the north of the village a long ridge peaks at 3280 m (right at 10,000 ft.) while to the southeast the summit is 3700 m (over 11,000 ft.) Highway 57 continues to climb toward its summit which is also the border between Coahuila and Nuevo Leon States, but just short of that a third road branches eastward. Marked Coahuila highway 16, leading to the village of San Antonio de las Alazamas and beyond it gains altitude as the timbered valley narrows, then arcs northerly to a tiny village of Mesa de las Tablas and each of the two forks return westerly meeting the connecting road to Los Lerios again. The streams must recieve snow melt but all seem to be intermittent as if the porous nature of the earth absorbs the moisture. In June there is at least one seepage that has plants otherwise unknown in Mexico. Pachistima myrsinites has its nearest disjunct station in northwest Colorado and Iris missouriensis is absent from here to New Mexico. The forest cover consists mainly of oaks and pines.

LONGIPETALAE AS GARDEN MATERIAL

(based on Robin Extracts, and so forth)

It does seem possible, judging from all the records, past and present along with all the implications, that this sturdy band of irises might once have covered the westernmost part of the continent from Alaska down into Mexico at one time or another, as Nature moves along in a constancy of successions reflecting changing conditions. Mankind may not quite understand all of this even though he contributes through his alterations of conditions in the course of his pursuit of agriculture, industry and communications. Yet the fact remains that it is water more than anything else that is the limitation to the distribution of these irises.

This species is able to persist at near sea level (Whidby Island, Washington) or up to ten-thousand feet (southern Rocky Mountains). Soils are inevitably mineral and not highly acid if at all, even mildly saline, if sandy then shallow with a ready underflow of moisture, almost always retentive though subject to summer dryness. These are sun demanding plants readily weakened by over-shading. Metcalf characterized them as occupying "that narrow zone between the sedges and the sagebrush."

As garden-worthy ornamentals they have been better appreciated abroad than at home, especially the English seed-strain called "Tollong." Dating to the early years of this century, this was grown from a plant known as Iris tolmieana, (an alternate name for missouriensis) crossed with Iris longipetala; the two were considered to be species distinct from each other at the time and thus "Tollong" was classified as a hybrid. This seed strain has drawn praise from all quarters to the RHS Award of Merit bestowed in 1939.

There are in addition a few individual clones found in the iris registry, but due to the slowness with which these irises can be advantageously increased vegetatively, there is little future of any great success; such names ordinarily represent color forms, and it would be a great service if a dedicated gardener would develop seed strains from such so that others might enjoy them. For the most part what we have are perfectly nice though unspectacular medium lavender flowers on stalks to a foot or half again as high, with three or four terminal flowers. Seed planted where it is to remain and flower is the safest method of cultivation. Well established, they increase in nature to as much as three-foot clumps and bear fifty or more stems of flowers in time.

Metcalf reported a possible amphidiploid form in a collection from Montana and this is the source of Lorena Reid's tetraploid form. Solid deep blue-purples from Colorado, and not infrequent white ones have often been mentioned as well as those pallid sorts with a sunburst or peacock-eye halo on the falls. This last is rather more common in the Rocky Mountain populations. Also of some considerable interest has been the plants attributed to the arizonica form with many more flowers, as many as ten up and down the stems. The albino called "White Canary" (Davidson) has been reported to have yielded white seedlings, and the strain offered in the exchanges as "Hawksbluff Strain" (Davidson, based mainly on sturdy Palouse Prairie forms grown with many others) has now been lost at the source. (Can't we return some to the source? Ed)

Limited reports of garden experiences have appeared from time to time both in the iris journals and elsewhere. Morrison (AIS bull. 11) reported success with I. longipetala in the vicinity of Washington, D.C. Hazel and Vivian Grapes in SW Nebraska, in addition to growing collected forms from Colorado, had maintained a stock of the blue and the white registered by Andrews from Colorado, namely Bluebird and Snowbird. Also from Nebraska Ann Machalan had reported establishing Colorado transplants and raising several succeeding generations of seedlings. In Arizona Louise Hopper had reported that seed germinated readily for her in the natural condition, along limestone rocks, limestone over sandstone; limestone is of course retentive of moisture whereas sandstone just is not. Leslie Gooding had made transplant attempts from the nearby Chiacuaha Mountains (type area for the form Dykes had called I. arizonica) but wrote that "the dang things grew nothing but leaves!" But at least they grew. (Gooding was the man who had earlier applied the name pelegonus, an alternate name for the montana form.

Dr. Boussard in France had written that he had three forms, all quite hardy and free flowering as well as self sowing; one received as arizonica was particularly showy both on flower color and by the fact that the long stalks placed the flower well above the foliage, and that what he grew as longipetala from wild collected seed proved to be a bit tender, with large flowers borne very early. . . about four inches and the leaves tending to be evergreen, but not totally successful at it.

From his cold Staffordshire garden, Alan Fisk wrote of plants he had grown from seed sent him from Wyoming (illustrated) that they were the only seedlings he had kept from several lots variously labeled missouriensis and/or longipetala, the remainder being totally undistinguished. His summers did not appear to be sufficiently warm to properly ripen the rhizomes, although down in Kent, Lawrence Neel continued in good success with Foster's TOLLONG. Mrs. Marchant had written on seeing several exhibits of this in England that Neel's plants appeared to give the finest flowers, vigorous and smooth, and that it likely represented the original awarded clone, 1939.

Jean Witt has recently in SIGNA called our attention to a form with a heavy ridge, what in Louisiana irises has been termed a crest, arising from the blade of the falls. This in her illustration is a character not infrequent in the Palouse forms when growing in optimum conditions. Metcalf has reported that in his experience with measuring hundreds of flowers at the time of his study he had not observed any such degree of a "crest." Jean has also urged that more of us grow and select among seedlings of this fine plant; it is far more drought tolerant than siberians over a long succession of years, and in eastern Washington Davidson had good success with garden plants given only one deep soak in early summer and then left to dry off naturally.

R.D.

HOLDEN CLOUGH An Examination

by NIGEL SERVICE

HOLDEN CLOUGH is one of the better known inter-series hybrids though its true origins remain obscure. This brownish flowered iris was registered in 1971 and, in the British Iris Society's IRIS YEAR BOOK of that year, the late Donald Patton wrote of its discovery in the commercial plantation of the Yorkshire nurseryman after whom it was named.

HOLDEN CLOUGH has been featured often enough in the pages of SIGNA for it not to be necessary to repeat its whole story again but it had germinated with a batch of seedlings of Iris chrysographes raised from the contents of one capsule; so there seemed no reason to doubt its pod-parent.

It is not recorded that the cross was entirely bee-set but certainly a bee seemed to have got at the flower, and from the pink rhizome and certain aspects of the seedling's appearance it seemed that the pollen involved was probably that of I. pseudacorus. A chromosome count of 2n=37 seemed to confirm this and registration was made on this basis.

Dr. Jack Ellis reported the pollen he examined sterile, but Mr. Patton has written ". . .the seed pods persist on the flower stems and there appear to be a few seeds. . .," so I am sure endless attempts were made in those early days to cross, back-cross and self this plant, but with no sign of success. Occasionally a pod might be half-formed, but always empty. It came to be accepted that, like nearly all inter-series hybrids, HOLDEN CLOUGH was sterile and so things remained for a number of years.

I think it was Roy Davidson who first reported a seed, in 1979, and, as if this was a signal, seeds and reports of seeds started appearing here and there, recorded in the United States, New Zealand, Britain and France. Germinations were few but the affair culminated in the flowering of Ben Hager's first seedlings in 1983. The next year the rest of the batch of nine bloomed and also the two seedlings I had raised from English seed came into flower.

The parentage of HOLDEN CLOUGH remains a mystery, the more one looks at the plant the less likely it seems that I. chrysographes was involved. There appears to be no point of similarity in any aspect of plant, flower or habit of growth. The presence of such a seedling in a group of I. chrysographes can only have been one of those curious tricks that fate and nature so often play on us.

But having written this, I am troubled by the vague memory of another hybrid labeled as being a cross between I. pseudacorus and I. chrysographes. This was shown on the stand of the Species Group of the British Iris Society by Martyn Rix at an iris show in the R.H.S. New Hall in London in 1977. I seem to remember it as very similar to HOLDEN CLOUGH though paler, but my recollection is unfortunately rather faint.

Dr. Rix thinks the plant may possibly still exist in the R.H.S. gardens at Wisley. He also mentions another hybrid at the Botanischer Garten in Zurich which he thought was a cross of I. pseudacorus x sibirica. So perhaps I. chrysographes cannot be totally discounted after all.

It has been suggested the I. foetidissima might be the other parent rather than I. chrysographes. But if this is the case, how did such a seed get where it germinated?

Two points: it is, I believe, generally accepted that a hybrid tends more to its pod parent than its pollen parent and if HOLDEN CLOUGH is similar to anything it is to I. pseudacorus, but this species was not grown in Mr. Clough's nursery; I. foetidissima has never, as far as I have been able to discover, verifyably hybridised with any iris and come to flowering. I have notes of just three reports of possible hybrids, none confirmed. Perhaps SIGNA readers know of more.

It appears that up to now no attempt to hand pollinate HOLDEN CLOUGH has met with success, it must be left to the bees. But it does seem odd that fertility has been so slow to come; though if this is a wide-cross hybrid stemming, whichever the postulated parents may be, from irises in series not very closely related to one another, fertility should perhaps never have come according to the rules.

Anyway, we must press on with this examination and look at the facts we have.

Let us look first at the seeds HOLDEN CLOUGH has produced, at once we have a very curious anomaly.

The earliest verified seeds were on the plant of Jean Collins in New Zealand, two seeds in separate pods which appeared in 1977. Mrs. Collins made no notes on their appearance at the time but recalls them as large, oval and a shiny dark-brown. She planted them but nothing came of it. The event was recorded later in SIGNA.

Mr. Davidson described his seed in the 1979 IRIS YEAR BOOK of the B.I.S. This had appeared in 1978 but the stem involved had been cut before the seed's presence was realized and, although fully formed, was not mature and did not germinate. It had however what Mr. Davidson described as a "thick and rather pulpy yellow testa," and since he had been examining a perceived similarity in the plant to I. foetidissima, he looked at seeds of this species at the same stage of development and found the same colouring. From his description a similarity to seeds of I. foetidissima is inescapable but the shape was peculiar; as Mr. Davidson writes "The impression I had of this bilobed seed was that somehow two ovules had grown from a single origin and point of attachment."

In the following year Mr. Davidson had another seed but the appearance of this gave him no confidence in its viability.

Next came Anne Blanco White in England when, in 1981, she had two good pods on one stem, the larger of which contained twenty seeds. When packed in the pod she found their shape to be like that of I. pseudacorus, but those well-formed in the smaller pod and also about half of those in the larger

were circular in form, almost globular; they were among the larger iris seeds being over 5/16 in. in circumference and only slightly flattened, top and base. All these seeds, of whichever shape, had a smooth, non-fleshy testa and were of a fawny light-tan colour quite unlike the light-brown and slightly red tinged seeds of I. pseudacorus.

I was fortunate in visiting Mrs. Blanco White on the day she was thinking of opening the smaller, more advanced capsule for examination and she gave me four of the seeds it contained. Prior to planting, the hard and brittle coat of one of these fractured to reveal a smaller, dark-brown and slightly translucent seed within.

When sown, two of these seeds germinated though I am quite unable to say if one of these was the broken one or the less well-formed of the four.

In that same year, 1981, Cy Bartlett in England got three seeds from a single pod, the total harvest from over five hundred attempts at fertilization that summer, not to mention the bees working well at the same time. Mr. Bartlett had planted I. foedidissima CITRINA all around and could not be sure if his seeds were bee set or from what pollen.

These seeds were mid-tan brown, oval-ellipsoid and roughly 1/4" x 3/16", with a smooth surface which became much darker on drying. One of these germinated in the second season, 1983.

1981 was a big year, you could almost say The Historic Year for HOLDEN CLOUGH, for in the USA Ben Hager gathered thirty seeds from his plants. The maximum yield per capsule was two seeds and pollenation had been open.

Mr. Hager recalls the shape as a rounded oblong with a shiny brown-black seed coat. On sowing, no less than nine of these germinated.

1982 was a lean year, Mr. Bartlett failed to get a single take and the bees and I were no more successful in France though we worked on every flower produced.

Though historical for bloom, 1983 was also poor for seed and I know of no successes with HOLDEN CLOUGH.

In 1984 I found four promising capsules; one, alone on a stem, gave two glossy-black oval seeds with a well defined ridge down one side and a groove-like depression on the other, the side of the hilum. The dimensions were in the region of 5/16 in. x 1/4 in. The other three pods were on one stem and only that at the apex produced a promising seed. The single seeds in the other two pods were wrinkled and prune-like. Without going into tedious details, all faded to a dark brown over the following months and eventually all but one became shrivelled, seeming to indicate that even had they been sown fresh they could not have germinated.

In the same year, though of course in the New Zealand summer, Mrs. Collins got another crop of seed, five seeds from HOLDEN CLOUGH stems, only one to a pod. From the photograph Mr. Collins took and from the description given of a blackish-brown oval, three of these are, as near as makes no odds, identical to the seeds I got. Of the other two, one was rounded and of a fawny shade, appearing very like Mrs. Blanco White's seed, the other was intermediate, blackish-brown but more rounded.

This year I seem to have eleven capsules of some promise.

So to summarise, allowing that my definitely glossy black fresh seeds are the same as Mr. Hager's and the Collins' shiny blackish-brown, we have four quite distinct forms of seed from this one iris.

Type 1. yellow, fleshy coated, smooth surfaced, rounded.
Type 2. fawn, hard coated, matt surfaced, circular.
Type 3. cigar-brown, smooth surfaced, ellipsoid.
Type 4. black-brown, fleshy coated, smooth surfaced, oval.

Add to this the distinction between black and dark-brown in the new seeds and also of the flattened pseudacorus-shaped seeds in Mrs. Blanco White's larger pod, together with various unknown quantities and you have something very odd about the seeds of HOLDEN CLOUGH.

Secondly consider the seedlings, of which there are three batches all dating from 1981.

When Mr. Hager's plants bloomed in 1983 and 1984 the flowers of all appeared to a greater or lesser extent as variations on the theme of HOLDEN CLOUGH but with a definite move in the direction of I. pseudacorus.

The first out, known as "Clough A" proved the best of the lot and a clear improvement on its pod parent. Mr. Hager describes the plant thus, "determinedly evergreen-persistent; stalk to 40 inches, not stiffly erect and with three branches and terminal, all the terminal sockets with 5-6 buds. Flower 4 inches across. . ." (letter to Mr. Davidson). Each flower lasted three full days and flowering continued for a good five weeks. Fertility was improved with up to six seeds to a pod.

In 1984 when the two seedlings from Mrs. Blanco White's seed bloomed for the first time, you would have been forgiven for assuming them to be I. pseudacorus grown rather short. The only distinctions at this first flowering that I felt I could detect were the less reflexed style crests and, in the case of my plant "H.C.2", purple tinged filaments and possibly some slight faint brown veining on the style. This last though could easily have been wishful thinking, so faint was it. The other two factors could, I feel, come within the scope of natural variation in the species. Both set some seed and the capsules did seem of a lighter green and smoother texture.

In the first year of their life I had made comparisons with I. pseudacorus at the same stage and found the hybrid seedlings had both produced one more leaf and that the growths of tissue in the channels of the leaves, often termed "water marks" seemed rather differently arranged.

Only "H.C.1" flowered again in 1985.

Mr. Bartlett's seedling had not flowered when I last heard.

Thirdly, what of the seed of these offspring?

Both my seedlings produced similar though not identical seed as did Mr. Hager's. But where his was very like that given by his HOLDEN CLOUGH, that is of Type 4. character, mine was unlike anything produced by the pod

parent so far: mid-brown, smooth coated but not smooth surfaced, if the distinction can be made, but rather ridged and recessed, irregularly oval tending to be more pointed at the end away from the hilum, the seed coat hard and not fleshy. Closest perhaps to Type 3., but Mr. Bartlett stressed there was no hint of red in his seeds, these certainly had a reddish tinge closer to chestnut than tan. There was a variation between seed from the two plants both in this colour and in the texture of the testa. They measured about 5/16 x 7/32 in.

Finally there is HOLDEN CLOUGH itself.

The plant has been described as evergreen in warmer climates and so Mr. Hager in California finds it, but Mrs. Collins in North Island at very much the same latitude, though south, finds it dies down to about a third of its summer height.

Mr. Davidson, writing in the 1979 IRIS YEAR BOOK found several similarities to I. foetidissima and the appearance of his seed with its very definite I. foetidissima characteristics, and at that time the only seed he knew of, did point strongly in the direction of some relationship. Mr. Luscombe though, in correspondence has cited to me the known reluctance of this very old species to hybridize with anything as a good reason for not jumping to any precipitate conclusions in this.

Another very interesting point observed by Mr. Davidson is the presence in HOLDEN CLOUGH of subsidiary branches in the axils of the main branches. This is a feature peculiar to forms of I. pseudacorus and together with all the other factors seems evidence enough that this species is one of the parents of the hybrid.

The only even reasonably well filled pod to date was the larger of the two found by Mrs. Blanco White, and this she described as being similar to that of I. pseudacorus. Usually, even when bearing a seed, the pod has a "collapsed" appearance, with those promising tell-tale bulges which several of us have got to know. It is hard to compare, but both I. pseudacorus and I. foetidissima have not too dissimilar thick walled pods and even on these shrunken HOLDEN CLOUGH examples some resemblance seems discernible.

I have always found HOLDEN CLOUGH odd in the fact that the flowers can vary quite widely in size on the same clump in the same year and the exact shape of the stigma can vary in the same way. The incidence of deformed flowers seems higher than average, too.

From the nature of the seedlings a guess might possibly be hazarded that Mr. Hagar's seeds were self-pollinated while those of Mrs. Blanco White received the pollen of I. pseudacorus. But this is no reason why the seeds should so radically differ; for, without going into the mechanics of the thing, a seed's appearance and above all that of the seed coat should be in no way determined by the nature of the pollen which fertilized it.

It is all very odd.

Now though comes perhaps the oddest bit of all.

Jean Collins writes from New Zealand, "Our plant of HOLDEN CLOUGH flowered well each year, and produced flowers true to the description of

HOLDEN CLOUGH right up the the spring of 1982. This year to my very great surprise, when the first flower was showing colour, it was a bright yellow. This flower opened and turned out to be a pseudacorus flower on the HOLDEN CLOUGH plant. Both types of flowers were produced. . .

"Each year since then the plant has been a "crazy mixed-up kid" with two different flowers on the one plant."

It is understandable Mrs. Collins was surprised and the increasing number of pseudacorus-type flowers in each of the succeeding two years determined her and her husband to get to the bottom of the thing. So in 1984 they labeled each stem producing HOLDEN CLOUGH flowers in preparation for a thorough examination in the autumn.

When I saw this plant in November and heard what had occurred, and with the first flowering of Mrs. Blanco White's seedlings still a recent memory, the possibility of seeds having formed and germinated unobserved of course occurred to me; but it certainly appeared as if the plant was one.

When the clump was dug up it was found the rhizomes were indeed attached. Mr. Collins took photographs, one of which he sent to me showing that the main rhizome had given true HOLDEN CLOUGH blooms while an offset, produced apparently in the axil of the last foliage-fan bearing rhizome branch, had given rise to the pseudacorus stem.

So Mrs. Collins' clump is reverting. But why? And how?

HOLDEN CLOUGH is a single clone and however much it is divided up and distributed around the world, it remains essentially one plant with rhizomes infinitely branching. Rhizomes being prone stems, HOLDEN CLOUGH is becoming a chimera in this one bit of the plant, although whether the pseudacorus-type branches will produce offsets and foliage fans of their own, is not yet clear.

As it is one clone and with the example of the commencement of seed production, we can probably all expect to find the same process going on in the next few years.

In fact, it may not be unreasonable to suggest that HOLDEN CLOUGH is in a constant state of flux, different seed, different degrees of fertility, different degrees of seed viability, reversion, difference in flower size. Possibly even different proportions of I. pseudacorus in its offspring, though this last is wild supposition since no one has yet been able to say what the pollen-parent of any fertilized ovule might be.

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Except where stated, opinions are my own, but I am very grateful to all those mentioned for their willingness to share their experiences and knowledge with me. Without their help this article would be even more incomplete than it probably is. Anyway, the saga of HOLDEN CLOUGH will continue, is probably continuing at this moment with the germination of some seeds.

MORE CLOUGH COMMENTS

The odd, brownish water iris known as HOLDEN CLOUGH has intrigued gardeners and puzzled those who like to solve mysteries and plan hybrid crosses. It didn't look enough like anything else to give much of a clue as to its likely parentage. But it did set an occasional seed.

At Melrose Gardens, Ben Hager harvested quite a crop of seed in the fall of 1972, and this past spring (1984, ED) saw the second flowering season. In the prior year only a few of the most vigorous had shown maiden flower. Of this group of seedlings there is a strong family resemblance and an amazing similarity to the European water flag, Iris pseudacorus, as if the unknown pollen parent may have been that species, but also possible if the original HOLDEN CLOUGH had been from that species and the present seedlings had been the result of self pollination.

In flower, plant, and stalk these are uncannily like pseudacorus, except for the two significant distinctions; the flower has short bluntly ovate standards and the foliage tends to remain evergreen. in these two respects the parent and the further generation tend to resemble Iris foetidissima. It does seem strange that these two European species have never been thought to have mated before this time, but this also accounts for the uniqueness of HOLDEN CLOUGH and the consternation as to a possible parentage.

Of all these seedlings there is one that is a standout. It was among the more vigorous and flowered the first season, last year for the second time. The falls are quite round and marked by a bright signal patch of brownish-orange; both falls and standards are lambent yellow, unmarked with the lines of the parent. Unusual petal substance not only sustains the flower in good condition for three days, it also adds a sparkle and depth of color saturation. The lot is more fertile than was the original parent, and may portend a new race of garden plants, like better pseudacorus, and possibly, too, in bitone, bicolor and patterned variations. A further generation is in the seedbed at Melrose. Roy Davidson

The HOLDEN CLOUGH seedlings are showing evidence of fertility. In 1984 we collected just under 100 open pollenated seed from the seedlings. None have germinated as yet (March, 1985) but I did not get them planted as soon as I should have. The original seed from HOLDEN CLOUGH were planted in a five gallon pot and set in shallow water during the germination: I did not keep this latter batch of seedlings in water which may be the reason for the late germination -- or lack of fertility may be the cause -- we shall see.

The seedlings seem more fertile than HOLDEN CLOUGH as there was from 2 to 6 seeds per pod. The pods on HOLDEN CLOUGH rarely had more than one seed per pod.

To us there is a distinct link to Iris pseudacorus in the pattern of HOLDEN CLOUGH and that is the signal design which is typically pseudacorus and can be seen in the Japanese Iris x pseudacorus seedlings also. Ben Hager

THE WORLD OF IRIDACEAE - CLIVE INNES

Book Review by Bruce Richardson

Recently the Canadian Iris Society purchased this book, published by Holly Gate International Ltd., England, for its library, and it was turned over to me at the last Board meeting on Aug. 25 to be reviewed for the C.I.S. Newsletter.

The work is a monumental one replacing the last similar work by J.C Baker, published in 1892 and there have been numerous revisions and additions since that time. The book runs to 400 pages of fairly fine type (20 pitch), arranged in two columns so each line is not too long and more easily read. Differing from most books, the pages are square, each 9" x 9", which lends itself to the 251 illustrations (which are on unnumbered pages in addition to the 400 pages of text.They are mostly four to a page, approximately 3" x 3½" and are all in colour except for 12 line drawings. The work of many photographers and contributers from around the world, with most coming from Great Britan and South Africa. The extent of the research by Mr. Innes is indicated by the bibliography cited listing hundreds of names. The seven years of effort Mr. Innes put into compiling this book hardly seems enough time to search through this mass of literature.

The Iridaceae Family is a large and most diverse one and three clasifications are cited, the oldest as given by Baker in his Handbook of the Iridaceae in 1892 and the most recent by Goldblatt in 1971. The Family is broken down into Tribes and Sub-Tribes where necessary and these in turn into Genera, each of which contains the closely related individual species. Everything is arranged alphabetically, so no index is supplied. The Genera are listed on almost three pages, near 300 of them (of which Iris is only one), but some two thirds of these are obsolete ones. It would have been useful if the page numbers where each Genera were located had been given as many of them have the same first letter and there are often many species with this same first letter; you have to turn back to find out what Genera you have (unless you are very familiar with the species). The species are arranged aphabetically under the Genera name and include obsolete names as well as the synonyms used over the past 100 years or so. There are many more synonyms than current or correct species names, often a dozen or more for a widely spread species and especially the oldest named ones. It is a distinct advantage to have all these obsolete and synonyms here in one place, and with the cross indexing used they can be easily traced to the current or correct species name now in use. The same logic applies equally to the Genera. Thus the volume turns out to be a summary of all the work done in the past. This is not a how to grow them book and Mr. Innes does not attempt to present his views, but simply presents the work of the original author with little more than an occasional comment as to the possibility a species may be a hybrid or what the name is confused with.

Each species name is followed by the name of the person who first described it and then in the text below the synonyms , if any, are given.

The bulk of the space given to each species is taken up with a quite detailed description of the plant and any unusual characteristics. The flowering time in its native habitat is given, as well as the the native sites, sometimes is great detail, but more usual by province or district of the country where it was originally found. If there are any recognized named varieties these are listed next; in some instances with a short description as to how it differs from the type species.

Although the Iridaceae Family contains such uniris-like plants as crocus and gladiolus as well as a vast number of Genera from the mild climatic zones of South Africa, it is the Genus Iris that contains the most species and in a general way the most diversity. The main portion that will prove of most interest to our members will be this Iris genus section which occupies about one fifth of the text pages (74) with numerous colour pictures of the various species. I have been some 20 years trying to figure out the relationship between synonyms and true species names, not to mention the constant changes of names in the search for the oldest properly described name of a given species, and it indeed a pleasure to find the whole story laid out before one in such a concise manner. It will be equally useful to the keen amateur as well as the trained botanist as a reference work. If you are only interested in cultivars this book is not for you.

It can be obtained from Holly Gate International Ltd., Ashington, Sussex, England. RH203BA It was published in 1985 and I understand the price, postpaid, is £25 sterling. Its British Library Catalogue number is 584'24 QK495.175.

OUR READERS WRITE

A new member of SIGNA, I have received SIGNA no. 34, and I can complete Bruce Richardson's article, p.1189, about Iris perrieri.

Iris perrieri grows in French Alps (Savoy) near 1500m of altitude, covered by snow from December to April, on limestone slopes in sunny places.

I have grown it in my garden since 1983, at 1100m (snow from December to March temperature down to -25° C (-4°F). Last year it did not give seeds (hand pollination). I hope, this year, I can obtain seeds for Seed Exchange. Flowers are very like those of I. germanica (purple or violet) but falls and standards are more narrow.

Here now (6-14-85) are blooming; I. graminea, prismatica, missouriensis, variegata and pseudacorus; in April were blooming: I. bucharica and lutescens. I am waiting also for I. setosa and virginica, garden hybrids like TBs, kaempferi, Louisianas and spurias.

Mr. Jean Peyrard, Seyssinet, France

IRIS X "LONGSIB" AND THE VERY LEAST: IRIS X "LONGSIBSON"

Roy Davidson (Nov. 1984)

About twenty-five years ago Lawrence Neel sent from England a most peculiar iris, warning not to anticipate much "for it will appear as having been frosted just as it was emerging from the bud." And so it did, yet even without the virtue of great beauty it proved of considerable interest with something of both the parent species, Iris longipetala (missouriensis) and Iris sibirica. This was the wide-cross hybrid Amos Perry had named LONGSIB.

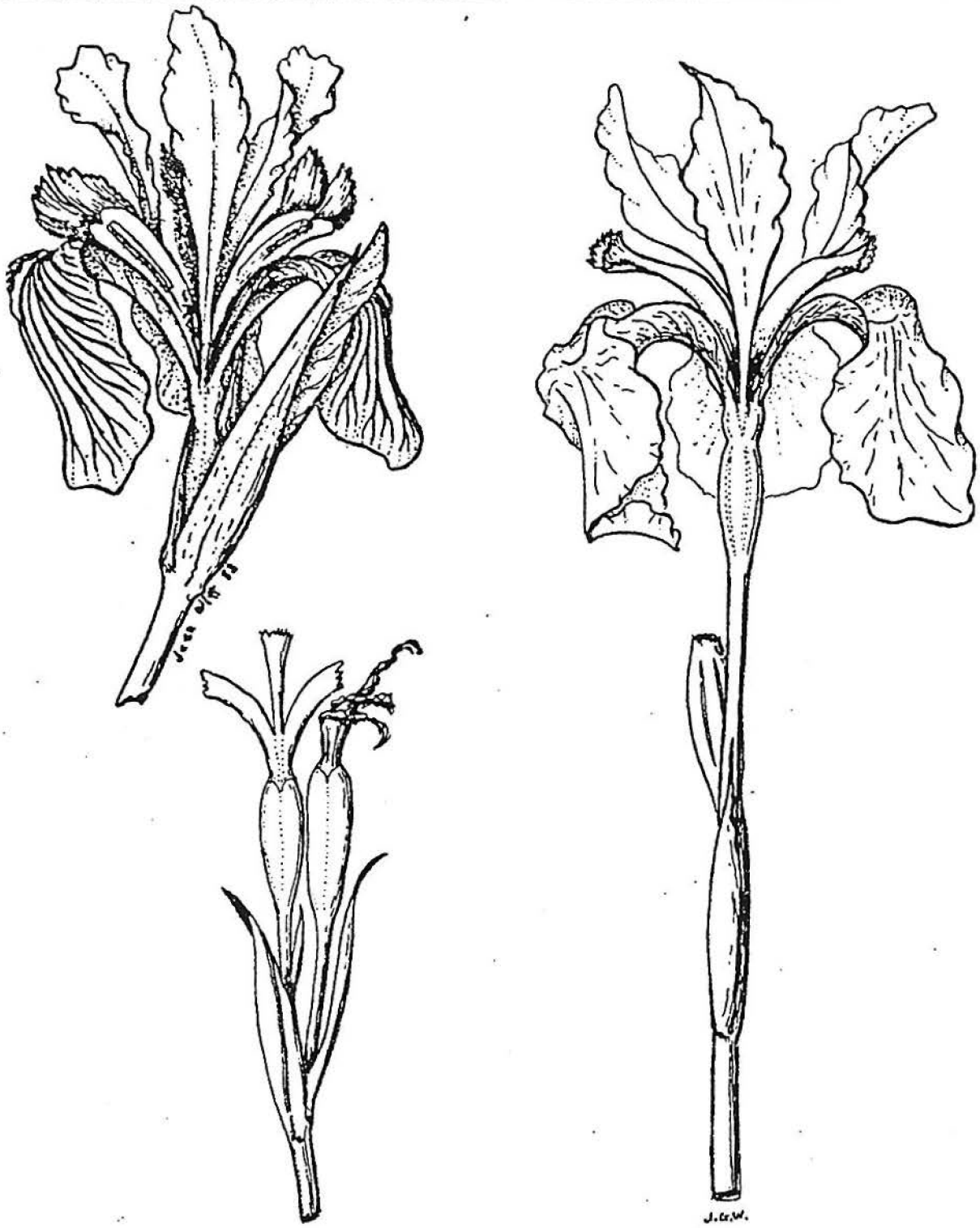
It grew tall, and when there was a clump effect in a few years gave a very light and graceful effect, with the smallish flowers like flaring blue butterflies well atop the attractive leafy clump. Stems were hollow, the flowers flanged, both characteristic of the European sibirica, and each stem bore two flowers in succession at the season of the parent species, about the peak of iris season. Although it was a spare looking thing, the parts were held rigidly, and there was darker veining on a pale ground with a greenish suffusion to the midparts and an opalescence to the smooth, pale style branches -- a "watercolor" of an iris in the near-blue spectrum.

In due time it was shared with others who enthuse over oddities, and Sarah Tiffney grew a plant from a self-pollination. On flowering this proved to perhaps be the top-winner in the WHY? category, yet there is something to be learned from it. For identification Sarah had referred to it as "Longsib-son." This F_2 representation of a cross that "really shouldn't have happened in the first place" is another of the results of some genetic abnormality, perhaps a real mutant. The sexual parts appear to be fully developed while the standards, falls and styles are minimal. Whereas the F1 had grown to three feet with a thick, hollow stem, this didn't quite make two feet and everything about the plant was about in the two-thirds proportion. There are two buds in each spathe and it is a marvel of packaging in the small, thin spathe, with an exceptionally thickened tube to the perianth.

The ovary is also large and trigonal. It is this feature that is the main distinction from the Asian Iris lactea (ensata). Yet it's even less effective than the poorest of those. The entire flower appears to consist of a series of thick, stubby bristles, scarcely fleshed out with substance and color, yet a washy blue-green over an opaque base forms the "illusion" while there is a minute deep blackish design of spotting, a fine fretting on the claw and flanges. With the help of a hand-lens this is found to be intricately attractive in design. The prominent styles are the color of soft putty, the crests barely developed. Purplish stamens produce what appears to be very good pollen; at least there is lots of it, creamy in color.

One might question if any further generation is to be desired; the plant has set no seed and no one has been imaginative enough to have pollinated any of the flowers. Although there is certainly no shred of garden value to this poor thing, it is a curiousity in that it might be thought of as an advance in the direction that grasses, reeds and rushes have taken, all their energies gone toward production of sexual parts, with nothing wasted on floral beauty.

(See also SIGNA p. 281)



WIDE-CROSS HYBRID STUDY – PARENTS OF F_1 GENERATION

Iris missouriensis, below with parts cut away; no flanges at the base of the falls. Stem solid.

Iris sibirica showing small flanges, typical of all the Sibiricae. Stem hollow.

UNUSUAL WIDE CROSS HYBRID AND A FURTHER GENERATION SEEDLING

Wide-cross hybrid 'LONGSIB' (left) and (right) F_2 seedling grown from it by Sarah Tiffney. Flanges present in F_1; stems hollow in both.

GRASSES REPLACE IRIS GARDEN AT KEW AND HOLLAND HOUSE IRIS GARDEN

Roy Davidson

Even as SIGNA 31 was bemoaning the fate of the great tall-bearded display at the Royal Botanic Garden, Kew, your correspondent was finding an absolutely fascinating garden of grasses that had replaced it.

October proved the best possible time to see it -- especially on a crisp, dewy morning that had commenced with a pale apricot-gold sunrise. Fortunately there were on hand mature plants and the means of moving them the short way from the site (near the greenhouse range being replaced) to the two-acre former iris garden, and there they billowed beautifully, some making "waves" of ground-covering stature, some magnificently shrub-like, and all manners and habits between and in yellow-greens, green-greens and blue-greens as well as in the subtle mixtures of young and old foliage blending together, and with plumes from huge ivory and buff to brown and "pink" and silvery gray of all sorts, short and fat as well as willow-graceful.

This is far more than a mere grass "collection" -- it is a glorious concept of a garden and a credit to the staff and designer. Yet it occurred to me that such a fine show of grasses could well be combined with irises to good effect. Whereas the irises are beyond compare in late spring when the grasses are beginning an attractive growth of foliage contrast; as the iris flowers go past the grasses commence their maturity and remain effective through the rest of the year -- until cleared off to make way for another season's growth.

A few days later I took the opportunity to check on the iris garden at Holland House, mentioned several times in BIS Yearbooks. It is still there, though if it continues to be so bedraggled it is surely doomed as a bore, and beds of grasses around the background areas would perhaps give interest when the iris foliage becomes so problematical. Holland House is in the setting of a large park, a historic piece of West London, just west of Kensington Gardens and Kensington Palace (where the Prince and Lady Di live). It dates from 1605, built for Sir William Cope and then known as Cope Castle. Continuously added to, it passed to a daughter married to the Earl of Holland, then to a later Baron Holland. A two-volume history of the house and its occupants attest to its social and political prominence as the seat of the Whig Party, and it was all but destroyed by bombing during Hitler's War, then acquired by the Greater London Council. Almost three and a half centuries after the first foundations were laid, the gardens were opened to the public as Holland Park, the extensive and colorful bedded formal gardens well maintained and a most pleasant retreat within the city.

The iris planting consists of four large formal beds each about 24 x 40 feet, more or less rectangular but situated about an enormous round water basin featuring a lovely three-tiered fountain. This is in a quadrangle surrounded on two sides by wings of the house, on a third side by a connective glassed arcade, open on the uphill fourth side to the other formal gardens. In flower this is said to be a very effective rainbow planting of irises. The quadrangle is paved attractively and the garden in flower should be seen by all visiting Irisarians.

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SOME GROWING EXPERIENCES

Bruce Richardson

At a recent Board meeting the subject of growing iris in one location for an extended period came up and the sometimes small growth pattern encountered when fresh healthy stock is planted in the site formerly long used for iris. From personal experience I have noticed a decrease in vigor of the rhizomes commencing after continuous iris growing for a period ranging from five to ten years. It is the same thing with most field crops and the reason farmers practice crop rotation. Some seem to get away with continuous corn for ten or more years if their soil is naturally rich and enough fertilizer is annually applied to replace that removed by the crop, but it doesn't work for everyone. If you plant wheat on the same field for even just two succesive years, the second crop is always much less than the first year.

When we were growing iris nursery stock for sale here we replanted every second (or if heavily thinned every third) year. Since the rows were four feet apart replanting in the centres was essentially new ground and the old site became summer fallow for two years. No particular decrease in vigor was noticed for over ten years but after 15 years they just wouldn't grow well and after 20 years even vigorous varieties were winter killing. This effect was even more noticable in a display bed that had grown continuous iris for 20 years, in spite of efforts to combat it with applications of sand, compost, ample fertilizer and heavy watering.

A year ago I had come to the conclusion that my old increase bed had played out, so most of the varieties were discarded and only some old favorites -very poor replanting stock at that - were transferred to a new area that had been crop land in timothy hay for several years and even that was thinning out, so to replenish the soil that had not seen manure for at least the last forty years, I applied a layer of mushroom compost 3-4" thick and well tilled in a month ahead of planting. The rhizomes went in in mid August with a sprinkle of 5-20-10 fertilizer.Growth in the fall was excellent but not unusual, but this summer my poor weak rhizomes outdid themselves. I had rhizomes as big as my fist and some of them went to the table iris at the auction - all gone in 10 minutes flat. The mushroom compost undoubtedly helped by opening this heavy clay soil, but by spring none could be seen and this soil looked like the rest of the field but it didn't work the same - it tilled very easily.

A number of years ago we attended the A.I.S. convention at Newark, N.J. and among the gardens on the tour routes was that of Raymond Smith. This was a large lot, perhaps over an acre in size, but we were told that the iris beds had been in the same locations for years. On enquirry as to how they were able to maintain such excellent growth year after year, the answer was soil removal every time the beds were replanted. This had to be done by wheelbarrow and with hired help, an expensive proceedure, but the results justified the means. The R.B.G. Spring Garden (now renamed the Laking Garden) is another place closer to home that has grown iris for 20 or more years in the same beds and still have good bloom.

The original site of this garden was a sloping field used as a nursery. To landscape it for a public garden the field was levelled, resulting in the formation of two terraces The upper level, containing the house was left at near the former original grade, but the other two , the lower one where the iris are grown now, were a case of cut and fill. The beds on both levels are pretty much in the cut areas, so sit right on the undisturbed subsoil even though the top soil was replaced. Over the years the iris have grown well, but as the main beds were the same level as the grass paths an effort was made at each replanting time to raise these beds to aid drainage. These additions of new soil, along with good fertilization have maintained the iris well and the mass planting make a very pretty picture. Individually the rhizomes and even the flowers too are a bit smaller than to be found elsewhere but as it is the mass effect that is important this has certainly been obtained. However the time may be fast approaching when the soil in these beds will need to be completely replaced or else something different than iris grown there. Removal is not too difficult as unlike a private back yard the R.B.G has left wide paths between the beds and it is possible to bring in power equipment to do the job.

The upper level, which contains the area where the C.I.S. acquisition iris (auction iris) have been grown for some ten years is another story. The flower bed here was vastly improved with a heavy load of manure and some ddirion soil the year before the first iris were planted there. Growth of course was excellent for several years, but lately this bed too is showing signs of aging and although the flowers on these well spaced clumps were good size, there was disappointment on the part of the auction committee with the size and number of rhizomes obtained for the auction. Late arrival and planting was blamed for the poor showing of the 1984 acquisitions but this does not account for the problem with those there two or three years, especially this year when the weather was near ideal for growth. We would all regret seeing the C.I.S. iris have to move to a new site, as the present location was so protected and convenient, but soil removal here would be a hand operation and thus there is no easy solution.

This problem of poor growth of iris after a number of years growing in the same site is not an uncommon one and is often blamed on the wrong cause, such as the weather, the variety, not enough fertilizer, etc. These can be reasons but not always. My personal opinion is that it is caused by the decay products from the older rhizomes, showing up in part in the centres of the clumps. When we grew iris commercially we never had much in the way of old rhizomes as we replanted frequently and thinned the surplus stock away from second and third year plantings. Eliminating the old rhizomes decaying in situ seemed to largely eliminate the problem of poor growth. In a previous Newsletter my wife Alberta, in a memorium to Larry Whitby, mentioned how he and his father grew wonderful large iris by replanting them every year in the same small back yard. Year after year they never ran into problems of small size. The answer seems to be: if you don't want to replace your soil every five or ten years, then eliminate the old rhizomes by either frequent replanting (every second year) or if left longer drastically thin them to get rid of the older rhizomes and leave room for new growth.

OUR READERS WRITE:
TO THE CHAIRMAN TOO

And we found an answer →

I am particularly interested in iris arenaria. About twenty years ago in Connecticut I grew what must have been a superior form of it. The form I acquired recently (from Cooper's Gardens) seems to be far inferior. What I would like to know is whether there are two forms which are, or have been, in commerce. If so, I would like very much to relocate a source of the superior form.

The Cooper form, which I believe she listed under the designation "hyemalis" (I. humilis Georgi 1775 is the currently accepted name of what has been known as I. arenaria, Walst. & Kit. 1802. ED) blooms for me here about three inches tall. The falls are somewhat pointed and their ends are hidden under the style arms. The substance is tissue-like, and the individual blooms do not last out the day. The plant is not very vigorous here, although that might be a matter of climate or culture.

The form I had in Connecticut bloomed on stems about six inches tall. The falls were spatulate -- lobed at the outer end. The style arms were much shorter, and the flower was somewhat smaller. It had good substance, and each one lasted perhaps three days. I had a considerable clump of seedlings from it that provided abundant and continuous bloom for a long time. Crosses from it on dwarfs were taller and more vigorous that the ones, such as KEEPSAKE, that were available at that time. I made one cross with korolkowii that received a certificate of merit (or something like that) from Walter Welch's society. As I remember, the form was designated "flavissima", although I got it a very long time ago, from whom I do not remember, and am not at all sure that that designation is correct.

If anyone knows anything about this, and particularly if anyone knows of the better form, I would appreciate very much hearing about it.

Bryant Fitch, Napa California

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WHY GERMANICA?

The Ninth Century German theologist Walafried Strabo in a poem entitled "Hortulus" told of having grown in the little garden he tended an iris now identified with Iris germanica, a plant in many monastery gardens as a source of orris root.

We might wonder if Linnaeus knew of this and whether it might be taken as perhaps his inspiration for the name "germanica" which is otherwise not explained.

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IRIS ARENARIA

By Walter Welch

Reprinted from Dwarf Iris Society Checklist, 1975

I. arenaria, Waldst. and Kit. 1802, comes under the general heading of I. flavissima which is recognized as the representative type, but both much alike in general character except for size. I. flavissima is the largest, with I. arenaria the smallest. I. bloudowii and I. mandschurica are intermediate in size.*

A peculiarity of this group is that the different forms jump vast areas of space to appear in widely separated populations. Arenaria appears in Hungary, in Transylvania, and then over in the southern Russian territory as the form I. bloudowii, then into Manchuria as I. mandschurica. I have never seen mandschurica but have grown the other forms.

I. Arenaria
4 inches

Arenaria is among the tinest of the dwarfs, growing to around 4 inches high, with narrow grassy leaves, slender stalk, with ovary at top of stem, the spathe valves neat and rounded, looking inflated and often scarious at the tips. Usually two buds arise from the spathes in a terminal cluster, which bloom at different periods a few days apart, resulting in waves of blooming, but the flower is short lived, lasting only one day and on hot days it is over by early afternoon. On a cloudy day blooms will not appear, as it only opens in sunlight. As the flower declines it gradually twists into a screw-like formation.

It comes only in one color, a bright buttercup-yellow, with yellow or orange beard. This is a plastid or carotene pigment, with no anthocyanins or flavonols, and it is apparently pure breeding for yellow. This suggests arenaria is a homozygous species for color.

It seeds itself regularly, so that in all cases if you have open pollinated pods you will get true arenaria seedlings. In fact I know of only one case in which arenaria is known to have produced a hybrid as the pod parent. This was an arenaria x aphylla hybrid grown by Dr. Hertha van Nes of Germany. This hybrid is a rosy-lavender self with blue beard, and showing the characteristics from both parents. (ARENAPHYLLA your editor would like to hear from anyone growing this hybrid)

A strong characteristic of the flower is its open standards, with wide and rounded horizontal falls. The bud is bronzy-brown before opening, which shows on the underside of the falls after opening. The pod is pointed at both ends, opening on the side when ripe and is of a papery substance when dry.

Even as a pollen parent it is difficult with most species excepting I. chamaeiris (now I. lutescens, ED). It will cross readily with chamaeiris to produce a hybrid which is sterile. We have two seedlings of pumila x arenaria, the first and only ones of their kind, called PUMAR ALPHA and PUMAR BETA, by Jay Ackerman. These are nice small plants, very robust, with tiny yellow flowers, but which are sterile.

Yet we find quite a large number of chamaeiris-arenaria hybrids such as TAMPA, KEEPSAKE, TINY TREASURE, BRONYA, MIST O'PINK, PROMISE, BRICKY, CUP & SAUCER, GLOW GLEAM and a very old one called YLO by Miss Sturtevant.

This habit of self pollination has evidently been a factor in keeping its gene pool clear. And therefore considering the handicaps involved, it is advisable to open the bud before the flower opens, take off the stamens, and pollinate the flower then close the flower and cover to avoid contamination.

I have just recently received from Karl Ajdovic of Austria some plants and also seed of a population of arenaria in Austria. He also sent several color slides showing them growing in the wild. They were in open fields, among low grass and other vegetation, with one bloom showing in plants which appeared to be separated approximately two to four feet apart, no big clumps as we know in other dwarfs. The field was spotted rather evenly all over with single blooms.

Bloudowii although considered a form of I. flavissima, is of an entirely different character than arenaria or flavissima. Its bloom is more thick and stiff, more coarse in every way, as is the stalk and leaves. It lacks the finish or daintiness of arenaria. It appears to be harder to grow, and I have difficulty keeping it alive.

All of this group are diploids with a complement of 22 chromosomes or two sets of 11 chromosomes. It has been claimed by most authorities that arenaria is a form of Regelia, this conclusion based on the fact of its creeping stolniferous roots and the aril or that white spot on the seed. Yet on the other hand we find more characteristics that resemble the dwarf section than favoring the Regelia groups. For example its early blooming, its small size, its wide, rounded horizontal falls, its clear yellow color and lack of anthocyanin colors, its absence of dark beard and brown signal on falls, its lack of crossability with other iris groups, and finally its chromosomal differences.

Simonet found the chromosomes of arenaria and flavissima so different from Regelias that he removed them from the Regelia Section and put them into the Psammiris of Spach, a group in between the Pogoniris and Regelia of Dykes. However, in spite of any possible argument as to classification, we do know that Bryant Fitch crossed arenaria with the Regelia korolkowii and obtained a small hybrid 6 inches tall showing the brown beard and brown signal spot over a near-white base color that is very beautiful. However it is entirely sterile, which it should not be if it is a Regelia form.

One thing I should mention here is regarding germination. The seed of arenaria should be planted immediately upon ripening for if they are allowed to get hard and dried out, they will not germinate the following spring but will wait for two years to appear. For this reason handling arenaria seed is rather difficult. For that matter I find many reports of growers finding it

hard to keep arenaria alive. Here I have no difficulty, it grows like a weed.

I grow it in open rows in the field, in a rich sandy loam, in full sunlight and give it no thought. But each year I lift it, separate and transplant it, early enough that it gets established before winter. It tends to die down in late fall so that it appears to be almost dying, but each spring it grows and blooms profusely and is entirely hardy. A bit of compost mixed with the soil will do wonders for performance.

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*Brian Mathews in The Iris classes I. arenaria and I. flavissima as synonyms of I. humilis; I. bloudowii and I. mandschurica as other species in Subgenus Iris, Section Psammiris.

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SMALL'S GULF IRIS COLLECTIONS

Roy Davidson

Dr. Small's research of the irises of the southeastern United States included the collection of not only the customary botanical vouchers of dried material but gunny-sacks of the living rhizomes, which were shared with interested gardeners and institutions. AIS Bulletin 27 (April 1928) records that at the New York Botanic Garden alone were growing in autumn 1927: in pots, 412 plants of 72 varieties; in the nursery, 2,099 plants of 72 varieties; and in the field, 460 plants of 67 of those varieties; a total of nearly three thousand plants, taken in the name of science.

How many more were growing elsewhere is not known, but through the exchange between the AIS-sponsored Test Gardens, the total could easily have been at least double that number. Small's field work was commenced in 1923 in a day when Nature was considered to be an easily self-renewing resource, and before such a thought as conservation had gotten much consideration -- if any at all, aside from a few Thoreaus.

Today there are relatively few of these irises left in the wild, due in part to such depradation, but more exactly attributable to the extensive alteration and destruction of the habitats. Plants of all kinds by their normal vegetative and seed reproduction processes should be quite capable of persisting and increasing within their chosen habitat and range; interference and alterations involving these eco-systems, often in such delicate balance, can decimate or destroy all that Nature has accomplished.

Few of the collected plants survive these many years later, though all the hoopla in the press, the botanical journals and horticultural magazines as well as the newspapers of the time did bring an awareness to the public and did lead, or at least contribute to an extensive and important race of garden plants -- the Gulf or Louisiana Irises.

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JULY GARDENS IN ENGLAND

- Roy Davidson

It is no surprise that irises of many kinds have a place in English gardens, but the numbers of them effective in July are to be applauded. Plants of good quality do not go "out of favor" in the English gardens as they seem to do here, and some of the best plants include wild species which have not known the hand of the plant breeders -- though they well may have been chosen as the best of their sort originally.

A case in point is Iris setosa as it is found along the wet meadow at Saville Garden in Windsor Great Park. This is a dark color strain especially attractive with the yellows and reds and oranges and pinks of numerous sorts of candelabra primulas and forget-me-nots on the sunny side of a high woodland and alongside the stream. This same strain was brought to Wisley Gardens by the late Ken Aslett when he was there, and it seems to also be at the Wakehurst Place gardens maintained by Kew. A variety of forms of Iris forrestii were flowering well, some shorter, some taller, some paler and those both with and without lining.

Particularly effective at Wakehurst in "The Slips," a series of matchless marsh gardens, were also very good representatives of both I. versicolor and I. virginica as well as the Chinese species of Subsection Chrysographes. All these were coming to peak flower in the last week of June. Across the ravine were huge masses of Meconopsis of course in the blues but also the yellows and watermelon colors, and equally imposing masses of Cardiocrinums were yet a week away from flowering.

In the pool of Christopher Lloyd's sunk garden at Great Dixter, a large clump of GERALD DARBY was easily the most admired plant in the entire garden that day, with numerous stems sweeping outward and then gracefully upward in a symphony of line and color. This was seen at Bressingham, too, in Alan Bloom's Dell garden and elsewhere, always commendable, the foliar coloring attractively considered.

It was not surprising to find spurias, of course, in July. Iris monnieri was of great impact in the Dell Garden. Jenny Robinson was using a very nice blue one, medium tall and probably a selection from Iris spuria itself in her blue and orange border, especially effective with the apricot-orange of Papaver heldreichii. The borders at Wisley, the Royal Horticulture Society garden held very imposing clumps of the old hybrid Monspur called 'Cambridge Blue' and it would be hard to equal or better it in any match with today's garden hybrids. In Jack Elliott's garden at Colthurst, Kent, we admired a striped and rather leaden-purple seedling that had been raised from it, a very attractive and unsung plant with flower of elegant form.

Still in very good flower on one of the high terraces above the formal part of the gardens at Powis Castle in Wales were great sweeps -- everything here must be in such great sweeps in order to be seen at all in a place of this scale -- the soft yellow Iris foetidissima LUTEA where the brilliant sun does not mar the foliage.

At Sissinghurst Castle were good plants of a very nice white single Iris ensata (kaempferi) not too far removed from the wild form, perhaps one of Ise garden strain, as was Preston's Siberian hybrid KENOGAMI, one we do not find often in our own gardens. It was with considerable surprise -- and pleasure -- we found there very prominently placed and beautifully grown Iris missouriensis clumps being groomed carefully for the foliage effect, at least the label indicated that species. Another most unusual foliage was that of Iris unguicularis 'Bob Thompson' at Rodney Leeds' garden in Suffolk, leaves like coarse, thick grass, very slender but growing to four feet in length; this might be very effective trailing down an embankment. It was not, of course, in flower. At Brian Mathew's garden was a most unusually attractive foliage clump labeled Iris chrysophylla, a strong and effective plant about a foot high and again not flowering. All the gardens visited had Iris latifolia (=xiphioides) the so-called English Iris which really comes from the Pyrenees, in a variety of mostly blue and purple tints, invaluable in that it flowers at this time and that it does not seem daunted by summer watering in spite of the bulbous rootstock.

Although Kew's big display garden of irises is now gone, there are still a good many kinds about in various parts of the plantings. In the margin of the woodland a particularly nice clump of I. prismatica alba had resulted from a plant I had contributed, I was pleased, of course, to observe. Most of the beardless sort are in the rock garden, the Laevigatae and Sibiricae especially. Noted were the following exceptionally nice representatives: I. bulleyana 000-69-50873; I. delavayi 651-69-06007; I. forrestii 184-55-18403 and I. clarkei 069-80-00658. There were also very fine forms of I. laevigata as 241-60-24101 (a flat lilac, 6 falls) and most encouragingly of I. hexagona as 248-69-02180.

Smaller species of many kinds of iris are in the screes and other sunnier drier sections of the rock garden and many in pots so as to be displayed in flower in the alpine house. Juno, Regelia and Oncocyclus are given to the two cloched frames standing in full light alongside the entry to the Jodell laboratory area, and pogons are in the paving at the front of this building. Peat beds prove happy havens for cristatas, lacustris and vernas, and, in fact, irises of all sorts are very prominent at Kew.

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HARDINESS OF IRIS VARTANII

- Elizabeth Lawrence

I spoke too soon (in LITTLE BULBS) when I said that Iris vartanii is for mild climates only. It seems to be pretty hardy but does not deserve being called Christmas Iris when grown very far to the north. The variety 'Alba' (which seems to be the only form in cultivation at present) wintered in. . . Groton, New York, but did not flower until April. It has flowered. . . in Ohio on the 10th of February. . . and in Virginia in a poor sandy soil under scrub oaks it has fared well for three years. There it begins to bloom, as with me here (in North Carolina) before Christmas and may last until the new year in spite of cold weather. Mine was lost after flowering, perhaps because I was thinking of our wet summers and planted it on a dry sunny wall. Perhaps had I put it under the pine trees they'd fared as well as under scrub oaks.

from GARDENS IN WINTER p. 102 (1961)

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THE IRIS AS A LANDSCAPE PLANT

Roy Davidson

Every year in iris season -- about the end of May in these parts -- the aspiring novice is likely bowled over by the gorgeous color spectacle of bearded irises. But most don't know (and the catalogs don't tell them) that for the greater part of the year such an iris garden is little more than a sea of green fans at best, and furthermore needs the old yellowing leaves removed to be neatly acceptable; from about October to April it is not that much in most climates, only a chaotic emptiness. The iris has acquired a bad landscape reputation on that account, and in spite of the unrivaled color that is breath-taking for all of three weeks, the tall bearded peak.

This is unfortunate, for the other forty-nine weeks of the year there are many other sorts of irises quite acceptable for the whole plant which succeed favorably in close grouping with other sorts of plant materials. These are mainly within the non-bearded irises, some of which tolerate shade, a few entirely evergreen and thus effective in the garden fully twelve months. Iris foetidissima is both, and furthermore it is available in several forms and colors. Garden literature short-changes this species simply on account of the "arty" or putty flower color of most, a drab it is usually called, but there is also a pleasant soft yellow and at least one lovely amethyst, named for the vale in Wales where it came from -- NANT GWILW (to rhyme with Aunt Grill-you). There is a form too with the best leaf striping of any of the varigated irises, about equally emerald and white, a really stunning foliage effect. This species is best grown in shade, unusual for an iris, and then it takes on a lovely finish like that of fine satin or well loved leather. All its forms are bleached or yellowed by intense sunlight.

Another valued for its year-round foliage is from coastal areas of southwest Oregon and into California, Iris douglasiana. The usual flower color is a sort of slatey blue so that the search for some clearer or richer colors, among them pansy-violet, and even snowy white (such as CANYON SNOW) is well worth the trouble. The favorite bitone AMIGUITA is lilac and violet in a most attractive pattern and there are others, such as the smaller AMI-ROYALE (even richer and a hybrid with innominata) available from the specialist iris growers. For greatest contrast of leaf color the recently named RHUBARB has the lower third of the fan colored bright red and also a very good purple flower in season. Foliage of this species is more relaxed and arching than the spears of the above species, and will be productive in half shaded positions. Both are quite tolerant of moderate summer drought in a cooler position once well established, but require watering until such time.

Iris innominata must have its due here, looking much like a thin and flowery version of douglasiana, though the plant has limited landscape value other than in the rock garden. Colors are even more varied, even to good yellows. Hybrids are intermediate in scale.

Then there are those irises for damp or even really wet places. Oriental I. laevigata is such a one, though in nature it prospers with only the normal rainfall or only occasional flooding. It is a winter-barren plant and the

flowers come in June in white and tints of lilac to sensational deep hues of cerise-purple (the one called REGAL which arose in British horticulture) and to cobalt and violet shades. Especially to be prized is the reliable old reblooming SEMPERFLORENS giving a second heavy season of blossom in autumn. There is at least one form with striking foliage brushed with a striping of silvery white, softer in effect than other varigated iris leaves.

Another very effective foliar display is that of the chartreuse Fleur de Lis, Iris pseudacorus Variegata, a really knockout accent with daffodils and doronicums and early emerging hostas, but by summer the leaf is Plain Jane green though to that time the half-and-half lime-and-ivory is quite breath-taking. The species will thrive in a variety of soils from ordinary moderately moist to soggy and even in the marsh, as well as in light conditions from full-to-no-sun although it does not flower heavily with fair light. Another striking foliage is borne by the form called POLISH MAHOGANY with the lower quarter of the leaf-fan so-colored as too is the flower stalk, the blossoms buttercup with penciled spot on each of the falls. Planted with red lychnis and the beet-leaf red plaintain this can give a wild-riot garden effect.

Rather similar, though done in violet rather than mahogany is the fan of the iris called GERALD DARBY for its English raiser. This may grow to as much as five feet by midsummer, but the flower stalks are not quite so tall and are colored the precise aubergine of the eggplant with the leaf fans similarly stained, the flowers a pleasant and harmonious purple with a mottled heart. This can give flowers for a full month from an extraordinary number of bud placements in each of the sockets. In earliest spring this foliage, new bright violet spears -- is most effective in the midst of a pool of Primula denticulata in lilac colors; the shade from the iris benefits the primula in summer, and in autumn the leaf color is in harmony with all the "micky-moss" daisies, and a further protection to primulas from sun and heat of Indian Summers.

These beardless irises can be divided spring or fall, though at the cost of really good flowers if done vernally. Early autumn may be best, early enough that a really good rooting is accomplished before winter. Fans of all these graceful irises impart a warm tan effect to the winter garden, and seed stalks can add to the iris reputation. They need replanting only as the clumps grow enormous in size; until such time just relax and enjoy.

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PERVERSITY: (IRIS RETICULATA)

Give it "full sun and loam -- exactly what loam I cannot tell you for it is one of those temperamental plants which either does, or doesn't, and it does this -- or doesn't -- in all sorts and kinds of soils, both light and heavy."

Clarence Elliott "Rock Garden Plants" (1935)

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OUR READERS WRITE

CACIQUE -- an Iris hexagona hybrid

I enjoyed the discussion about I. hexagona in SIGNA #34 of April 1985. I purchased The World of Irises almost a year ago, and was surprised to find that the chapter on Louisiana Irises contained information about the other Hexagonae but made no mention of I. hexagona

A first generation offspring of I. hexagona is alive and thriving in the San Gabriel Valley of Southern California -- this is CACIQUE, and regardless of its I. lexagona parentage we gardeners in this area consider it to be a Louisiana Iris hybrid. It is a hybrid I. fulva x I. hexagona subspecies savannarum, and was hybridized by Dr. S. S. Berry of Redlands, California, about 60 years ago. The savannarum form of I. hexagona is reported to be from Florida.

The foliage of CACIQUE is semi-evergreen, and is 30 to 50 inches tall at blooming time. The flower is a purplish violet self with narrow yellow signal stripes and deep rose styles. The color and form are quite close to those of the similar cross in Dykes' I. x fulvala shown on Plate XXI of The Genus Iris, except that I. x fulvala is illustrated as having more green and yellow coloring in the center of the flower than is present in our CACIQUE. I. x fulvala is I. fulva x I. brevicaulis (I. foliosa).

Although the flowers are relatively plain in comparison to those of the fancier recent hybrids, CACIQUE has advantages of vigor and the ability to tolerate a wide range of conditions. It was given to me by a neighbor. It has overgrown my planting spots, and I have given it away in turn. In this manner its vigorous habit contributes to its inexorable spread throughout Southern California.

In the spring of 1984 I attended a nearby exhibit and show that was given by a flower arrangement club. CACIQUE was the most-used variety of flower by a wide margin (including all types of flowers, not just irises). This suggests that it is present in many gardens in the area, and that it has become a common general garden plant.

CACIQUE sets pods readily. I have never raised plants from seed to see what they look like, but I may do so this year out of curiosity. Based upon the similarity of all the blooms that I have ever seen, and assuming that those which were seen were not all of the same generation, I suspect that seedlings are true to form. Should they be I. x fulgona?

Jim Rhodes, Glendora, California

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Anyone wishing to join a species robin, write to Florence Stout, 150 N. Main, Lombard, IL 60148 and state your main interests, what you grow, a other pertinent information and a place will be found for you in new s[illegible] robins just starting.

PLANTING TIMES FOR IRIS SPECIES

By Ernest G. B. Luscombe
from BIS YEARBOOK 1962

. . .The best time for transplanting irises varies somewhat for each distinct botanical group, and here it may be emphasized that the season indicated against each group is not necessarily the only possible occasion suitable for transplanting. When soil and weather conditions permit the larger Pogoniris types with stout, fleshy rhizomes can be moved at any time of the year without serious detriment to the plant. I have simply suggested in each case the most propitious season which will give the best chance of rapid and successful re-establishment of the plant in its new size.

Planting times for various kinds of Irises

BULBOUS

Reticulata and Juno (Scorpiris) groups: September to October
Xiphion Section (except Iris xiphionides): Late October
Iris xiphioides: July to September: bulbs should not remain dry too long
Plant 4 to 5 inches deep

RHIZOMATOUS

Pogoniris species: Immediately after flowering, or August-September
Oncocyclus, Hexapogons (syn. Regelias) and Regelio-Cyclus hybrids: October

APOGONS

Species in group Hexagonae, Iris longipetala and Iris Kaempferi: August
All other Apogons (except the Californicae and Iris verna -- see special Note below): September to October, or in April, preferably while the ground is slightly moist

EVANSIAS

Ii. tectorum and milesii: July to August
Iris japonica: Just after flowering, or August to September
Ii. wattii and confusa: Just after flowering, say during May
Ii. gracilipes, cristata and lacustris: (see special Note below)

NOTE -- Apogon species and Evansias of dwarf or slender growth some of which make scanty root-fibres, should be transplanted in late Spring or early Summer, i.e. towards the end of the flowering season or just afterwards, at which period new roots are being produced by the understock. One can ascertain whether this is in fact taking place by gently scratching away some of the soil close to the plant. In such cases, choosing the most favourable time is especially important if it is desired to split the clump into several portions. A few of the free-growing species within the group Californicae, especially Ii. innominata and douglasiana do, however, make new root growth also in the Autumn, and can be safely moved then if preferred. Most of the dwarf Iris species, however, have a small root-system which may be entirely contained in a compact ball of soil. Therefore, if it is merely a question of transferring such a plant (without division) from one part to another of the same garden, this can be done at various times of the year if the weather is mild and humid and the operation is done carefully and quickly, keeping the ball of soil intact. After the iris is replanted firmly a good soaking with rainwater is advisable.

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MEMBERSHIP REPORT

Total membership of SIGNA stands at a magnificent high, 438. This includes 74 new members who joined in 1985. Some joined as a result of the efforts of our "Speakers Bureau" (Clarence Mahan, Joan Cooper and Florence Stout -- if there are others who speak publicly on behalf of SIGNA, please send a report to the secretary). Our thanks to those who spread species information and bring in new interested members. Makes a difference.

Unfortunately, the list also includes a few whose dues are delinquent. If you are among those, please save your society some expense by sending it right away. Many folks find it convenient to pay 3 years at a time (only $9 now).

If you know someone who SHOULD be a member of SIGNA but isn't, why don't you 1) suggest it to that person or 2) send a gift subscription. Consider SIGNA subscriptions for Christmas! For birthdays! For Thanksgiving!

Florence Stout, Secretary

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EDITOR'S COMMENTS

October 29,1985

I left myself little enough space it seems for some things that need to be said. Most especially, sincere thanks and appreciation for all the fine contributions that went into this issue. If you examine the "Contents" list, you will realize that there would hardly be a #35 without Roy Davidson, but we want you to know that every single item is appreciated. It is a real privilege to work with people who are so willing to contribute their ideas, their knowledge, their research or whatever, that SIGNA can be a success.

Alan McMurtrie (address inside front cover) reports that he can supply: back issues of SIGNA #2, #9 through #15, and #17 to present at $1.50 each; the Species Iris Study Manual at $5.00 and the Alphabetical Table and Species Guide (BIS?) at $1.50. Checks to SIGNA.

The Treasurer reported to the Chairman last April or before that SIGNA had a healthy bank balance of $9,862. We had hoped for a report for this issue, but shall we think spring? We received a most welcome boost of $350 from the Northeast Apogon Iris Auction in August. We seem in good shape, but let's not forget it is last call time--SEND YOUR SEEDS TO THE SEED EXCHANGE!

Some of us, maybe especially your Editor, have been anticipating a complete SIGNA Index, but it fell upon most unhappy times; of our volunteer's illness, and computer wipeout, and it died. However, we have a new volunteer on the job--Eric Tanksley-Clark of California, Missouri, expects to be ready to publish an Index by spring. We could use some feedback as to how many want to receive it so we can make an educated guesstimate of how many to print.
Joan Cooper

SEED EXCHANGE ADDRESS INSIDE FRONT COVER