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OF THE
AMERICAN IRIS SOCIETY

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MIDWEST NUMBER

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Associate Editor: EUCLID SNOW

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THE AMERICAN IRIS SOCIETY

FOREWORD

■ There is such a friendly relationship and solidarity among the iris people of the Middle West that it has seemed to the Associate Editor that the story of the iris in the Middle West was only one story and that the various phases of iris activities were parts, all of one piece.

We have, therefore, essayed the innovation of writing, editing and compiling this story into a continuity, rather than as a series of articles, separate and distinct and unrelated. We have cut and spliced the "shots" of middle western iris life so generously contributed by our midwestern members into as logical a sequence as our ability permitted, avoiding repetitions so far as possible, and building up the story of the iris in our gardens.

We believe that in this way the story can be better told, the picture more truly drawn, and the interrelationship of the various states and communities of this great part of the country, so widespread in extent, be better shown.

We wish to make our most grateful acknowledgment and extend our hearty thanks to our midwestern fellow members who have contributed so freely to the making of this BULLETIN and we trust that they will bear with us indulgently in the necessary cutting and splicing process of putting this reel of our iris life together.

We hope and trust that the members of the Society at large may find something of value and interest to be learned from the experiences of the iris growers of the Middle West which follow herewith.

EUCLID SNOW.

IRISES IN THE MIDDLE WEST

■ “From Ioway, where the tall corn grows” iris inspiration came to America.

Iowa, heart of the Middle West, became the birthplace of the American iris as we now have it because it was the birthplace of Bertrand H. Farr, the man who made American gardeners iris conscious.

Farr’s catalogues of the earliest twenties, still encyclopedic, were the first to offer new American irises to the country. It was the first comprehensive list of existing irises to be printed and distributed in the United States. With colored plates of his new seedlings of more than usual truth to nature, gardeners of the country were awakened to the fact that here was garden material, comparatively unknown, neglected and untouched, of the easiest culture and of supreme beauty.

The iris entered the American garden as a dominant factor.

Since that time the Middle West has become an originating and distributing center of the world’s best irises and a foremost exponent of their culture and development. Just what the Middle West has contributed to the world’s iris wealth is strikingly shown by checking over the leading catalogues of American dealers,—excluding those chiefly devoted to selling the output of the dealer, various lists of “100 best irises,” regional lists and similar data and averaging the figures.

Where irises originate

Here are the approximate figures in per cent as to the origin of the best irises of today:

Middle West.....	26	California	12
France	24	Southern States.....	7
England	17	Germany	1
Eastern States	13	Total	100

It is, perhaps, fitting here to quote Farr’s eloquent words concerning the inspiration that his native Iowa prairies and sloughs—we call them “slews” in Iowa—gave him. They are found in the foreword of his early catalogues which stand as epics of their kind.

“I hardly know just why the iris became my hobby, but I think the influence of early boyhood days out on the wide trackless prairies is responsible for the love I have, not alone for the iris, which was an important factor in those early days, but for all flowers and all the beauty of outdoor life among growing things, the fresh air, sunshine, green fields and running brooks. . .

“We did not have brooks out on the prairie—all studded over with miniature lakes and ponds.

“There was the open clear water in the center, hedged around by the tall green rushes. . . . Further out surrounding it all with a halo of shimmering blue, for all the world like the Heaven itself, grew the irises, *Iris versicolor*, water flags, as we used to call them.”

Blue water flags show the way

So to the blue flags of middle western prairie ponds and sloughs, American gardeners owe the inspiration that gave them today's great race of irises, stateliest and finest of the late spring and early summer garden.

Before Farr became the great apostle of the American iris, it was a comparatively negligible garden factor in the Middle West. In fact, previous to Farr's great iris revival, bulbous irises, Spanish and English, were far more frequently grown than the tall bearded, and the dwarf bearded were represented only by the little earliest of all red purple *Iris pumila atrovioleacea*. So far as the unrecorded iris history of the Middle West can be traced, this was the iris pioneer here and its presence can be fairly definitely established for about a century as it has been handed down as a sort of floral heirloom from generation to generation in a number of families.

There were no tall bearded irises in general use and no beardless irises at all. First of the former and probably as ancient a midwestern dweller as the little dwarf was the old time “orris,” *Iris florentina alba*. Close to it in age is *flavescens* and an old purple *germanica* known to the botanically elect of the early days as “*spectabilis*.” Old *squalens* and *amoena* types, never identified by name next appeared and *pallida dalmatica* and then there came an epidemic which still rages of John Wister's boyhood friend, *Honorabilis*. Ask him about it.

There are a lot of things that never can and never will be

explained. One of them is why this iris was ever called the same kind of a name they call cabinet members, congressmen, judges and such, The Honorable.

Collecting a garden instinct

The earliest plant to arouse the specializing instinct of the early gardeners of the Middle West was the tulip but it is the usual experience of the small gardener that as his collection increases and the bulbs multiply the constant digging and re-planting just wear him down. As a majority of the pioneer gardeners of the Middle West were afflicted with that type of New England ancestry that makes it extremely painful to throw anything away, hence attics full of antiques, tulips sooner or later swamped them.

The iris in its new forms came along at the height of tulip enthusiasm due to the introduction of the Darwins and usurped the tulip throne. A canvass of the veteran amateur iris addicts of the Middle West shows that most of them once had the tulip habit.

With middle western gardeners, to see the new irises was to want them. Once started, their dissemination became remarkably rapid and new irises went into hundreds of gardens and iris centers such as the Cincinnati district, the Fort Wayne-Bluffton in Indiana; the Freeport section and the Omaha-Lincoln center about which iris interest has concentrated.

Freeport, because of its central location, its pioneering in fine irises, and its garden club numbering some of the most able gardening leaders in the Middle West became the iris capital of this section. The annual flower show of the Freeport Garden club and the joint attraction of a magnificent show of the finest irises in the world in Mrs. Pattison's garden, always generously thrown open to visitors during the show week has attracted thousands of gardeners to Freeport annually. It is the big event of the garden year.

Chief credit for the remarkable development of this show is due in unstinted measure to Mrs. W. L. Karcher who has had an equally vital part in the development of the big Chicago spring flower show. She has a genius for showmanship rarely manifested and produces fine shows in seasons when it has looked almost impossible to do so and she has never postponed a show or changed it to other than the announced date.

Twelve years of great iris shows

Mrs. Karcher's all too modest summary of the show record of herself and the Freeport Garden club is this:

"The Freeport Garden club sponsored its first annual iris show in 1921 with ten exhibitors to produce the show. The tremendous interest and enthusiasm shown at that time are responsible in a great measure for the Freeport iris show becoming an annual institution visited by thousands of iris lovers throughout the country.

"In 1928 the annual meeting of the American Iris Society was held in connection with the Freeport iris show and visitors from nineteen states were registered.

"In 1933, Freeport was again chosen for the annual meeting, sharing honors with A Century of Progress in Chicago as an interesting place to visit. At this show twenty-five states were represented.

"In the last twelve years Freeport has grown to be a recognized iris center and is now very well able to produce from two to three hundred gardens showing the finest varieties that are grown in the United States.

"That Quality Gardens is responsible for the great interest in the growing of irises in and about Freeport is a well known fact, purchasing as Mrs. Pattison does the finest varieties obtainable from the most famous hybridizers the world over and generously opening her garden to visitors has given opportunity to many iris lovers to study at first hand the introductions of each succeeding year, thereby developing many ardent iris fanciers in this section of the country."

Introduces the Sass Brothers

The important function of the Freeport show and Quality Gardens, which cannot logically be separated, in introducing the modern iris to the Middle West cannot be minimized. The show introduced the Sass Brothers to the Middle West several years ago when they brought from their Nebraska farms a table of irises inconspicuously placed on one side of the show room that stole the show and became the center of attraction.

On this modestly placed table were the first blooms to be publicly shown of such irises as Midgard, King Tut, at the time the most brilliantly colored iris yet introduced, Old Gold, and a

series of the blended plicatas that first brought these Nebraska plant wonder workers to the attention of the iris world, plicatas with beautiful peach tones that up to that time had been foreshadowed only by the old Mary Garden of Farr, among them King Karl, Jubilee, Lona, Aksarben, Beau Ideal, Mid West and others of colorings and patterns unique at the time.

The show also introduced Dr. Loomis of Colorado to the iris world who has given us such fine things as Blue Velvet, Spring Maid, Shirvan, Chromylla and Erebian, a breeder who imposes most exacting standards upon himself and has more fine things in the offing.

Mrs. Pattison tosses the bouquet back to Mrs. Karcher thus:

“The success of the Freeport show from its small beginning of a mere handful of exhibitors to its present long list and full number of classes covering the entire iris range is due to the tireless work and energy of Mrs. Karcher who possesses rare organizing ability. She is entitled to full credit for achieving remarkable success. Her work as chairman of the show committee of the American Iris Society has also been an important factor.”

They are both right, let us call it a team.

Waves of iris influence

Following Farr, waves of iris influence swept over the Middle West, all leaving their effect until iris independence seems to have been achieved. The first definite influence after Farr was that of Miss Sturtevant, second American iris breeder to issue a catalogue of her own productions. Miss Sturtevant also introduced us to the earlier Bliss productions. Miss Sturtevant's influence has been a lasting and most valuable one.

Although many of her earlier introductions, sterling novelties and garden favorites of their time, have been superseded, she gave to American iris breeders foundation stock for their work that figures importantly in a great number of the finest modern irises, notably Sherbert, Nancy Orne, and Shekinah, the last being the foundation of an entire race of yellows and blends.

Perry's irises held brief sway, notable for their size and height and possessing fine garden value, good but for the most part not outstanding.

The French influence has been the strongest one, it being introduced through Farr in his first catalogues which introduced the giant Alcazar and other Vilmorin products such as Am-

bassadeur, Ballerine, Opera and others which with a few from Millet and Denis were the finest irises of their day and still hold high rank. After the first flight, Vilmorin irises showed little progress and Cayeux forged to the front as the foremost foreign iris breeder and still holds sway. Cayeux irises became the chief novelties to be inspected each year. But American breeders were rapidly overtaking the European breeders and today have caught up with them and passed them so that the gardens of the United States and particularly the Middle West are entirely independent of foreign irises and it must be an exceptionally fine one to make its way against home products.

Dominion starts a revolution

The most dominant influence of all and one that still prevails is that of Dominion. In fact the introduction of this iris and its first generation of seedlings started an iris revolution and changed the complexion of the iris garden. Dominion was first domesticated in the Middle West,—in Cincinnati. Earlier importations in other sections failed to survive for some reason or other but Dominion took kindly to Cincinnati and its growers.

To those of us visiting Cincinnati, its outstanding characteristics seemed to be clay, Germans and Tafts. Other places have plenty of Germans and plenty of clay but they have no Tafts so it seems fair to give them the credit. At least Mr. Wareham was the first to produce Dominion seedlings, vast improvements on existing irises and on their Dominion parent. These remarkable seedlings of Mr. Wareham, withheld from commerce for some years, inspired other Cincinnati breeders, notably Dr. Wiley McL. Ayres who has become in the quality of his introductions one of the foremost iris breeders of the world.

The pre-eminence of the Middle West in the production of fine irises is due largely to the work of the Sass Brothers, Hans and Jacob, of Nebraska; the late E. B. Williamson of Indiana, Dr. Ayres, J. L. Grinter of Missouri and a few others who have scattering introductions of quality.

In the garden of Dr. Ayres

Dr. Henry Lee Grant of Louisville gives interesting comment on the irises of Dr. Ayres as he studied them in Dr. Ayres' Cincinnati garden last spring, as follows:

“After a week with my own seedlings and named varieties

early Sunday morning, May 20, I was in Dr. Ayres' garden in Cincinnati.

"Soon after sunrise as we stood below Coralie and looked east into the early sun it appealed to me as the most striking color I have yet seen in an iris.

"Byzantium which was grown in the Ayres garden for two years is very similar to Jean Cayeux but is superior due to the fact that as the flowers age they do not seem to fade.

"Burning Bronze which attracted so much attention in Freeport in 1933 was in fine bloom and showed no evidence of being a poor grower as indicated by reports at Freeport. Growth was very vigorous.

"Jasmania was probably the best first year seedling I saw. Mrs. Pattison has taken it for introduction. It is yellow with some light brown blended on the haft which adds to its charm. The parentage is a (yellow plicata seedling x Sherbert) x (Cardinal x K. V. Ayres). While many of Dr. Ayres' better yellow seedlings contain W. R. Dykes, this, his best one, does not. The name is taken from a celebration in India where all the people wear yellow clothes.

"Tint o' Tan is a light brown blend with unusual style branches, deeply cleft and turned up clawlike.

"Order of the Purple is a fine deep purple. It is perhaps an improvement on Meldoric.

Red brilliance in the Cheerios

"Cheerio and Cheerio's Brother are improvements on Dauntless and both are very brilliant. Dr. Ayres felt it would have been more fitting for either of them to bear the name of Red Dominion than the iris that has it—Red Dominion. Nevertheless, Red Dominion is a very superior variety and worthy of the name although not as red.

"Ivory Bowl is a rounded, shapely iris, creamy in color effect and very attractive.

"Robert is a yellow blend, named for the late Robert Emig-holz. It was well grown, outstanding and an altogether desirable variety. Meldoric, Venus de Milo, K. V. Ayres, and Indigo Bunting were blooming in well established clumps.

"One bed of seedlings of plicata parentage showed some color breaks which may lead to the good red and yellow plicatas which Dr. Ayres is seeking.



K. V. AYRES

“The yellow, red and tan seedlings are probably the outstanding colors Dr. Ayres has produced. He has almost perfected domed and locked standards which tend to make the irises weather proof. One cannot help but get the impression that many of his seedlings are equal to and some superior to Eclador and Chromylla as they bloom side by side in his garden.

“It will be interesting in another year to compare them with Alice Harding, Lady Paramount, Happy Days, and, perhaps, Golden Hind.”

Better colors Dr. Ayres' goal

Dr. Ayres wrote in most entertaining detail on “The Fun and Fuss of Hybridizing” for the 1934 Year Book of the Iris Society of England and has graciously given permission to print excerpts from it here. Concerning the striking influence of the Dominion race, he says:

“Then came the time when I had pollen from the seven day wonder, Dominion, and in the next year both Dominion and Cardinal were flowering in my own garden, though six pounds apiece seemed a big price to pay in those days. Did it pay to get this new breeding stock? Most certainly it did and I used the pollen from both of them on all the good ones I had and on many of the poor ones also. New forms, new colors, and greater substance came from both of them.

“Can colors be altered? Most certainly they can. If it were not possible to change, modify, intensify, reduce and blend colors, the whole fabric of iris hybridizing would fall to the ground. For who except the scientists would want to alter merely the size, form or perhaps the branching. The very advent in the catalogues each year of scores of new seedlings, some of them quite worth while, proves how simple it all really is.

“Do not get the idea, however, that colors can be changed as easily as we mix them with a paint brush.

Chromosomes do the work

“In the case of flowers it is man proposing and the chromosomes disposing that gives us our breaks and blendings of colors. I will say, however, that in working with tans and brown blends, it almost seems like the mixing of actual colors from all the gradations of tones that have come in my garden.

“To cite a case, an extreme one, of altering colors by planning, take Robert, a yellow blend of good substance with slight penciling of blue along the midrib of the falls. Its forbears on one side were Sherbert (red) and a seedling from Nancy Orne x Dominion (reddish yellow), giving from the cross a yellowish blend and on this was used Tuscan Gold (tan) to get a still better yellow blend.

“To this was finally added the best yellow blue blend among a series of seedlings of many colors out of a Dominion by a yellow Kashmir White seedling. So at the end of eight years of planning to get a yellow into Dominion or out of it, the goal was reached.

“Lest the new hybridizer become discouraged at the mention of those eight years, let me say it does not always take so long to get a good iris. Red Dominion was the combination of Dominion x Nancy Orne to which I again added Dominion pollen. Remember Mr. Bliss said that he used the reddest he had, Cordelia, in trying for a red iris and created Dominion. Some years ago when I worked with Dominion it frequently gave me reds. Again in Red Dominion it was chromosomes that had the final say.

Domed closed standards best

“We next come to form. Look over your isises and those in some friend's garden and note the wide range one has to choose from in both the standards and the falls. The former are tall or short, wide or narrow, and the falls show every degree of variation from horizontal to straight hanging. The standards may open at the top which I do not favor, or they may curve together and dome which is the form to be preferred, not only for appearances sake but because the wind does not easily blow them open.

“In the falls it is a matter of choice which form you breed into your seedlings. Princess Beatrice is a compromise between two extremes (horizontal and straight hanging) and what iris is more attractive in color or form?

“We now come to the third point, substance. If you think lightly of substance look at Meldoric or Bruno after a rain storm and then cast a glance at Lord of June.

“In regard to many reciprocal crosses which I have made and

planted in beds side by side, just to study the parental influences, if any, I am very much inclined to agree with Miss Sturtevant who has written me that she feels that the pod parent tends to influence the height of stem and growth of stem.”

Intermediates save the season

In a season of bitter disappointment in the Middle West when parching drought, searing winds, and broiling sun at 100 or more in the shade for days at a time, left iris foliage burned white and bloom so bleached and discolored among the tall bearded as to be almost unrecognizable, comes to mind one glowing beauty spot that saved the season from a total loss, a big bed of intermediates interplanted with the May flowering tulips. Although dwarfed by the drought the tulips held their color and the intermediates likewise were uninjured as they escaped the terrific heat of two weeks later. It seems only in the Middle West that the glorious possibilities of the association of the intermediate irises and the Darwin, Cottage and Breeder tulips is realized and utilized and more gardeners are eagerly seizing upon this association of gorgeous coloring each year as examples of this alluring planting are seen. In the Middle West an intermediate iris is a hybrid between a tall bearded and an early dwarf iris and it also practically means Sass irises for there are very few of this class from other breeders.

If Hans and Jacob Sass had done nothing else with iris, their creation of an entire race of intermediates would be a lasting monument to their fame. In more than twenty years of work with this class they have produced thousands of them. Their friends have tried to prevail upon them to select a list of fifty or a hundred of their many worth while intermediate seedlings and name, register and introduce them to make the type more readily available for gardens and to place this class so long libelled by the dull and dingy Goos and Koenemann and Caparne irises on a well defined and distinct footing. Of their thousands of plants they have named only about eighteen.

Cryso-ro the best iris yellow

Acquaintance with the Sass intermediates has directed the attention of Middle West iris people towards other breeders for this type but few are doing anything with it. Col. Nicholls is the only one of note and he has given the iris world its finest,

purest and most brilliant deep yellow in a typical intermediate, Crysoro, a wonderful bloomer and fast increaser that is a spot of glowing beauty in its season.

In addition to the intermediates, midwestern breeders are giving the iris world other new types. From the Williamson gardens come a distinct class known as table iris, small and graceful, of good color and admirably adapted for cutting. They have also another type, late dwarfs, blooming with the tall bearded of which Hans Sass' Pixy was a forerunner. These will be most useful to put color into rock gardens where now they begin to grow dull after their flash of spring bloom.

Mr. Jacob Sass has given us a new series of onco regelio and dwarf bearded crosses of distinct character and unusual coloring and is adding to it. He also after years of effort reports progress in putting height and size into his famous plicata blends of which King Karl is the best known and most popular. These had resisted all efforts, giving good blends when used for breeding purposes but the plicata pattern being lost. Through the brown trimmed plicata Chestnut, the type is re-appearing.

Wambliska has opened the way to an exceptionally fine series of irises particularly some remarkable whites. The story of Wambliska which has never before been told is an interesting one. It is of precisely the same parentage as Purissima, Argentina and Conquistador.

Story of Wambliska

A few years ago Hans and Jacob made an early spring trip to California to see the California irises. In the garden of Prof. Mitchell they saw one of the first blooms of Purissima in its finest form. Jacob at the time declared that he never expected to see a finer white and probably not another as good as Purissima then appeared. But there was the question of its hardiness, neither parent being hardy in Nebraska.

It occurred to Jacob that Juniata, an ironclad old timer from Farr, was one of the parents of Conquistador and he figured that there might be a possibility of a white of the same parentage inheriting this quality that would be hardy in Nebraska. He went home and decided to try the experiment and succeeded in getting pods of seed from which he got 89 plants. Of the entire 89 only Wambliska proved hardy. It has been magnificent on Mr. Sass' farm but not so good elsewhere.

Sasses are great bookkeepers

The Sass Brothers in addition to their other accomplishments are great bookkeepers. They have raised more than 110,000 seedlings in the last twenty years and have kept records on nearly all of them. But let Mr. Jacob Sass tell the story.

“Twenty-seven years ago I bloomed my first iris seedling. Since that time Hans and I have grown more than 110,000 seedlings and we have kept almost a complete record of all. We, therefore, know what is in all our irises and what factors we may expect to appear in breeding. Sometimes we get them and sometimes not.

“Last season was most unfavorable and only about forty per cent of our seedlings bloomed but we had many fine new colors among them in yellows, yellow plicatas, new reds, red browns and light and dark blues.

“I have been breeding for red irises for many years. I tried to get large reds from Seminole, Medrano and others at first. The seedlings were pleasing in color but were lacking in size, height and had badly bunched stems. When Hans produced Red Wing and King Tut and other large flowered reds I gave up these old timers and since then have used Red Wing, King Tut and their sister seedlings in developing reds.

“I crossed a sister seedling of Red Wing with Cardinal with good results. Red Wing x King Tut gave all fiery red browns. The best of these is Spokane. Two of the produce of the sister seedling of Red Wing x Cardinal were kept under numbers 29-9 and 29-12, the first a near variegata and the second on the Red Dominion order.

“Baldwin x King Tut also gave a fine line of reds. The best one of this lot is Joycette. The Baldwin x King Tut cross gave better stems than the other crosses for reds and the blooms were better placed. The Cardinal cross gave a majority of stubby, bunched stems, a fault I find with almost all Dominion race first generation crosses.

Reddest reds are developed

“Crossing 29-9, the near variegata, by King Tut gave 32-18, a fiery red brown, most intense in coloring, that is to be named this year. This cross also gave Golden Helmet which has been introduced. 29-12 x Joycette gave the culmination of the series

in my efforts for reds which has been named The Red Douglas.

“The Red Douglas, I believe, is as fine a red iris as there is. It is a derivative of Baldwin, King Tut, Cardinal, and a sister seedling of Red Wing and combines the good points of these four. This is the record of my efforts in breeding red irises.

“Another line of breeding has given me an array of good whites and fine light blues, this line of breeding being based on Wambliska. Wambliska’s parentage is Argentina x Conquistador. Out of 89 seedlings from this cross only twenty reached blooming age. The others rotted and died before blooming and out of the twenty only one survived finally, the survivor which has proved absolutely hardy being Wambliska.

“Wambliska x Matilda, a heavily blue-trimmed plicata, gave nine seedlings. Seven of these were whites and two were light blues. Matilda was the offspring of two whites. One of these two light blue seedlings is Blue Monarch which has a fine blue tone and a well branched stem carrying many buds. It stands up well under Nebraska’s trying winds and sun.

“Wambliska selfed produced a great majority of intermediates, ranging in color from light blue and lavender to white. Purissima selfed produced an identical lot of seedlings with the same preponderance of intermediates.

“Wambliska x 28-11, a sister seedling of Pink Satin of deeper coloring, gave one of the purest whites I ever saw which has been named Crystal White and is to be introduced this year.

New yellow line is started

“Wambliska x Rameses produced many fine warm whites with yellow beards and hafts, also some lavenders, and one, 32-50, with yellow standards and white falls, large and tall. I had expected more yellows from this cross. This yellow, 32-50, selfed produced 47 seedlings of which two bloomed last spring. One was an empire yellow self and the other a red blend. Both are large flowered on 38 to 40 inch stems, well branched.

“Here is the history of our new series of thoroughly hardy tall large flowered plicatas.

“Conquistador crossed with seedlings of Hans old No. 1, a blue purple, gave blues and one large flowered hardy plicata. This crossed with Los Angeles and San Francisco has given a series of large flowered plicatas, the majority of which have proved absolutely hardy here in Nebraska.

“A series of very dark irises has come through (5-1, a dark purple seedling of Hans x Baldwin) x ((5-1 x Cardinal) x Tenebrae). The best of these has been named The Black Douglas. Reciprocal crosses of Black Wings x Blackamoor have given some fine very dark rich ones. Blackamoor is ((Archeveque x Beau Ideal) x Baldwin).

“A start on yellow ground plicatas of size, height and good quality has been made through a cross of ((Chestnut x King Tut) x Golden Helmet). Two yellow ground plicatas appeared in these seedlings which have been kept as 34-18 and 34-19 for further development. In a few years we should have real yellow ground plicatas from them.

Iris species in Nebraska

“The new Louisiana species I have growing beside a little stream and this seems to suit them perfectly. They have bloomed well, Kermesina also grows excellently under these same conditions.

“Bucharica has bloomed two years in succession.

“The onocyclus, regelios and regelio-cyclus we have grown successfully by lifting them in July, keeping them dry and transplanting again in late fall. They have given many fine blooms.

“Spurias and Siberians grow excellently. The Japanese grow to perfection by the stream and have done fairly well on a hillside.

“Tectorum is kept growing in good condition and blooming freely by transplanting every two or three years.

“Dichotoma grows anywhere in the garden. Tricuspis is good in partial shade as is also cristata.

“Shrevei, foliosa, fulva and their hybrids find congenial quarters beside the stream and do fairly well on the hillside.”

Iowa with the traditions of Farr behind it and the Sass farms just to the west of it has long been a good iris state. One of its leaders in promoting iris interests and a familiar and popular figure at midwest iris gatherings is Mrs. W. G. DuMont of Des Moines, who reviews the iris situation in the Hawkeye State.

Iris growing in Iowa

“Even in normal seasons in Iowa there is more or less hot, dry weather, but the rainless spring and summer last year were un-

paralleled in recent years with the thermometer above 100 for 26 days. In spite of this prolonged drought, I lost no bearded irises and only three clumps of beardless.

“In July, 1933, we moved from five acres to a half acre. Although my husband and I scorn the idea that we are getting old, we welcome the lessened work and also our ability to keep the entire garden in better order. The general plan of our peony and iris planting is a wide central path crossed by another, making four rectangular plots surrounded by paths. In these are one each of two hundred peonies with the iris all around the outside of each plot. We are indebted to Mrs. Preston Rice of Grand Rapids, Mich., for this idea.

“The area has good drainage and lots of sun. We are both happy and satisfied over the prospects and also are having fun experimenting with clay soil after being long used to black loam.

“I am now growing fewer and better iris, having held on to fifty of the newer and a few of the older kinds, chief among the older ones being Tid Bit and Yellow Moon.

“The beardless that I have retained are dichotoma, Dorothy K. Williamson, ensata, graminea, guldenstandiana, missouriensis, the pale form of psudacorus, the Siberians Blue Charm, Kingfisher Blue; the spurias A. J. Balfour, alba, Lord Wolsey, Monspur and Sunny Day and also tectorum.

Sunny Day a great spuria

“Outstanding among these beardless is H. P. Sass' Sunny Day, a glowing yellow of great size, a spuria.

“After trying at least twenty-five of the dwarfs I have reduced the number to five, the early little atroviolacea, the first to bloom for me, the date being from April 4 to April 24. The light azurea is next. Some say it is first for them but I am sure it must be the location that makes the difference. Then Marocain for deep purple, a good doer. For white and yellow some Sass seedlings are finer than any named varieties I have tried. The yellow sometimes blooms in the autumn.

“This year the only one to autumn bloom for me was Autumn Queen. Our rains came too late to force the bloom buds. Some years I have had it in August but September is the normal month to find it throwing blooms stalks.

“Last May and June I saw fewer iris than in ten years, my own giving sparse bloom from two moves the summer before, first

into temporary rows and then into permanent quarters. I did not get to the annual meeting, much to my regret, but had one charming morning long remembered in the garden of Mrs. Herman Iltis.

Pink Opal lives up to name

“It was like an opal with the accent, a great clump of Jacob Sass’ Pink Opal, long known as 28-12. It certainly has class for garden effect but is not as good a show flower as Imperial Blush. This pink mass defied description.

“There are not many in Des Moines spending their last cent for irises. Most gardeners care more for garden effect than for new creations. Mrs. Iltis and I each year try to visit the Sass gardens, missing the past summer. Mrs. Iltis has a beautiful garden the year round, making good use of fine iris. The real iris fans here number about half a dozen. Roy Barnquist tucks his treasures in here and there. He is much interested in the new hemerocallis.

“Three men, Arnold Swanson, Dr. E. H. Lehman and Dr. A. P. Stoner are alike in their interest in the new iris. They garden with meticulous care. Everything is done exactly as and when it should be done.

Farr varieties still in Iowa

“If one wants to check up on good old varieties they are to be found in the garden of Carl Singmaster. There one may even find most of the Farr introductions.

“In Sioux City it is very different. There many go in for the new irises in a big way. Because of this they stage wonderful shows.

“The Charles Whitings of Mapleton have the best time of any Mr. and Mrs. I know of with their iris. They keep expanding and expanding. When they get their land filled up they buy more land so they can buy more irises.

“The clever and original Mrs. Jessie Shambaugh of Clarinda issues invitations to come and meet the notables of the iris world such as Dauntless, King Tut and others and has done much to popularize the beardless types in her vicinity.

“Perennials I have found useful with the irises are first of all sweet rocket, the purple variety which is luscious. There is a nepeta earlier and darker than Mussini, Souvenir de Andre

Chaudron, that is a very good foil for the irises, seeding prodigiously, whole flocks of little nepetas springing up.

“Others are white dictamnus, pyrethrum, bleeding heart with intermediates, garden heliotrope, and all the thalictrums which are a joy for their contrast in foliage even if they never bloomed. *Verbascum phoeniceum* is one of the new things to me that I have been seeing with irises that I shall not be happy until I have tried.

“I have noted many speak of the similarity of the blackberry lily and *Iris dichotoma*. I have never seen it noted that they differ in that the blackberry lily has yellow roots while those of *dichotoma* are white.”

St. Louis goes in for the iris

The St. Louis district with the wide awake St. Louis Horticultural Society and the Missouri Botanical Gardens as inspirations bulks more importantly in the iris world each year. A laudable attempt to bolster up the test garden in the botanical gardens is being made by interested iris growers in the district. Their efforts and a survey of irises in the St. Louis district are presented herewith by Mr. John F. Wiesner:

“There is a remarkable growth of interest in irises in and around St. Louis, which is developing into real enthusiasm. The modern editions of the ‘flower of the ages’ are now to be found among the most cherished subjects in many of our perennial borders, dooryard gardens and informal plantings.

“We also see increasingly large numbers of new things exhibited at our spring flower shows. These annual shows are big events held in the spacious glazed display house of the Missouri Botanic Gardens and are sponsored by the St. Louis Horticultural Society with approximately a thousand members. Competition was so keen in the 1934 show that the judges put in three strenuous hours in passing upon 47 classes in the iris section. No antiquated sorts were shown and it required perfect condition to figure among the successful contenders. Among the winners were found such irises as Depute Nomblot, Mrs. Valery West, Sir Michael, Dauntless, Dolly Madison, Los Angeles, Sensation, Ophelia, Coronation, Dorothy Dietz and William Mohr.

Plea for the test garden

“I feel that as a society we have not yet, unfortunately sensed the unusual opportunity so graciously offered in this centrally

located city for the establishment and maintenance of trial grounds where authentic tests may be conducted. Situated on the borderline between the north and south, St. Louis is swept by chill winter winds from the north which often drive the temperature downward 30 degrees in a single day, then frequently followed by south winds that leave growing vegetation in their wake.

“This intermittent thawing and freezing subject irises to the acid test, yet the worthy contestants never fail in their time of lavish adornment, when again the diversified weather conditions facilitate still further tests of comparative merit.

“The Missouri Botanic Garden is a great walled garden located in the heart of this midwest metropolis and has long been recognized as a mecca in the horticultural world. Many thousands of visitors pass through the turnstiles each season.

“What have we done? We have cluttered up the grounds with a long list of varieties, many of which have been voted into the discard and we have not at least to my knowledge, advised the elimination of these varieties. We have failed to keep the collection up to date.

“Finally we have failed to see a single report by an accredited judge wherein he referred to certain varieties as they were grown in the test garden. Why not avail ourselves of the advantages in studying new varieties in a garden where each variety receives the same care and is grown under similar conditions in a climate which is rigorous yet peculiarly suited to practically all species of iris? The many visitors from all parts of the country would see what the new irises really are and what the hybridizers and introducers have in the offing, free from all influence other than that of actual merit.

Asks society to co-operate

“Let me suggest that through co-operation between a committee of the society and the botanic garden a proposition be agreed upon in which the garden would receive one or more plants of certain accredited and meritorious plants now in commerce, thereby bringing the present collection up to date and with provisions made for systematically discarding or eliminating superseded varieties. Then finally prevail upon the growers to forward for trial such new varieties as have been selected for

introduction, duly registered and otherwise qualified, the duty of which would befall either the hybridizer or introducer.

“Such a system would at once not only assure others of the sincerity of the distributor but would more accurately establish the merit of the new irises and finally help to control in some measure at least the ever increasing output of new varieties.

“It has been my pleasure and privilege to visit several interesting iris gardens in the vicinity of St. Louis and to participate in the judging of the iris section at the spring flower show in the past five years. I have witnessed the gradual evolution of quality and beauty in irises to the point where I feel that we can now hold a position of consequence in the iris world.

St. Louis new iris seedlings

“I had long suspected that since the St. Louis climate is so favorable to the growing of practically all species of iris that some day we should introduce to the horticultural world some startling productions. Mr. Josiah Whitnel of Signal Hill this year easily won the sweepstakes prize for the finest specimen in the iris section with a seedling stalk from a one year plant.

“Mr. F. W. Keene of Richmond Heights, St. Louis, has some fine pastels in the offing. I have been a very diligent hybridizer and may yet have the pleasure of presenting the first salmon pink with all good habits, also a glorified Souvenir de Loetitia Michaud that is both bluer and hardier but I prefer that these should speak for themselves.

“The following brief comments introduce some of the very best irises that grow and bloom satisfactorily here:

“Mrs. Valery West—Is the kingpin of the dark irises, very vigorous and extremely free blooming.

“Sir Michael—Hard to beat either in the garden or the show room.

“Depute Nomblot—The tallest and largest Dominion, Substance extremely heavy. It fades slightly but this hardly detracts.

“Los Angeles and Michelline Charraire—Both do very well here.

“Wambliska—Sometimes appears dirty with its gray blue undertone. At other times it is very fine.

“Sensation—The peer of the medium light blues.

“Mary Barnett—Has all good habits except that it sometimes fades.

“Trostringer—Its tender pink is pleasing to everybody.

“Odaroloc—Best all around mauve, tall and well anchored against the wind. I had to discard Mother of Pearl, Asia, L. A. Williamson, Mlle. Schwartz and others because of weak stems that could not stand our May winds.

“Dolly Madison—One of the greatest of all irises and a perfect doer here.

“Ophelia and Midgard—Commanded much comment last spring and have all good habits.

Iris species in St. Louis

“The Sibericas merit much more consideration than they have received here. In my city garden they revel in rich soil and full sun and remain undisturbed for several years. They require a year around mulch of leaf mold or peat moss. They become completely dormant in the fall and require no protection.

“Skylark is found superior to Perry’s Blue as it is much freer flowering. Bob White, snow white with yellow haft is our most satisfactory white. Red Emperor establishes itself slowly but makes a fine clump in about three years. I have a fine very vigorous dark blue seedling that blooms twice each season, with the early Sibericas and again with the Japs.

“For the half shaded locations the so called natives have proved very satisfactory. They require a bit more moisture than the Sibericas and some winter protection. Fulva, Cacique, Dorothea K. Williamson and fulvala grow well in my garden. The newly discovered species and their hybrids apparently have not yet made their way into St. Louis gardens.

“Iris tectorum is easily grown. I have a large clump of the white which is even more pleasing. It is shallow rooting and quite apt to disappear during our blazing summers. I keep the roots lightly mulched with sandy leaf mold and am convinced they enjoy shade.”

Missouri’s leading hybridizer

Mr. J. H. Grinter of Independence, Mo., to whom we owe two of our finest blues, Blue Triumph and Missouri describes his methods of hybridizing as adapted to the St. Louis climate. In addition to his blues, he has given us a fine hardy white in June

Bride and a handsome dusky gem in Wotan. His Red Radiance has taken its place as one of the finest red toned irises. It is interesting to note that Mr. Grinter finds the second set of bloom more fertile than the first:

“I will give briefly the system I am using with fair success. First carefully select the varieties you wish to cross with reference to their virtues such as color, quality, size, etc. With a pair of tweezers remove the stamen from the pollen parent. Take it in the fingers and completely cover the stigma of the seed parent.

“I do not take any precaution against the bees for when the stigma is completely covered with pollen there is little chance that a surplus would have any effect. I believe only a very small portion is absorbed by the plant. I have had some very good things from chance pods but the bees do not keep a record and the pods are of little value in determining future crosses.

Second blooms more fertile

“I have better success obtaining pods from the second set of blossoms than from the first. When the plant starts to bloom it is probably too busy hustling along blossoms to be bothered with seed pods. I also find it more difficult to get a pod from a very large flower than from one of medium size. I do not know why. No records are kept of the crosses that fail as this would be of interest only in determining the fertility of the plant and means a lot of extra bookkeeping.

“I believe the Mendelian theory is correct but it takes a period of years to carry it through. I prefer to use my own stock that I know for several generations.

“In this locality I plant the seed about the first week in October, late enough to prevent germination before spring. After sowing put on one half inch of lawn clippings. This gives winter covering and also prevents rain from beating dirt on the labels. Do not put the clippings on heavy enough to prevent freezing as a good freeze helps germination. Two thousand seedlings can be grown easily in a bed four feet square.

“When about four inches high transplant the seedlings into beds where they are to bloom in rows about one foot apart and the plants about eight inches apart. The next year under favorable conditions you should have about three fourths of them bloom. Some will go over to the third and fourth year.



Tyner & Murphy

IRIS ON THE LONE PRAIRIE; SOUTH FIELD OF MISS DOROTHY STONER, OVERLAND PARK, KANSAS

“After all the big thing is the selection of the plants for the cross. And as a final admonition, if you are attempting to produce a red iris do not let Dr. Everett hear of it.”

One vote for Abraham Lincoln

Mr. Grinter's grandfather was the only man in Independence, Mo., who voted for Abraham Lincoln for president and he clings to that same inherited rugged individualism both in gardening and in his hybridizing. For a time his objective was to get a red with as little blue in it as possible and a blue with as little red in it as might be. Having obtained Red Radiance and Blue Triumph to his credit, he is now working to develop a late blooming strain of tall bearded irises, not fall bloomers, but a series that will prolong the season some days or so.

The Missouri-Kansas sector bulks large in the iris activities of the middle west with its shows and numerous excellent gardens.



GARDEN OF MR. WALTER TIMMERMAN, KANSAS CITY, KANSAS

Miss Dorothy Stoner of Overland Park, Kansas, contributes the following items of interest concerning persons and gardens of that part of the territory.

“Mr. Walter Timmerman is an artist whose talent shows in any medium. His garden is a tiny perfect jewel; his amateur photography is distinguished; and somehow he finds a place for art as well as making a livelihood in the making of bricks. His is one of the only four gardens in the Kansas City district to which it is safe to send visitors at any time of the year and the only one of the four not designed by a landscape gardener.

Gardens in Kansas City

“In case you are in Kansas City between trains, the others are the Blackburn garden designed by Mrs. Morin; the Dr. Ernest Robinson garden, designed by Hare and Hare; and Mr. Sid Hare’s own garden or rather huge country place which is also interesting as a state wild flower preserve.

“A small garden club in South St. Joseph puts on the best

flower show I have ever seen and I have seen plenty. Mr. Byous and Mr. Schirmer, who shoulder most of the burdens, say modestly it is because theirs is a club with more men in it than women, a bitter pill for an old fashioned feminist like me to swallow but it looks as if they had the proof of the pudding.

“On November 8, the following varieties were in bloom in The Iris Garden, Overland Park, Kansas—Autumn Queen, Olive White, Eleanor Roosevelt and Duke of Bedford. The Duke was short on stem but long on color as the November sun is not so destructive as some of our 100 degree afternoons in May.

“On a bluff overlooking the river on the Kansas side of the Missouri is an 1850 house of native stone with the original floors and deep window sills. In it live Mr. and Mrs. Kenneth Browne and in their four acres that tumble down from it on every side they do their gardening. Irises have a prominent place there.

“In the Springfield, Mo., district, Mr. Bruce Maples and Mr. Charles E. Simon have been working with iris seedlings for some time and have, I hear, achieved remarkable results although no plants have been introduced to commerce.

Drought kills Louisiana species

“Mrs. John Aldrich of Kansas City who has a collection of Mississippi Delta irises from the Brooklyn Botanic gardens reports that most of them succumbed to the drought or very nearly did. My own Delta irises in one year plantings were almost wiped out but several three year old clumps came through in fine shape with good sized rhizomes.

“Almost everyone in this district reports that the drought either caused newly set plants of bearded irises to dry up or rot. Mr. McBride of St. Joseph writes that after two weeks he dug up his newly set plants, stored them in the basement and then planted them again after two bitter months and they started right in growing.

“My own newly set plants were watered once, mulched with peat moss, and the more expensive varieties were treated to a lath shade. I did not lose a plant under the shades and only one or two in the peat moss. When you consider that the ground temperature was near 150 degrees every afternoon for two months and that there was not a drop of rain for a stretch of four weeks it seems incredible how much punishment irises can take and

like it. It was my good luck that I had no water to use in the garden. We were buying hauled water for household use.

“And then the shade helped. Years ago Mr. Grullemans of Wayside Gardens spoke to one of our garden clubs on the fundamental problems of growing. ‘For your climate,’ he said, ‘always substitute part shade for full sun.’

“Mrs. J. G. Rowell of Kansas City has heart in her iris garden and each year for the last seven years she had had to leave home at midseason just as the bloom began to riot. Nothing daunted, she goes transplanting though her seedling activities have perforce been neglected.”

Irises that grow in middle west

The Middle West extends west from Pennsylvania, north of the Ohio River and its latitude, east of the Rockies and to the Canadian border. There are wide variations of soil and climate, from southern Illinois and Missouri, farther south than Richmond, Va., in latitude to the frigid winters of Minnesota and northern Michigan. But, in general gardeners find that irises originating or propagated successfully for sale anywhere in this section grow well anywhere in it.

There are an exceptional few encountered occasionally that are notional as to soil requirements or other conditions and in certain gardens act as if they were brought up on Schopenhauer. They have no will to live but won't kill themselves. Two of our most gorgeous ones, Blue Velvet and El Tovar, perform in this irritating manner. You will see them in glorious bloom in a garden perhaps only a few miles away from your own. You get them. Each season you go out and look at them hopefully and there they sit giving excellent impersonations of Poe's Raven, never fitting they still are sitting,—and never hatching anything in the way of bloom. But they are so fine you've got to try them.

Mohr-Mitchell, Essig and Salbach irises, now that they have been bred a generation or so farther away from mesopotamica seem inclined to make themselves at home. The earlier ones such as Conquistador, Balboa and their generation were not reliable. Some which seem hardy and vigorous make good clumps but are stingy about blooming. We have such reports on Santa Barbara and El Capitan and a few others.

Purissima is still a question. In a few middle western gardens

it has done nobly and given shoulder high stalks that couldn't well be much finer. In others bloom points kill and the plant is weak and inclined to pass on unless coddled and protected. Shasta seems a reliable sort. Easter Morn has been fine in some gardens and has not been so good in others.

Prof. Essig's fine blues

Prof. Essig's fine new line of blues are being given a tryout in many gardens but have not been established enough for certain report. Pacific seems the least vigorous of the lot according to some reports. They have all survived last winter safely, a trying one as they will ever encounter. But blooming points were killed wholesale even on old time ironclads so no conclusions can be drawn. Shining Waters, recommended as the finest of the lot, is yet to bloom in this section, so far as reports are at hand.

We are waiting with much anticipation of Prof. Mitchell's new yellows which should bloom this spring.

We have had nothing of value for middle western gardens from Southern California so far. San Gabriel and other types so fine there are mere mediocrities and hardly worth middle western garden room.

There is much interest manifested in Mr. White's new yellows, particularly Lady Paramount which is expected to bloom for the first time this spring as it is new in several middle western gardens along with Sweet Alibi, Son Robert and others. We are warned by middle westerners who saw Lady Paramount in Mr. White's garden in California last year that while it is a magnificent iris, it is a lighter yellow than overexuberant description by its home admirers not over conversant with the iris field outside of California might lead us to expect. It is reported as having inherited some of the pallor and freckles of W. R. Dykes, one of its parents, but nevertheless is pronounced one of the very finest yet produced. It is hoped that it will flourish in middle western gardens.

Bearded iris have no monopoly

The tall bearded iris class has no monopoly of midwestern interest. There is a widespread and constantly growing interest in the beardless and the various species as the beauty and garden value of their varied types become apparent. They can be summarized rather briefly.



Lady Paramount

Sibiricas—Most widely grown and distributed of all the beardless iris. Much used with hemerocallis in the garden and in cut flower arrangements at the shows. Also handsomely associated with pyrethrum and columbines in the gardens and also with the meadow rues. Stand more drought and do fairly well in lighter soils than do most beardless. Hans Sass' Blue Charm and Jacob's blackish violet Miss Duluth are fine newcomers. Most popular varieties are Perry's Blue, Papillon, Kingfisher Blue, Distinction, Snow Queen, Emperor and Red Emperor with an increasing number of Mrs. Cleveland's beautiful introductions constantly appearing in gardens.

Spurias—Ochroleuca most widely distributed and grown. Shel-ford Giant greatly admired. Monspur and its hybrids, Lord Wolsey, Mrs. A. W. Tait much used. Ochroleuca is a popular subject with the delphiniums and with backgrounds of the various pink climbing roses. Also beside pools with sibericas and in clumps as border accents. Hans Sass' new Sunny Day, by far the finest rich yellow spuria yet sighted, tops this type.

Pseudacorus and its pale variety—Much used by pools and in borders.

Versicolor—Occasionally in gardens but is mostly admired in its native surroundings of river, pond, and swamp.

Tectorum and its white variety—Favorites in rock gardens, easily grown.

Cristata and its white form—Also much grown in rock gardens.

Lacustris—Has received rather wide distribution from plants collected on the shores of Lake Michigan. With the above two it seems to like shade in lieu of its color climate when at home. It is a fast grower.

Foliosa, Fulva, Dorothea K. Williamson, Fulvala Cacique—Quite widely distributed and grown and much liked in the garden, foliosa being least esteemed because of hiding its blooms in the leaves.

New Louisiana Delta species—These received a severe setback during last summer's heat and drought as collections suffered severe losses. The general comment where they have bloomed is that while there is beautiful color and fine character to the bloom, there is too great a wealth of foliage and too much poverty of bloom stalks. They are not well enough established for sound judgment.

Beauty to be inhaled

Dichotoma—The Vesper iris. Grows anywhere apparently and is getting wide distribution. Effectively planted with *Nicotiana affinis*, pale yellow four o'clocks with a few of that little weed, *Mathiola bicornis* that you have to shut your eyes to admire for its delightful fragrance and you have a twilight beauty to inhale even when it is so dark you can't see it.

Oncochelys, regelias, and their hybrids—Many gardeners are learning the trick of growing the more difficult species by digging them up along in July, keeping them dry until late October or early November and then planting them getting fine bloom and plenty of it. *Susiana* most grown. There is a lot of experimenting with crosses between these types and both the dwarf and tall bearded by amateur hybridists.

Bulbous species—*Reticulata* is coming back after some years of absence. The black death that used to soot up and destroy the bulbs seems to have been conquered. It is beautiful with the snowdrops and early yellow crocuses in sheltered corner where they give the first three cheers for spring often with snow all around them.

There is much planting of the Dutch Iris now that we find that we can grow them and that they are hardy. They are displacing the Spanish which are also returning to their own as the bulbs get back somewhere near their old time popular price of a dollar a hundred when we always grew them to cut.

The English iris for heavy moist soil still command admirers. Gardeners are learning not to plant the Dutch and Spanish too early to get too much growth above ground before winter sets in.

Tricuspis—This came into the middle west through seed distributed gratis by Thompson & Morgan, an English firm. It is a handsome dwarf iris with blooms very freely produced resembling a *siberica*, the standards being reduced to mere points. It likes cool soil and is handsomely associated with the violas in rock gardens.

Arenaria, *verna* and *gracilipes*—These are dear to rock gardeners all over the middle west.

Poor country for the Japs

Japanese—The success of these in the greater portion of the middle west comes in the legal category of events known as acts

of Providence. If we can have plenty of rain during their growing season they will be a success and can stand a lot of drought in midsummer. If the rain doesn't come and it certainly hasn't for the last three seasons with increasing scarcity, they can be counted out.

In general, the middle western soil is alkaline and not altogether to their liking and to make a bad condition worse for them, most public water supplies are hard, that is strongly lime impregnated so that when you give the Japs needed moisture in dry springs you are also poisoning them. The foliage shows a sickly yellow green and they are on their way out. Many gardeners keep a supply by raising seedlings from year to year as it seems the seedlings are stronger than named varieties but lack the quality.

There have been many experiments in raising the California species from seed but no substantial success has been reported.

Missouriensis—This is often seen growing with the spurias and sibericas and is an excellent garden subject.

Wattii—Midwestern visitors to California gardens, particularly Dr. Berry's, are trying their hand with this iris as a house plant this year. No reports so far.

Dwarf bearded by the bushel

Now that we can get dwarf bearded irises by the peck or bushel as needed from the Sass Brothers who have become the Middle West's main dependence for this type, and of a quality to make us forget a lot of the old named ones we use them that way. It is likely that the dwarfs are more liberally used in gardens in the Sass territory than anywhere else in the country.

Their chief value and use is in the making of one of the finest of spring garden displays, the garden of daffodils and dwarf irises. They are beginning to give us blended colorings in the dwarfs we did not have before. A lot of them have come from crosses between dwarfs and tall bearded in their work of breeding intermediates and there is varying length of stem from four up to ten inches and over a season extending from the earliest atrovio-lacea until the intermediates come into bloom.

Their chief advantage is that they all have good falls instead of the tacked under and frizzled ones we find in many of the older varieties in this group. Their white and yellow dwarfs are particularly good. During the last two seasons the bulk of their

introductions have consisted of dwarf and intermediate types.

These Sass dwarfs have a trick of throwing blooms occasionally all during the tall bearded season which has made their work in breeding intermediates easy as dwarf pollen was readily available.

Trying out the autumn bloomers

Development of autumn blooming irises is one phase of iris growing interesting midwestern growers and substantial progress has been made and there is now a rather formidable looking list of these fall bloomers. The Sass Brothers have pioneered in this work and have introduced by far the largest number of them. They are principally of the intermediate type although recently they have had a Cardinal seedling or two to add to the list.

In their longer Nebraska autumns they always have a fine show, dwarfs, intermediates and fall bloomers all flowering at once in October and early November. In the more northerly states their blooming is another event to go in the acts of Providence category. If there is sufficient rain during August and early September and it is a late fall, there will be a good show.

Mrs. Pattison who has also been experimenting with them in northern Illinois reports fair success. She started during the terrific drought to water the fall bloomers thoroughly in August and kept it up and was well rewarded. Autumn Queen is, so far, the one that seems to be absolutely certain. It is really an ever-bloomer and may bloom any month of the season but it regularly appears in late September. Mrs. Pattison reports Mr. Auten's Equinox the next most reliable and a handsome addition.

Some gardens have tried fall bloomers with never a sign of fall bloom but in these gardens dwarfs that normally show fall bloom in late falls and from which the fall blooming tendencies come never bloom.

The latest and most important additions to this class are from Hans Sass who has given us the first clear yellows. These are Autumn Gleam and Southland. Jacob's Golden Harvest previously had been the yellow representative but it is a blend.

Old timers remain with us

Despite the great flood of newcomers, a considerable number of the older irises of the Farr period persist in middle western gardens and add to their beauty and effectiveness. They are kept

even in gardens that keep pace with the modern introduction usually for some distinct garden value.

Flavescens and florentina alba and that ancient Honorabilis are seen in large quantities in landscape work along railroad stations, public buildings and in parks with good effect and are considerably better than nothing at all. The question arises, would any other pale yellow of its season give any better effect than flavescens, florentina or even the deep yellow mass of honorabilis?

Checking over the old Farr catalogues, we find the following old favorites still with us in a substantial number of gardens.

Alcazar—Always good, pretty well displacing Lent A. Williamson and Propsero because it will stand up and they won't. Also Lent A. discolors badly. Give Alcazar a carpet of Siberian wallflower, Cheiranthus allioni and it will be seen why some gardeners cherish it. Plant the seed of the wallflower but don't try to transplant it.

Archeveque—Rich and velvety in the intermediate season which has to compete with Challenger and other dark ones but holds its own. An unusual and attractive planting noted in a middle western garden was Archeveque with a thick carpeting of shooting stars, Dodecatheon, about red buds grown in bush form with small groups of Bronze Queen tulips.

Blue Jay and Chester Jay Hunt—Kept for their fine blue note not bettered as to tone by any moderns. They are seen handsomely displayed rising from a tumbled mass of creeping soapwort, saponaria ocymoides.

Caterina still a favorite

Caterina—This one flourishes and makes noble clumps in warm well drained soils in the middle west and is well worth retaining for its fine blue note and compares favorably when well grown with many novelties.

Crusader—Most dependable early tall large flowered blue. It has not been discarded by anybody so far as known.

Caprice and Ed. Michel—These have color tones that cause many gardeners to hang on to them, the latter being much liked for its grape juice fragrance.

Dalmaticas and the various Princesses Beatrice—These survive on sheer merit.

Isoline—Persists in many gardens but Rhea is displacing it steadily.

Iris King, Maori King, Loreley, Princess Victoria Louise—These old time variegatas have a purity of color and clean contrast that the newer so called variegatas seldom equal.

Mme Chereau and Fairy—Most persistent of the old timers. The fragrance of Fairy will keep it a long time.

Rhein Nixe—This still challenges the breeders of the world to do anything substantially better in the way of a true amoena.

Celeste—Much liked for its tone close to a true pale blue and much used in large masses.

White Queen, White Knight, La Neige—Still excellent material of their stature of different seasons, form and texture and used freely.

Queen of May, Her Majesty—Persist in a few gardens but look pretty dingy beside later pinks.

Aurea, Mrs. Neubronner, Sherwin Wright—Gradually disappearing but still found in gardens which have not kept pace with modern irises.

Element of personal irises

Nearly all middle western gardeners who go in at all strongly for irises, make their own crosses and raise seedlings. It has become a favorite outdoor sport and its devotees take great joy in their vicarious parentage. It has resulted in finding in gardens what might, perhaps, be well termed personal irises, selected seedlings which have been retained for some valuable garden element, color, form, or small graceful forms for cutting.

They give an individuality to the gardens and establish an intimate friendly relationship among gardeners who exchange their seedlings. Fortunately middle western gardeners are a conservative lot and do not rush to register and introduce their seedlings.

There are many irises of real value of this character and yellows probably preponderate.

Although Dr. Everett and other worthies of the American Iris Society have done their best to become the Margaret Sangers of the iris world and check up production they have made little headway. Breeders, both amateur and professional, like the old woman who lived in a shoe and had so many children because she didn't know what to do, keep merrily on producing. It seems

safest to trust to the survival of the fittest or that an iris Malthusian law will solve the problem.

Fortunately, selection becomes keener and more discriminating among middle western iris addicts, and we no longer see seedlings proudly displayed as we did a few years ago that reminded us of some kids we occasionally encounter and wonder how even a mother could love them.

Now for some heavy thought

With this selectivist idea in view, just supposing you had the space and all the money you needed, what would be your selection of irises for an ideal midwestern garden? How would you combine with each other? How would you combine them with other perennials for your ideal garden?

No two gardeners probably would agree on the same selection. They wouldn't be expected to. Difference of opinion just as certainly makes irises as it does horse racing together with the well known theory of improving the breed which is the legal fiction behind legislation fostering horse racing.

If people couldn't cuss and discuss, wrangle and argue about irises, they would soon sink into Grover Cleveland's limbo, innocuous desuetude.

Ideas and viewpoints change in gardening and, with the wider dissemination of horticultural knowledge, the greater growth of personal experience and the development of observation and study among gardeners, they are now thinking for themselves. There is no longer the slavish liking of a plant because some one supposed to speak authoritatively said we ought to like it and have it.

We have passed through the mauve decade, the Victorian and the lavender and old lace color periods. A Century of Progress exposition in Chicago, to an inestimable extent, put color repression and cowardice to flight because it showed what magnificent effects could be produced by a fearless and bold colorist.

Magenta no longer maligned

Even the old "malign magenta" idea was uprooted for great expanses of this color were the thrilling new note in the 1934 color scheme. The heavy magenta standards of the Avenue of Flags carried geranium red banners on dull days and turquoise banners on bright days that had everybody arguing as to whether

they were blue or green. What a flaunting of color heresy according to the older schools.

There is plenty of magenta and closely related colors in irises and nobody need be in the least afraid of them. They are just red purples and perfectly good colors.

So the New Deal in irises in the Middle West is a development of "rugged individualism" in iris arrangement rather than any regimentation. We are even beginning to like variegatas and to know what to do with them and find a valuable place for them in the garden. We should like to see more and better ones. We know from the great orchestras at the world's fair that there are jazz symphonies and everybody liked them.

It may be execrably bad taste to prefer Berlin to Beethoven but most people do. Too much culture makes it difficult to have a good time and that is what we want to have with our irises so some of us, at least, go in for bold, even noisy effects.

Those who watched and studied the work of Joseph Urban in 1933 and Shepherd Vogelgesang in 1934 and their world's fair color laboratories found fascinating interest in the study of and search for fluorescent colors. It was a new idea. Certain flat color surfaces, when the right light is thrown upon them fluoresce, that is, they at once seem to glow from within and emanate color.

The north facade of the Hall of Science was a fine example, by day magenta and rather dull but by night it became a glowing rich red, the color and glow seeming to come from within.

Fluorescent qualities in irises

The iris, to a larger extent than any other flower, perhaps, has in many of its varieties this fluorescent quality in the low rays of the sun either in early morning or approaching sunset. It is particularly notable in the perfectly named Afterglow. The margins of the standards and falls of Quaker Lady take on the same quality which makes this such a favorite group for twilight marvelling in many gardens. Spring Maid lights up wonderfully in late afternoon. Late afternoon and early evening effects of unrealized possibilities seem ahead in the use of irises possessing this fluorescent quality.

There is a wide range of viewpoint, naturally enough, when it comes to the color arrangement of irises. Color is so much a matter of personal like and dislike, so much a matter of good taste,

if any, that it would be ridiculous to try to lay down any hard and fast rules of arrangement. No two good artists paint exactly alike nor do they all use the same colors. We find beautiful color arrangements in middle western gardens and beautiful gardens where there is no attempt to arrange the irises in color schemes, the owners taking the viewpoint that the colors are so soft that it would be difficult to make any planting that would be really unpleasantly discordant.

Mrs. Silas B. Waters is one of the foremost exponents in the middle west of making a picture garden of the irises, paying close attention to color harmonies and she has achieved beautiful and much envied effects in her precipitous garden in Cincinnati. Even though Mrs. Waters has become so perfectly Alpine with her fine rock gardens that she has avalanches, and, according to reports they grow calves on their shins out in the Missouri River bluff country from scrambling up and down hill, when we see gardens like Mrs. Waters' with its different levels, and mount the series of plateaus in the great hillside on which Hans Sass has his garden, how we yearn for hill and valley on which to display our irises. You see them from above and below and on the level; and you see new beauties from each viewpoint. We have heard much of bold color effects. Now for the subtle.

Mrs. Waters believes that blue is the dominant note in iris plantings. Here are her highly interesting ideas of color in the iris garden:

Pictures painted with irises

“The art of gardening is rapidly advancing and the average amateur gardener is becoming increasingly interested in the more subtle effects to be obtained through proper color arrangement in the garden. Those qualified to speak on artistic flower arrangement continually talk of color harmony. We ought, through more finished design and better plant grouping, achieve color harmony in a finer way in our gardens.

“How fine it would be if we could have more suggestions from all outstanding iris growers of charming and interesting iris color combinations, for, certainly after years of specializing in iris culture one should be able properly to evaluate the rare loveliness of the iris in the garden picture. It is above all flowers a child of

the sun,—outdoors is its rightful place to be seen, not indoors on the show bench.

“Whether an iris rates 92, 90, or 88 is not of prime importance. I most heartily agree with Mr. C. G. White of California, ‘Why all this worship of technicality in the cult of beauty?’

“Perhaps there would come to all iris lovers a new inspiration if we said, ‘Lady Paramount is an arresting picture planted with Shining Waters; that Jasmania in juxtaposition to Burning Bronze brings a thrill to the color sensitive soul; that Mary Geddes with Tuscany Gold challenges any artist to depict their subtle and elusive charm.

“There are many who will never forgive that member of the American Iris Society who said that the Dykes medal could not be given to Blue Velvet as it was just another blue iris, for the great majority maintain that Blue Velvet is an incomparable iris. When I observe its value in an iris planting, I always think of the great artist-architect of France, Viollet-le-Duc and his illuminating exposition of the colors in the great cathedral windows. He writes:

Blue the radiant color

“‘The first condition in glass is to know how to manage blue. That the radiating power of blue is the starting point—that it is that luminous color which gives value to all other colors. If you compose a window in which there is no blue you will get a dirty or dull effect, but if you put a few touches of blue among the other colors you will have a striking effect. That blues should be placed with a delicate observation of the effects they should produce on other colors and other colors on them.’

“Villet-le-Duc might have been writing of an iris garden instead of the beauty of cathedral windows.

“Blue Velvet brings to any planting a dominant note. It emphasizes the loveliness of Sir Michael; it brings out the old ivory tones in Helios; it develops, apparently, new tones in Dolly Madison.

“Sensation is another blue which brings out the coloring of many of our pastel tones. Realm also is a splendid blue foil for some of our delicate blends. It makes a lovely frame for that enchanting beauty, Zaharoon, when two large clumps are grown side by side.

“Trail’s End, Mr. Williamson’s benediction upon the iris world has come to my garden this year. How I shall enjoy finding the right frame for its exquisite blend of tones, probably that new glorious yellow, ‘Robert,’ will be its near neighbor. They will each complement the other, and, too, ‘Robert’ was named for a fine young man whose passing has taken from the iris group a staunch adherent to the cause of finer and better iris and who loved Mr. Williamson. This was Robert Emigholz.

“Claire de Lune, another new blue variety, is truly beautiful and its near neighbor ought to be Cadmia, a superb new yellow.

“Thus one might name on and on charming associations and striking contrasts. Good color arrangement is full of delightful potentialities and its study cannot fail to be of abiding interest and unfailing inspiration.”

Hero of the haphazards

We shall give Dr. Everett the honor of being the hero of the haphazard iris planters and he has a great majority following him among gardeners who find any iris combination pleasing and who can enjoy a color scheme so unscientifically and inartistically reached as planting the irises alphabetically. Dr. Everett says in behalf of this great army:

“My garden is divided into many gardens by close clipped cedar hedges whose tapestry of green provides a splendid background for the varied blooms of the irises. From the first the keynote of color which binds the iris palette into a harmonious whole is provided by a particularly hardy and beautiful pallida, which in favorable years is as large as Princess Beatrice who has sulked from year to year in my borders.

“No attempt at color schemes is attempted in the beds. I find all worth while irises blend safely one with the other and the general effect is the soft tone of an antique Persian rug, its high lights picked out by yellows and whites and relieved now and then from monotony by gleaming crimson. Even the softer blends find a suitable foil somewhere near in some accidental companionship of the haphazard plantings.”

To bet intelligently on horse races, it is necessary to know and study past performances. This is also true of the iris race. Before proceeding with selections for a suppositious ideal garden or perhaps a dream garden, we shall present duly qualified

dopesters to give us the form chart on the more modern irises and novelties as they grow in the Middle West. A good horse dopester knows his horses without the numbers up and a good iris dopester knows his irises without their labels.

Applying the Minnesota test

To be sure that an iris is absolutely hardy so far as cold is concerned, go to Minnesota. If it is hardy in Minnesota it ought to be hardy anywhere in the Middle West. In St. Paul we find an earnest, studious youngster who has an ambition to grow every iris on earth at least once and has probably come as close to it as anybody in the United States. So earnestly has Robert Schreiner studied irises since early childhood that he has worn off his forelock and, if not an iris highbrow, he is at least a tall forehead. Anyway, he knows his onions.

He has devised a color classification for irises which is the most practical one that we have and probably as close as can be approached to such a creation and it is followed here. He grows irises under conditions that are a test of patience and persistence of the human as well as the iris, late springs with frosts likely to nip bloom points, short falls, and winters that never coquette with summer out of turn as they do over most stretches of the middle west. One point in its favor is that once frozen, irises are likely to remain so until spring thaws, far different from the conditions in the southern limits of the territory such as the Egyptian districts of Illinois.

Mr. Schreiner is a good dopester because he has the comparative viewpoint, having done a lot of gallivanting around gardens, last spring with other mid western inspectors going to California for the iris season and then making the mid western rounds, winding up at Freeport before his own home season which is the latest in the middle west.

Here is the Schreiner form letter as a guide to selection:

Schreiner writes a form letter

“We shall begin with the light blues. The fine manner and dignity of tall, upright El Capitan, a soft light lavender blue with large flowers, mark it as one of the really fine blues. Darker in tone is the flaring form of Sensation, described as cornflower blue. These two are irises of the first rank that have stood the



Sierra Blue

test of time and their popularity is a true attestation of their worth in the Middle Western garden.

“Newer is Pacific, about the same height as Sensation. It is darker in tone, has a very fine form and pure, clear blue without the lavender influence and of excellent substance. Prof. Essig, not being content with the production of this fine blue, has aspired farther and we are now trying in this section his newer blues which looked very fine in his garden when I visited it last spring. The finest newcomer is Shining Waters, very clear, light, waxlike soft blue.

“M. Millet’s addition to this blue class is Paulette. The producer of the incomparable Souvenir de Loetitia Michaud, which, unfortunately, is of difficult culture here, has biven us in Paulette, one of the largest blues of a beautiful tone with enamel like finish.

“I venture to say it will stand high in the galaxy of iris stars once it is known. The plant is outstanding wherever I have seen it.

“All the preceding were selfs and selfs carry excellently in drifts for garden effect and drifts seem to be a most effective style of planting. Mention must be made of Summer Cloud, which, at first adversely criticized, is now fast establishing itself in popular favor and rightly so. Although a bicolor technically, there is slight contrast, standards delicate, airy blue with a deeper fall and lemon beard.

“What’s in a name? Notice as we go along how well some names fit the iris in giving an immediate picture and how others leave the iris totally unvisualized.

Singing the St. Louis Blues

“We have not yet a true blue iris, that is a blue not mixed however slightly with red, but progress towards this goal is satisfactory. Think what a day it will be when a real blue iris is obtained that truly reflects the sky above it.

“I was agreeably surprised to find several seedlings of a breeder in St. Louis which show marked progress towards this ideal. I hope to have these bloom in my garden this year in direct comparison with all the famous new contemporary blue candidates.

“Surely we must mention Mary Barnett when we speak of this class of blues, a charming blue with a bright gold beard.

“A newcomer of deeper tone of medium blue is Major Stern’s Aline. Major Stern is a former president of the Iris Society of England. Recommended as the tone of blue found in the Regelio iris, Hoogiana, I found it even more beautiful. It is extremely blue and a notable contribution. It is not large but is a gem of real glitter.

Baldwin wins its way

“Baldwin, a production of Hans Sass and much used in Sass iris breeding, is a manganese violet with a tone of heliotrope, fine broad haft, rounded form, a very distinct and satisfactory iris. It has risen each time the American Iris Society has conducted ratings and is better liked the better it becomes known.

“Cydnus, a finely formed flower of the B. Y. Morrison type, is a clearer blue and perhaps a tone deeper. The flower is larger, of Dominion derivation with its fine substance and good form and undoubtedly one of the finest bicolors.

“Blue Banner is a charming bit of color, a medium tone of blue with bicoloring showing very pure blue standards and rich falls, bluer although not with quite the aristocratic characteristics of Cydnys.

“Persia, a real tapestry of color, is excellent with smoky blue and gray stands and falls of deeper prune to purple of remarkable richness.

“This year I more appreciated the classically and finely formed and balanced Violet Crown of Dr. Kirkland. It is a medium violet and a pure self. The color does not sound so thrilling in its description but once seen, this iris is bound to evoke your admiration.

Missouri comes to the front

“Having observed Mr. Grinter’s Missouri for two years, I can give it the highest commendation. It is of fine form and really excellent substance, a slight bicolor with blue stands and a darker medium pure blue modified flaring falls charmingly set off by a bright yellow beard and mellow brown haft.

“Indigo Bunting from Dr. Ayres’ garden is very bright and attractive, silvery medium blue stands and falls of practically the same tone with a modified flare. It is further harmonized by a light blue tipped beard and a brown haft. These two are

very welcome additions to the medium blue, a class that needs improvement.

“The following two are new productions I have observed only one year and would want to watch them another season before definite appraisal. Sierra Blue, a fine iris from Prof. Essig, looks highly promising, deeper than Shining Waters, large, well branched, of fine poise, a medium uniform blue with just a suggestion of lavender. How well Prof. Essig’s two new blues will prove here remains to be seen. Jacob Sass’ Blue Monarch is a very good iris of primse, pure of tone; this iris, I believe, will rate very high. As viewed in its home it is surely a fine production.

Put snap into darkness

“The deep dark pansy violets or deep blue purples with their selfs and bicolors are indeed a fine class. In our recent developments we have these rich colors with snap enough put into them to prove their presence in startling and telling color masses. Mrs. J. L. Gibson, an English origination, is undoubtedly one of the leaders, if not the leader, in this class. It is practically a self, a rich indigo purple blue, large flowers of fine form and excellent substance with rich velvety flaring falls.

“The stems could be improved by better branching. It has better height than any other of this class. Closely contesting is Black Wings, medium sized flowers of fine texture, a velvety blue black with frost like lustre and richness which mark it with distinction. Of not quite average height it should be planted to the front.

“Meldoric is another fine dark one where it does well with huge blooms in rich velvety blue black purple. Its tall stems have only moderate branching. Unfortunately, this iris is apt to spot in cool wet weather. When it has a good year it is of the finest.

“It is a little strange that some of these rich dark colored irises are either slow growers or otherwise temperamental.

“St. Louis, a new one of the rich deep colored section, a very free bloomer, is an exception. Its ease of culture and wealth of bloom with make it highly appreciated when better known especially where trouble is encountered with the national and obstinate dark varieties.

“This iris is of fine form, with excellent adressed standards

and rich velvety purple falls, with an inconspicuous beard and a sold haft. It has a fine stem, tall, well placed blooms and the substance is good.

Among the dusky bicolors

“In the bicolor class, Col. J. C. Nicholls’ Valor is very fine, distinctly shaped, firm substance and nicely branched stems which carry the flowers well. It has blue violet standards and blackish violet falls margined lighter violet.

“Winnieshiek has worked itself high in the esteem of middle western gardeners on its merit alone,—a large bloom carried on fine stems of due proportion and good branching. The color is a most pleasing rich blue violet and black purple contrast. A touch of frilling makes it all the more attractive.

“I doubt if a finer bicolor of the Dominion type of coloring can be found than Blue Velvet,—rich pure stands and deeper velvety falls. The stems are not seen at their best until the plant is well established. It is a mighty fine iris but one that does not perform well in every locality.

“Royal Beauty is the finest of this group of Dominion types for the average garden. It has fine sized blooms, stems without the Dominion knuckling or crowding and while the color is not quite as rich as Blue Velvet especially in the falls its perfection in all other lines distinguishes it.

“The Sass Brothers have given us two fine dark selfs. Hans’ Thuratus is very, a black purple self of good branching. Jacob’s new one, The Black Douglas, is also in this coloring, very rich and a free blooming type but further observation is needed as it has been seen only once.

“A gem, not large or tall but of unique color appeal is Katherine McFarland, an intense dark purple self.

Motif displacing old Pioneer

“I can better appreciate Miss Sturtevant’s Motif as my acquaintance with it grows. A rich red purple with velvety falls, practically a self, it may be visualized as a much richer and improved Pioneer. It has a nice stem, good branching and fine carriage of blooms. We have some promising newcomers in Brunhilda, self deep violet, and Dark Knight, richer red purple or somber mahogany.

Some progress in the pinks

“Progress is quite evident in the lightest tones of our pink colorings. Perhaps the finest of this coloring is Imperial Blush, a nice broad flower of blush or orchid in tone. It is of good substance and branching, the whole dainty flower set off by a lemon beard.

“Pink Satin’s color is as pink as any. The stem is tall and well branched and the flowers of medium size. It is a very fine pink iris. I feel that many of the so called critics have been very unfair in their comments on this variety. In spite of all their adverse comments it is still proving extremely popular, a true test of its high merit.

“Airy Dream, another fine production, flowers slightly ruffled of soft orchid pink, has a fine stem and all good habits. Ambrosia is unique in its coloring, a soft delicate white and fairy like pink combination with a rich gold beard and effective in the garden.

“Dogrose, the tallest pink with oval formed flowers, deeper in tint than the preceding, excels the old favorite Susan Bliss of which it is a descendant. A gold beard further lights up the flower.

“Ethelwynn Dubuar is insufficiently tested here but is of very soft color, a broad flower of excellent substance, a fresh pink with a lemon beard. It looks promising and seems a variety of decided merit in its class.

Pinks shot with gold

“Noweta, although only of medium height, is an exceedingly fresh pink, a warm tone brightened by salmony suffusions. A warm mellow note is added along the haft and beard which makes this really a gem and most appealing.

“Opaline, a charming blend of pink and strongly flushed yellow gives us, perhaps, the prettiest pink blend we have. Its stem is the desired height and the charming color tones give it high ranking.

“Mention should be made of Rheingaupele, a soft pink with a silvery overlay and edged with the same color. It is unique and highly popular with middle western gardeners and deservedly so.

“Ballet Girl, a new production to be offered the coming season, is of the softest blush pink and can be visualized somewhat as a

much larger and finer Ambrosia. The coloring is about the purest and daintiest of its kind I have seen with modified flaring falls. The stem is of medium height.

“Now we come to the pinks of medium register. Evelyn Benson bloomed very well here last season, in fact it surpasses my estimation of it the previous season. It is a fine medium tone of lavender pink of enamel texture, a self with a light beard. The coloring is most pleasing with good branching and medium sized flowers.

“Coral is another newcomer that pleased us greatly, a production of Mr. B. Y. Morrison that I feel sure will appeal greatly to all middle western iris fanciers. It is a little earlier than the average tall bearded iris and surprised us with its wealth of bloom. The stands are a soft rosy lavender and the falls a deeper velvety rose lavender.

“Mary Senni, another distinctive newcomer, is of unique color. A mauve pink, the blooms are of good substance, fine poise and form and the plant is entirely distinct from others of this color type. Rose Petal marks another distinct advance in this class. A clear deep pink self, more nearly pink than the old Aphrodite, it is specially resistant to bad weather.

“One of Hans Sass’ latest productions is a distinguished addition to this color type, Avondale. A rosy strawberry color with a gold heart and beard, it has an excellent stem and the required substance and height to make it first class.

Reds, red bronzes and browns

“Next comes to our attention the grouping of the bronzes, the red bronzes or browns along with our reds. These tones are exceptionally popular in the middle west. It has been noted that many of the men gardeners show a decided preference for these richly colored types of which Grace Sturtevant and Depute Nomblot remain the peer of them all despite some deficiencies as to stem.

“The thought arises that it would be unfortunate to try to make all our fine irises conform to one standard. If an iris is without the show ideal of candelabra type it should not be condemned because it may readily fill a need more effectively in the iris world. We cannot have all Los Angeles stems. Noweta is a fine example of this.

“We may pass over the stellar introductions of several years’ observation which need no comment as to their excellence to consider the newcomers. We know what these older ones will do and they all seem to thrive as well in the middle west as anywhere.

“Neon is a fine iris in this color division, the standards of bright gold burnished tan, and the falls a rich solid maroon red with a gold beard. It has excellently built stems, fine form and is a generally around pleasing iris.

“Burning Bronze, that very fine production of Dr. Ayres, is really one of the finest new irises, a solid glowing bronze red. It is well named. It is slightly bicolored but the coloring is rich and solid.

“Two of Jacob Sass’ newer productions deserve mention. They are redder than those just mentioned and not so brown. In War Eagle, we have one of the largest irises and one that is really interestingly colored, a fine hue of red with a copper influence. The color is surprising and the size spectacular.

“Spokan is not a giant but what it lacks in size, and it is a good sized iris, it makes up for in color. It is a brilliant copper bronze, a most unusual tone and calls to mind the distinctive coloring of King Tut one of its parents. To me it seems to place King Tut’s glowing coloring in a better flower of much better size.

Looking over the reddest of reds

“Now let us consider the irises that approach most closely to red, those commonly known as ‘the reds.’ Cheerio is a most outstanding iris, bright, and a glowing reddish bicolor with velvety falls and a glowing beard. Ethel Peckham, perhaps the reddest we have to date, a rich glowing red, with standards a bit of wine red and the falls toning a little to copper with a gold beard. It isn’t extra tall and in very hot weather the standards may be a little weak.

“Very close to it and really an extra fine iris is Joycette, a rich wine red self. The stem, size of bloom and general habit of the plant leave little room for improvement. The good points of Dauntless, Numa Rumestan, Hernani, Red Robe and Magenta are well known. Magenta and its unique amethyst tone planted with Yellow Moon is a combination hard to beat.

“Last season I had the privilege of visiting Dr. Kleinsorge’s garden and was most delighted to see his new iris, Itasca. Deeper

in tone than Magenta, I hope to observe it more thoroughly here and see how it will do away from home and in middle western gardens.

“One cannot survey this group without commenting on M. Cayeux’s newest and probably one of his finest developments in this color class. This is Directeur Pinelle which has very large blooms, magnificent carriage with a coloring of dark bronzy wine purple. The falls are rich and velvety and present an unusual blackish lustre. In some respects, this iris faintly suggests the old Mme. Henri Cayeux but is so far ahead of it that the old timer is no more than a faint echo of it.

“Most notable progress has been made in the yellow class during the last few years. We know how well Coronation, Pluie d’Or and Chromylla grow with us. Phebus is a really fine iris of distinct oval form and a unique tone of pure lemon yellow. The darker Alta California represents a very marked step forward and a real addition to this class in Eclador, beautifully frilled and fluted, rich broad flowers of soft canary yellow. I believe this iris will get vast appreciation in the middle west as it becomes acquainted with it.

“Happy days are here again”

“One of the newest arrivals is from Prof. Mitchell’s California garden, California Gold. It is a rich yellow of the size we have been hoping for a long time with a color we have also been looking for a long time, a deep yellow, almost brassy. It, with Eclador is decidedly one of the best advancements.

“Two more new yellows from California are to be tested here. They are C. G. White’s Lady Paramount. This is of excellent form, of good habits in California, between primrose and empire yellow in color tone. It is soft and refined and, I believe, will prove a decidedly worth while iris in the middle west.

“The other luminary is Happy Days. One can well understand the popular toast when he looks at this iris. In color it is a bright medium golden yellow. The falls are especially iridescent which seems to enhance its golden quality. It is probable that if this iris proves hardy and a good grower in the middle west it will rank very high here. It has flowers of extra large size for a yellow.

“Lady Paramount is softer in tone with a paling towards

sulphur while Happy Days is a bit darker and more towards gold. I believe the two are very worthy productions. Their hybridizers may well be proud of them.

Blends attract middle west

“Yellows naturally lead us into the iris of blended colorings, the biscuits, tans, and shot shades including the rosy and blue blends. This is a type that is most highly esteemed by middle western iris growers. It embraces the newest colorings in iris developments, known as the ochraceous types, which are fast approaching apricot which we have in one case and to tones of salmon.

“Among the blue blends we should mention Prof. Mitchell's Sunol. This is a fine sized flower with distinct rounded form. The coloring is a blend of sulphur and buff in the standards with a pleasing flush of light blue on the falls. This is a real advance in color as its combination reminds one of that of ochracea coerulea also known as Sunset.

“Dr. Ayres has given us a whole series of fine blends. Ningall, a very unusual and appealing sort, stands pearly blue and buff softly mingled, the falls with this same coloring and a ceerulean blue flush give a delightful picture. Another from this iris master is K. V. Ayres, a fine large flower of clean cut form, fine stalk and a blending of soft tan and buff and light blue with a pink underglow, most subtle coloring. It does not scream its appeal but must be intimately known to be appreciated.

“One of Dr. Ayres' most recent offerings is Byzantium, tan brown with attractive blue pencillings along the midrib of the fall alone giving relief to the otherwise self coloring. The iris is outstanding in that it does not fade even in the hottest sun. Another new and stunning iris from Dr. Ayres is Tint o' Tan. It is a golden tan self and it is bright and not a subdued color like many of these brownish blends. A glowing iridescence of gold gives the iris its glowing color effect, a most original effect.

Blends with rosy tones

“These are comparatively new and greatly admired types among the middle western iris cohorts. Talisman is a combination of exquisite color, yellow and rose pink with a touch of blue in the falls, wonderful for indoor use. Golden Flare, somewhat

similar, is taller, a medley of gold and old rose with a vivid orange red beard. This iris aroused great enthusiasm among visitors last season.

Apricot Glow fine novelty

“A most delightful surprise in this group to be introduced this year is Apricot Glow, a beautiful medley of soft apricot and salmon with just a faint rose flush on the fall reminding of the cheek of a ripe peach or apricot. It is in effect a self of medium size, the best of substance and it did not fade under last year’s 100 degree temperatures nor did hot winds and rain destroy it as they did many others.

“Unusually bright and colorful is Hearthstone Copper, not large, but with a bright and flame like intensity of color in its yellow standards and bright copper red falls.

“A new addition to this group is Col. Nichols’ Crown Jewel. A rich burnt orange describes its unusual color. It is not tall or large but for the admirer of rare and beautiful color, it will surely catch the fancy.

“A most marked advancement in the unusual colored blends is Dr. Kirkland’s Copper Lustre, a copper self with a gold suffusion with good sized blooms on stems of medium height. In this iris Dr. Kirkland has obtained a remarkable break in color. I saw several more highly interesting seedlings in his garden which I have high hopes of trying here.

“Of the finer new variegatas, the first to come to mind is that fine production from M. Cayeux, Vision, a sharp, and clear cut true variegata with pure yellow standards and deep garnet brown falls. The size is of the best in this type. The stalk is well branched and it is a good grower.

“Just as outstanding in the blended variegatas is El Tovar, richly colored, standards deep mustard edged with mikado brown, and solid velvety maroon black falls. It is inspiringly and deeply sombre and majestic.

“Mr. Morrison’s Picador the acquaintance of which I made for the first time last year is the most blended type of variegata, tarnished buff gold standards, falls deep brown carmine. I liked it exceedingly.

“Aurex is another fine variegata type, well branched with pure yellow standards and typical Ambassador falls of rich purple

brown. There is very little blending in the standards and it is especially fine in moist years.

“Lady Morveth is a very tall and large flowered development in this class from England with buttercup yellow standards and crimson brown falls. The large flowers are carried on fine stalks.

Gudrun a great new white

“In the pure whites, Gudrun was by far the most startling new introduction shown last year in the middle west.

“With blooms of fine size and great purity, the flower has life in it not usual in many whites which, I believe is due to the soft golden iridescence throughout the whole flower.

“Eastern Morn, coming from California, is proving a little difficult in our trying weather but is surely a fine iris, distinct in form, on good stems and a fine tone of white with warmth in it due to its orange beard.

“Venus de Milo from Cincinnati is perfectly hardy, a fine creamy to pure white of excellent substance and fine smooth texture with faint markings of blue along the haft and base of the standards and a most interesting golden orange beard. The stalk is finely branched and the blooms are well spaced.

“Joyance, coming from England, a beautiful cream, is a fitting and worthy companion of Gudrun.

“I have had the privilege of inspecting Jacob Sass' Crystal White for two seasons. It is of pure alabaster white, excellent substance, blooms of size on tall well branched stems. It looks very much like the hardy white we have been seeking in the north and midwest to replace the hard to grow Purissima. It is an exceptionally fine production. Hans Sass exhibited a fine new white, Snowking, at the Lincoln show.

Fine new pink plicata

“A very fine new plicata is Electra, large flowered of excellent substance with adpressed standards and ideally semi flaring falls. The standards are plicated with a blue margin and dots as well. It is very precise and trim of form. The falls are pronouncedly veined with the markings changing to gold along the beard which is bright orange as is the haft. The effect is striking and distinct.

“Tarantella from Hans Sass is a new plicata of the color and type for which we have been looking. It is the first giant plicata

with real pink markings. The stem is of good height and well branched. The margining of pink is in a very definite pattern on both standards and falls. The style arms are pink and the beard is inconspicuous with white tips. It is vastly superior to True Delight.

“A most unusual newcomer appears in the amoena class in Sha Jehan. The coloring is striking. The standards are white flushed lavender with a touch of yellow at the claw. The falls are rich, glossy prune or rich solid rosy magenta and unveined. This glorious hue blends to a solid brown haft with a light yellow beard. It is a most unusual creation.”

Our middle western inspector general and chief iris diagnostician, Dr. Harry H. Everett, in his Lincoln, Neb., garden finds very different conditions and most severe tests of quite a different character from those encountered in Minnesota and these two regions typify the range of growing conditions in the middle west. Dr. Everett has travelled from Maine to California in the last two or three years visiting iris gardens, nurseries and breeders' establishments, looking enviously on many fine irises which he has tested under the severe conditions of his garden only to find they would not grow. Minnesota and Nebraska give us pictures of the extremes in growing conditions.

He has not gone into detail concerning those that flourish for him but gives in a general way what is more valuable information, those types that will not flourish. A study of the form letters of Mr. Schreiner and Dr. Everett should enable an average gardener of the middle west to select irises best suited to his growing conditions. Says Dr. Everett:

Nebraska's trying conditions

“Plants which gladden the eye in bed and border in other regions do not do well or do not do at all for us. The last twenty years has been spent in trying out and discarding almost the entire list of favorite garden flowers, favorites in happier environments. Only the hardiest of plants will endure the somewhat scanty care which I am able to give the garden.

“We have to contend not only with the pests and conditions that confront the gardener in other regions but in Nebraska we have drying winds, both summer and winter, drought and terrific heat in summer. Our winters afford alternating periods of freeze

and thaw with temperature fluctuations of sixty degrees in one twenty-four hour period.

“For this reason, the shallower rooted varieties suffer most. Such things, take Black Midget for instance, as the smaller pumilas are heaved during the winter and after a year or two disappear from plantings. The California species have proved impossible, repeated plantings both spring and autumn either succumb to the heat and drought of summer or are lifted and killed by frost. Exceptions are *Iris cristata* collected in the Carolina hills, *Graminea* and *Hartwegii* raised from seed.

“There is no intent entirely to damn Nebraska’s climate or to infer that other plants cannot grow and flourish with us. Peonies, lilies, poppies, hemerocallis, all the great family of composites, flourish as well as the iris, while in the spring all the early bulbous sorts with the various narcissi cover the ground with a blanket of color.

Roses and irises survive

“From June on after *Rosa hugonis* has gladdened our eye, the rest of the roses brave the heat of our western plains until they are cut down by the first killing frost. Delphiniums and columbines add their stalks to the picture but they must be treated as biennials. The coarser campanulas thrive and reseed splendidly. However, from early April to early July the iris supply a continuous pageant of color unequalled by any other flower and I am happy to say the Japanese do well here.

“It is interesting to observe what a spot of beauty some neglected iris makes in the borders while another variety, perhaps a Dykes medalist, sulks and blooms only every third or fourth year. You cannot judge the worth of an iris by its rating or by the award hung so casually on its unworthy stem. Deerless and Claude Aureau, for example, have scarcely increased at all after five years and have bloomed only once in all that time.

“During the early years almost every suggestion in the various magazines and the instructions sent out by dealers were followed with the consequence that the mortality in new plantings was tremendous.

Lime and sitting duck fallacies

“I hope that the hand which writes again that lime, rubble, crushed limestone should be used freely in the preparation of an

iris bed be stricken as he writes the words, while the one who recommends planting an iris like a 'duck on the water, just sitting' be confined in an institution.

"I remember my first collection of the Dominion race, sixteen in all, which was planted in a well limed bed with the rhizomes just firmed in the ground. Practically every one heaved and half the lot was lost. Right then my distrust of the written word and the Dominion race was born and they have been substantiated by the experience of passing years.

"Certain ones, however, have done exceedingly well, Valerie West, Grace Sturtevant, Duke of Bedford, Tenebrae, Moa and Bruno are examples. Dominion has been planted again and again. I have now one plant with its scanty increase which has not bloomed in six years.

"Hybrids from Dominion and its first generation offspring, the results of crosses with sturdier and hardier varieties, have given us some beautiful things, of which Blue Velvet is a shining example. Much has been said for and against this iris but in Nebraska it increases rapidly, is very hardy and seldom bunches. Cardinal as a parent is invaluable but it is difficult with me and is not a desirable component of a bed or border.

"In sharp contrast to the Dominion race in their behavior are the hybrids of *mesopotamica*, Ricardi and *cypriani*. Few of these are tender in Nebraska. This is due perhaps to the fact that as soon as the ground is safely frozen the beds are covered with a blanket of wood wool. The foliage may be harmed by the early spring frosts which follow an open period of warmth in late March but the rhizome and bloom points do not seem to be harmed. This is in contrast to the Dominions which are often crippled by a late spring freeze.

Species soon disappear

"These species such as *mesopotamica* soon disappear but the second and third generations hold their place with all except, perhaps, the *pallidas* and our own hardy varieties developed within our state.

"With us the Siberians are hardy as can be desired, adding a more graceful note to the garden picture than do the more sturdy bearded types. Spurias, too, have grace and butterfly beauty wanting in their tall bearded relatives. The monspur hybrids



SPRING MAID

are exceedingly hardy and beautiful and rise as do the other spurias, high in the borders.

“As to other species, few are of any real garden value at present. Versicolor, especially kermesina and many of its adventitious seedlings are delightful. Graminea is delightful and has a fine perfume. Bowls of this iris and aurea, the species, are as beautiful indoors as out.

“Fulva and its hybrids with foliosa and hexagona prove hardy and well worth growing. With the exception of these mentioned native species, there is no place in the ordinary border for our native beardless types.

Deltas of little value

“The Louisiana variants do not do well with me and even where I have seen them growing apparently in fine form I do not care for them. The plant is out of all proportion to its flowering and hybridizing should be done with a view to lowering its height and curbing its rampant growth of foliage. Flowers must be increased in size and number, hardiness must be bred into them before they can find a place in a Nebraska garden.”

And now with our form letters telling what the irises have done in their past performances under widely different conditions and with a survey of the different color viewpoints, we shall present three different answers to the question previously proposed, “If you had the space and all the money you needed, what would be your selection of irises for an ideal midwestern garden? How would you combine them with each other? How would you combine them with other perennials for your ideal garden?”

The answers come from rather widely separated points, the respondent, to avoid arguments, as one said, and because as another said, “you can't imagine with an audience” did not wish their names to be used so they remain anonymous. The question is tossed out as a fertile field for anybody to do something in the way of furnishing the BULLETIN good copy. Here they are:

It has always seemed to me that the finest and most fascinating displays of irises were made in units of limited extent. The iris is one of the most intensely interesting of plants not only because of its wide variety of coloring but because of the diversity of pattern, blending and marking which can be seen and appreciated

only at close range, a plant of personality, so to speak. The larger the mass of a single variety the less interesting the individual bloom becomes as there is a loss of personality. The irises which are valuable for mass planting are the ones with the least personality and really aren't so much good for anything else.

Therefore my ideal iris garden as I vaguely dream it out would be one of a number of small or not too large units, related but not directly thrown together, or at least it would be a garden with constantly changing views where you wouldn't see too big a sweep of irises in one glance.

Mrs. Pattison's garden in Freeport with which we middle westerners at all interested in irises are familiar is a case in point. It really is a series of gardens until you step through a small entry way into the great sweep of bloom in the commercial planting and how infinitely more interesting are the smaller areas.

The Chicago firm of landscape architects, Simonds & West, designed Quality gardens, Mr. J. Roy West doing the actual work, this firm having done much for the improvement of mid-western landscapes.

Snake fence as model

As nearly as any definite idea formulates in answer to the editor's question about an ideal selection of irises, an ideal arrangement of them which opens such a tremendous field for speculation, it seems hard to do much but generalize, I'd take an old fashioned rail or snake fence for my model, recalling childhood memories of such a fascinating fence which was never desecrated by the scythe for quite a scape on either side. Native plants thrive undisturbed for years in its angles and every time you turned one of the angles you had a new little garden often of entirely different plants and on both sides of the fence, too.

If I had a landscape architect that wanted to do what I wanted him to do and didn't want to do what he thought I ought to want to do, I think I should turn him loose to design a gigantic zigzag boundary of trees or shrubs about fifty feet across the openings of the angles with the planting following the outline so every time you turned a corner you would see something new.

As these gardens are purely of the imagination there is no use being stingy about them so it could be any distance long, at least a mile, so when I wanted to put in a full day looking at irises, I

could do it without going back to look at the same thing twice unless I wanted to and every once in a while in one of those angles there would be a pool to surround with spurias and Siberians and other moisture loving types.

The landscape architect undoubtedly would think he had a lunatic on his hands but the middle western editor's instructions are: "Use your imagination" so this tremendous and weird garden can be done without cost.

Start with a climax

I should be truly modernistic and start with my climax and back up to the rest of it. The climax should be composed of variegatas, hemerocallis, and orange red Oriental poppies for the most part, particularly those hemerocallis with brown reverses. In the foreground there should be yellow and orange Iceland poppies scattered thickly.

I should move out of the climax on one side through the variegata blends into the reds with irises like King Juba which picks up exactly in color the falls of Numa Rumestan and these reds and the yellow and pink blends make grand plantings and with them would go the lighter and clear yellow hemerocallis and the salmony pink Oriental poppies.

On the other end I would move into the blue scale through old Loreley, Decennial and Odenvogel with electric blue flashes that would pick up things like Baldwin. With the blues there would be plenty of background of scarlet and oxblood red Oriental poppies with the medium and dark blue irises respectively with plenty of whites with the dark blue toned and creamy whites and the anemic yellows with the medium blues.

Oriental poppies and uses

Getting into the light blue irises I should have swarms of columbines and pyrethrums with the rose Oriental poppies. Then would come plantings of yellow and white irises in large drifts. I don't know why nobody ever seems to do this but nothing makes these yellow irises which are no more than sallow blondes look yellow than to put them alongside whites and in this massing of yellows and whites I should have occasional clumps of Midgard, or Opaline or Frivolite.

From the yellows and whites into the yellow blends. The blue blends would be used lavishly with the blue selfs.

Once in the blends, combinations are so many and so fine that it is merely a matter of making such combinations as suit your fancy.

At the start of the garden for the earliest display of all there should be big drifts of dwarf irises and narcissi and there would be as fine a collection of narcissi as could be assembled. Following these there would be a big stretch of Darwin, Breeder, and Cottage tulips and hundreds of intermediate irises. I think I should start with these plantings at each end having the climax in the middle. It would be strictly unorthodox as there wouldn't be a vista in the whole place.

It would seem quite useless to make a catalogue of names for such a garden. Suffice it to say, the good irises in each color class which are tried and tested are well known. I shouldn't want to make any substantial planting of a novelty until I had tried it out thoroughly as to vigor of growth and free blooming quality in this region.

There should be hosts of low growing perennials all along, dianthus, *Linum perenne*, *Papaver rupifragum*, primroses of sorts with the early ones and so on all down the snakes' undulations. This may sound like a nightmare but lots of gardens are that way.

Here are the selections of another gardener:

Starts with reticulata

“With the earliest yellow crocuses, *Iris reticulata*.

“Next, atrovioleacea of course, in sheets of bloom, not in the border settings. Then azurea or coerulea with the early narcissi of the color of our old friend Mme. de Graaff, followed by the dwarf hybrids in all the new tones of purple, orange, white and blue. Dainty *Iris verna*, *arenaria*, and *gracilipes* would grace my early spring beds and when they were gone *cristata*, both lavender and the adorable white would have all my admiration.

“Then I would want to have coming into bloom those lovely daughters of *Iris susiana*, Luna and Clotho and others of the regelio-cyclus group so different and interesting in form and color. *Korolkowi* and *Hoogiana* should be members of my iris family.

“If I had great patience to wait for the pogo-cyclus group, they have waited three years to bloom for me in my real garden,

I should plant Dilkush, Lady Lilford and Parsam to bloom with those of sweeter dispositions like Zwannenburg and William Mohr.

“By this time I should be ready for the overture to the great symphony to be found in the colors of the early tall bearded, Desert Gold, Crysoro, Zua and some of the lovely new ones the brothers Sass are putting on the market.

“Then for the symphony itself—with the deep tones of Black Wings, Blue Velvet, Mme Serouge, deep purples, and the bronzy ones, Depute Nomblot, Ministre Fenand David, Mrs. Valery West, Joycette, Dauntless, but one cannot name all the lovely ones. For contrast, Alta California, Chromylla, William R. Dykes, Helios and the whites like Easter Morn, Venus de Milo, Los Angeles and the whitest of them all so correctly named Purissima.

Wants blues in all tones

“I should have the lovely blues in all differing shades from Summer Cloud and our fine old Princess Beatrice, through the deeper tones of Sensation, Missouri, Realm, Blue Hill and Fortuna and the pinky toned beauties like Airy Dream, Imperial Blush, Noweta, the charmer, Marquissette. The darker ‘pinks’ like Frieda Mohr and Fragonard of early days should vie with the newer Rose Petal and Mary Senni in my iris planting.

“Then my whole planting would be blended, the colors softened or contrasted, as the case might be, by the loveliest of all color schemes in the garden, the wonderful blends of Anne Marie Cayeux, Dolly Madison, Evolution, Rameses, Zaharoon, Mary Geddes, Jean Cayeux, to mention but a few of the many of this fine class.

“To these I would add what some one termed the yellow bicolors—the Cameliard, Henri Riviere, Largo, Golden Helmet types. With these I should want only good green to separate and define color schemes in addition to the pale pink of my Oriental poppies.

Dutch iris grow popular

“By this time, I should be quite exhausted by so much color enchantment, for with these would bloom the Siberians and spurias with all the varying colors we have come to know these last few years and I should be ready for the quiet daintiness of the

bulbous irises in their clear blue and white and yellow dresses, Poogenbeek, E. B. Garier, Theo. Wicke, Leonardo da Vinci, White Excelsior and the many others of this class so worthy of a place in an iris garden. Then the English which we are again just learning to grow and whose names are still unknown to me, as they have as yet come in 'choice mixed shades.'

"If I could know we should always have rain in the spring, I should plant every Japanese iris I could beg, borrow or steal. But, I must know it would rain when these stately plants need it most, for water from a hydrant too often contains lime in great quantities here in our central west and our Japanese beauties cannot endure it, though I should try to influence the God of growing things to help me through some seasons anyway.

"Since the remontants that bloom so well in the south refuse to give their fall bloom to us in our cold garden, we must end this pageant of iris bloom with the Vesper Iris which does grow and bloom and bloom for our northern gardens. Dainty and with great charm all alone, it is much lovelier when planted with the white nicotiana, I am told, and that is my planting plan for next spring in my real garden."

Calls question too big

Another midwestern gardener made this answer:

Anything like a complete answer to this hypothetical question which has so many prongs to it would require a year for me to figure it out, at least, and such a heavenly state as it presupposes is a bit beyond my inauguration. I can, however, give a list of irises that I certainly should have that are within the bounds of reason and that I know from experience are good loyal middle western doers. These aren't all I would have by any means but the absolute certainties. Why? Well, let us say just because I particularly like them which is a good enough reason. There are a lot of unimportances I should just as certainly have, old timers and such, but their names would look like a lot of poor relations with these. Here is the list:

In the blue line—Blue Triumph, Santa Fe, Gleam, Sensation, Realm, Corrida, Royal Beauty, Blue Banner, Cydnus, Van Cleve, Swazi, Black Wings.

In the alleged and alias reds—Indian Chief, Joycette, Waconda, Irma Pollock, Morning Glory, Hernani, Shirvan, Coralie, Rose

Dominion. To be perfectly truthful, I'd lay hands on any of these good red toned irises I could reach. I like 'em all and I'm not so particular about their names.

In the nearest we have to pinks—Airy Dream, Imperial Blush, Caroline E. Stringer, Hermene. I'd have enough of each to make up for number of varieties as it seems to me many of them are very much alike and when you have one good one you've got about all of them.

Whites I like and these I have and be ready to try out any newcomers that look good and are proved good growers. I don't want any miffy ones around.

Los Angeles tops whites

Here is the list—Los Angeles way up at the top, True Delight, Princess Osra to clean up pretty plicata types; Shasta, Easter Morn,—I know it will grow for me; Venus de Milo, Michelline Charraire, just can't give this up; Yves Lasailly, Rhein Nixe even if it does belong in an old people's home, and Mildred Presby.

It has to be a bad yellow for fair that doesn't look like good garden stuff to me. These certainly—Pluie d'Or, Phebus, Chromylla, Coronation, Prairie Gold, Primrose. If any of these highly touted Californians and others bloom anywhere that I am this spring they will get the once over quite thoroughly.

Blends—I'm inclined to say give me all of them except a few that look as if they ought to have their faces washed. These are cinches—Spring Maid, Dolly Madison, Euphony, Midgard, Ophelia, Clara Noyes, Frivolite, Ochracea—I put Corrida up with the blues to go with this last one, you can't beat the combine, and I agree with Mrs. Silas B. Waters from whom I got the idea through the BULLETIN that it is "supremely beautiful"; Vesper Gold and Anne Marie Cayeux.

I haven't put in any variegatas as they don't strike my fancy much but as I'm developing into a hemerocallie nut I expect I'll come to them as I see them in grand combinations once in a while whether accidentally or not I don't know but they fit each other.

The great majority of the gardens of the middle west in which irises are the featured plant of their season are small or relatively small gardens and they are all the garden the owner has and he doesn't want a garden that stops with the iris. What is he to

do for color after the irises, taking into consideration that the irises will not stand crowding by heavy growth of other plants. Neither will they thrive if overshadowed and cut off from a full supply of sun. It is a rather difficult problem, particularly if the great majority of the plants are irises and they are, in fact all over the garden.

Here are some of the subjects used after a search for plants which have scant foliage with a good spread of bloom which can be planted among the irises without interfering with them. The factor of heat resistance is also an important one over the most of the middle west.

For all summer bloom and a particularly brilliant display up to freezing weather and also a great heat and drought resister is the gaillardia. It does not make too heavy a foliage to overshadow the irises and is much used.

When Oriental poppies are freely used, and they are becoming more and more popular, there are two plants to hide their unsightly corpses. These are the double gypsophila, Bristol Fairy and *Statice latifolia* or under its newer name, *Limonium*, the sea lavender. Its leaves while large, lie flat. The inflorescence of both is widespread but so misty it casts no shadow. To come up through these lavender and white mists gladiolus and the summer blooming lilies such as *superbum* and *tigrinum* are much used. They do nicely among the irises.

The middle west has become very much *hemerocallis* conscious during the last few years and raising them from seed is becoming as much a pastime as iris raising. The midsummer bloomers are excellent, planting clumps with those which bloom with the irises.

The old idea of the iris and perennial aster border which dates back to Miss Jekyll's "Colour in the Flower Garden" is perhaps the best idea of all provided you use the right type of aster and this is the *laevis* or smooth aster and if you want it you will have to go out and collect it when it is in bloom. This is very easy as it is common along middle western railroad rights of way and is readily transplanted when in full bloom. Careful selection of types should be made as there are two quite distinct ones, one with graceful widely branched sprays and others that are too bunched for garden use. There is a fairly wide variation in color tone but there are no finer blues in the whole perennial aster tribe.

The chief advantage of this species is that it does not spread by stolons all over the place, it is slender and rises well above the irises, and keeps its color without fading in the hottest weather. The fine varieties of the *Novi-Belgii* or New York aster type with the exception of *Climax* are of little use in the middle west. The leaves brown and shrivel and the colors all fade to a uniform muddy drab in sizzling weather, and besides they do spread underground faster than they grow above ground.

Annuals are used extensively, a favorite plan being to broadcast seed of good strains of Shirley poppies in the fall and in the spring scatter California poppy seed. The Shirleys are on the job with the fading of the irises with a fine burst of color and then the Californias will come on, for an all summer job of it.

We often wonder how people accumulate so much bad information and believe it so thoroughly and there has been quite a bit of it concerning the culture of iris. Irises are, for the most part, very well grown in the middle west, exceptionally so in some sections and gardens, and this is because we have discarded these old wives' tales and treated our irises as if they were just plants.

We know that the bearded irises do not require alkaline soil. We know they do not need lime and we no longer lime them and induce rot. We know that they grow very well in slightly acid and neutral soils and that in these mediums they are comparatively immune to rot.

We know that they will grow very well with only half a day of sun. Many of them are finer and their color value is better preserved if they are sheltered from the afternoon sun.

In the middle west good corn land is excellent iris land. Good corn land has to be well drained to be good corn land and if the land isn't well drained the farmer drains it with tile. The iris, particularly the tall bearded must have good drainage and in the middle west drainage is the most important factor in hardiness. Heaving in our open winters is minimized by drainage.

We know that irises, like other plants, must have fertilizing when the soil is exhausted. The best fertilizer for irises is old cow manure if you can get it, dug well into the soil. Some of our chemists tell us that the commercial fertilizers are no more than cocktails, stimulants but not the real food. Like the cocktail, the effect dies out shortly unless it is renewed and the effect of

too much renewal of these fertilizers works out very much on the iris as the too frequent renewals of cocktails on the human. After a while they will get sick or pass out.

The best quality irises are grown in mellow soil of good tilth. Clay soils give excellent results. They are excellently handled as shown in several gardens observed by breaking up the clay by digging in torpedo sand and old cow manure. If you can't find the cows, synthetic manure is next best for the breaking up and mellowing of the clay medium.

Sandy soils need the addition of humus quite frequently as they simply seem to eat it.

For iris rot, which in hot wet seasons in rather heavy soils becomes a devastating pest, the best remedies we use are cupro-jabonite, gypsum as advocated by Mr. Williamson and the permanganate bath, easy to apply.

The meanest pest and the one that is causing the most damage, particularly to bloom stalks, is the borer. Hand picking is the surest way and frequent digging. The new preparation, Dutox, applied in the spring just after growth starts has been reported as very effective in clearing them out.

When irises fail to bloom the best thing to do is dig and re-plant.

This sometimes stirs them up and when replanted gives them some sort of stimulant and some regular food.

The best form of planting from a cultural standpoint seems to be in drifts or groups not more than four feet wide which allows sun to go all through the planting and the best way to plant is running north and south if geography permits it for this very element of letting the sun in.

The middle west with its drought stricken gardens of which the iris of the bearded type is the chief survivor though often weakened is now in the process of replacement, repair and rebuilding. The rains last fall came so late that the irises were long behind their usual period of starting into growth and the prospect for the crop of bloom this spring is uncertain.

But we all know that the iris is the most dependable of perennials in all kinds of weather. They will come back.

A CALIFORNIAN SEES EASTERN IRISES

DONALD B. MILLIKEN

About the middle of our iris season here in California we were honored by a visit from Dr. and Mrs. Everett, Robert Schreiner, and Jesse Nicholls, Jr. The enthusiasm created by the presence of these most interesting and enjoyable iris experts proved a sufficient stimulus to make me decide to fulfill a long cherished desire—a tour of the important iris centers of the country. Such a trip would require some careful planning in order to be at the right places at the right time. To my surprise I found that my knowledge of the blooming season in other parts of the country was altogether too vague. After ascertaining the required dates and places, it became the complicated problem of a passenger agent to translate my desires into a round trip railroad ticket.

It had been my hope to go by way of Lincoln, Nebraska, and be present at the Annual Meeting of the Iris Society. However, when the date of this meeting was changed, this became impossible, so I decided to take the southern route and make Dallas, Texas my first stop. It was on the 19th of May that I left Pasadena, our blooming season being almost over. A few of the late varieties, such as Hollywood and Ochracea, were still in bloom, as were some of the first year seedlings. Seedlings are often irregular in their performance the first year here in Southern California. They act as though they didn't know just what to make of our unusually long springs, and some start to bloom as early as the first of March, while others do not flower until late May or June. I was not surprised to find quite a bit of color in the seedling beds when I returned from my trip the 10th of June.

Although I had for some time corresponded with several iris-minded people in Dallas, I had never met any of them, and so had simply written that I would be in Dallas Monday afternoon. As I came into the station from the train I had no idea of being met, but there stood someone with an iris in her hand. Mrs. T. T. Price and Mrs. Lindsley made the afternoon a most enjoyable one, and took me to their own gardens, as well as those of Mrs. Kirk and Mrs. Caillet. These people are doing much to stimulate interest in iris there in Texas. A single afternoon seemed all too

short a time to spend in Dallas, but Chancellor Kirkland had written saying that their things were going fast, so I decided to hurry on to Nashville. At that I was too late to see Nashville gardens at their height. Most of the bearded varieties were through blooming, although Jeb Stuart and Mary Geddes were still holding on. These are both first class irises and will be popular for years to come. I was particularly disappointed not to see Copper Luster, for I had read about this iris and had heard that it resembled Mr. White's Brown Betty. Maya, a strawberry red seedling of Mr. Washington's, was of particular interest.

Members of the Society who attend the Annual Meeting at Nashville next year have a treat in store for them when they are taken to Dauntless Hill, the country place of Mr. Connell. Located in a secluded and altogether charming spot on a wooded hill about ten miles out from Nashville, this retreat bears evidence of an untold amount of planning and work on the part of its owner, for Mr. Connell modestly explains that it is all a product of his own handiwork. Hand carved furniture and beautifully designed fireplaces make even the most ardent iris fan temporarily forget the primary object of the visit.

Returning from Dauntless Hill, Mr. Connell kindly took me to see Nashville's full size reproduction of the famous Greek Parthenon, architecturally the most perfect building the world has ever known. It was with justifiable pride that he explained the outstanding features of this magnificent structure, for its entire construction had been under his supervision.

Southern hospitality and fried chicken are hard to leave but a wire had come from Dr. Ayres in Cincinnati saying that the iris season was passing, so I hastened on. Seven o'clock in the morning is not a particularly convenient time to have one's guests arrive, but I was met at the station and taken at once to Dr. Ayres home where I found him already in the garden. I had told myself that at the home of such things as Meldoric, Coralie, Persia, Red Dominion and Indian Chief, I would be sure to see iris at their best; but I was unprepared for the thrill that I was about to experience. Grown to perfection, the irises in this garden were a sight to behold. From the pure whites and the most delicate blends of the Ningal and K. V. Ayres type through the entire

color range to the most vivid reds I had ever seen, there was nothing lacking. It would be impossible to describe all the outstanding things, but of those in bloom on my visit, two stood out in my mind as distinctly superior to anything of their type I had ever seen. One was Cheerio and the other Burning Bronze. Cheerio as it grew in Dr. Ayres' garden had the brightest velvety red falls I have ever seen. A clump of this would be a veritable bonfire. The standards are a lovely combination of dull gold and bright red, and blend beautifully with the velvety richness of the falls. For vivid red color, Cheerio is a distinct advance over such things as Red Robe, Ethel Peckham, Joycette, Red Dominion, Dauntless, etc.

An outstanding feature of many of Dr. Ayres' seedlings is the lack of conspicuous veining in the haft. This is particularly noticeable in Burning Bronze and to my mind adds greatly to its perfection. When a rich velvety color runs well up on both sides of the beard, the entire flower takes on an appearance of super-refinement. Dr. Ayres picked a specimen of Burning Bronze in order that we might compare its color elsewhere in the garden and for a full hour I carried this flower around in my hand trying to believe that such a striking thing could really exist. How aptly it has been named!

It was with sincere regret that I left this garden, for its contents fascinated me, and to discuss iris with Dr. Ayres is a real privilege. There were two other gardens in Cincinnati I wished to visit, however, and time was flying. I had heard much about the garden of Mr. and Mrs. Waters and found there a most comprehensive and up-to-date collection. Of particular interest to me were such things as Pacific, Frieda Mohr, and Los Angeles which I had been led to believe did not thrive in this locality. In this garden, however, which incidentally is on a very steep slope and thus affords excellent drainage, these things were blooming beautifully and were evidently quite at home. I would like to suggest here that from what I observed throughout the country, good drainage is quite evidently a more important factor in the successful growing of some of the so-called "tender" irises than is a favorable climate. There are in commerce many varieties with varying degrees of Mesopotamica blood in their make-up. It is a well known fact that this blood is responsible for such desirable characteristics as height, size, and branching, and consequently

breeders are going to continue to use it. Now it is also true that the presence of Mesopotamica blood *may* impart certain growing characteristics which cause the plants to give difficulty if kept too moist during the period in which they prefer to be dormant. I say *may* advisedly, because an iris with Mesopotamica blood does not necessarily possess Mesopotamica growing characteristics. It may inherit its growing characteristics from some other strain. In any event good drainage, whether natural or created artificially by planting on ridges, will doubtless do much to overcome the difficulties some people seem to be having with certain Mesopotamica hybrids.

The commercial garden of Mrs. Emigholz was nearby, and there I found an unusually complete collection of the new and outstanding things. Two soft-toned yellows attracted particular attention. Cadmia was of exceptionally clear color, and to my mind the shade of yellow best suited to the garden. The flowers were of good size, and of the popular semi-flaring type. The vivid "brassy" yellows are interesting but the softer shades are infinitely more pleasing in their garden effect. The other yellow was Robert. This could almost be classed as a blend, for the centers of the falls are flushed with blue. It is a lovely thing and would be beautiful in combination with Cavatina or Anne Marie Cayeux.

Leaving Cincinnati, I proceeded to Fort Wayne and the Mead garden, where I found many people enjoying the irises in full bloom. Among them were Mrs. Richer, Mr. Wassenberg, Mr. Bonnewitz, and, of course, Mr. Riedel who is carrying on the breeding work begun by Mr. Mead. Eros, a new salmon pink self being introduced this year, was the center of attraction. Persia must have struck me as being particularly outstanding in this garden for I made a note to stock it. Later observations in other gardens served only to increase my desire for this iris. Its charm seems to grow on one each time it is seen, and it is quite evidently a dependable performer, for it is uniformly good over the entire country. Being naturally on the lookout for California varieties. I was surprised to find that what I had taken for granted as being Los Angeles was an un-introduced seedling called White Nile. Mr. Riedel explained that while it was almost identical to Los Angeles in color, it was proving more hardy in that locality.

From Fort Wayne it was but an hour's ride to Bluffton and the Williamson gardens. I had seen fields of irises but never before such an expanse of color as this. Seven acres in full bloom! Mary Williamson took me on a personally conducted tour of the establishment, and also to the garden of Mr. Paul Cook nearby. Here I found a most interesting example of selective breeding, for Mr. Cook is systematically producing a strain of irises with blue beards. The results are of interest from an artistic as well as a scientific standpoint, for the flower possess a unique charm all their own. Mr. Cook is also working to produce an iris with a clear true pink color. Let us hope he succeeds!

Something a little out of the ordinary was to be found in the Williamson garden. They are introducing this year a group of five varieties which they very appropriately call table iris. Blooming at the same time as the tall bearded group, this new strain is especially suited for use as a cut flower. The small dainty blooms on stiff slender stems were of beautiful clean colors, and lend themselves admirably to table decoration.

Seeing new gardens and new irises is an exciting experience, but after a few days of continuous going the strain begins to dull one's sense of appreciation. Chicago was close at hand and the World's Fair offered some excellent diversion, so for three days I completely forgot about iris. I would hardly recommend the Fair as an ideal place to rest, but nevertheless it served its purpose.

Mrs. Pattison's garden at Freeport was next on my schedule, and in spite of the fact that this was the driest spring in many years, I found much of interest. *Cheerio* caught my eye at once, and nearby were beautiful blooms of *Easter Morn* and *Sierra Blue*, both of which we had introduced for Mr. Essig. There is a particular thrill in finding things of one's own introduction doing well in other parts of the country. *Alta California* showed up well, as did also *Trail's End*, *Persia*, *Anne Marie Cayeux*, and *Dauntless*. Mrs. Pattison has some thoroughbred irises, and she also has a thoroughbred dog. *Jimmie* is a handsome *Collie* from the *Terhune* kennels and is at once admired by all the visitors to this well known garden.

Washington, D. C., is of course farther south and consequently has an earlier blooming season. Never having been in the Nation's Capital, however, I couldn't forego the opportunity for

a short visit, and was more than glad that I went. Few iris were in bloom, but I have pleasant memories of a visit with Mr. Morrison and a delightful afternoon with Mr. Shull, the originator of Morning Splendor, Coppersmith, Sequoia, Moon Magic and other well known varieties. Incidentally, a brief visit to the Senate and the House of Representatives left me with a rather sickening feeling because of the utter lack of dignity in these the selected representatives of one hundred and twenty million people.

But politics and iris don't mix, and as I prefer iris, I left Washington for Woodbury, New Jersey, and the garden of Mr. M. E. Douglas, one of the regional vice-presidents of the society. Here was a *real* enthusiast! It was at night when I arrived, but Mr. Douglas simply couldn't wait until morning and daylight, so out we went into the garden. If the iris could have seen, they would have been surprised to find us walking up and down the paths as Mr. Douglas lit match after match to show me first one greatly admired specimen and then another. With the supply of matches exhausted, we finally had to give it up and turn in. Early the next morning I again went out into the garden and saw at once why Mr. Douglas had been so enthusiastic. Here were iris at their best. Displayed in irregular beds around the borders of the garden, the most careful attention had been given to proper color arrangement. What a difference this makes! My notes remind me that outstanding in this garden were Coralie, Meldoric, Claude Aureau, and Cavatina.

From Woodbury it is but a short distance to Germantown, Philadelphia, and the home of Mr. Wister, the president of our society. After a pleasant visit and a stroll through his beautiful collection of ireses and peonies, I went on to New York City, where I spent the week-end with my brother. Here again I had a change of diet, and except for a very brief visit to Long Island and the garden of Mr. Wayman, tried to refresh my sense of appreciation for a tour of the New England gardens.

First came Mrs. Kellogg's garden at West Hartford, Connecticut, and here I found one of the highlights of the entire trip. Again of particular interest to me were the California originations. Pale Moonlight was large and handsome on forty-one inch stems. Pacific, Blue and Gold, Los Angeles, San Francisco, Ahwahnee, and Alta California seemed right at home, and were as fine specimens as I have ever seen. Nearby was Pink Satin, hold-

ing her head above nearly everything else in the garden—a truly beautiful iris in spite of the fact that it has often been the center of conflicting opinions. And there was Persia again, almost out-doing itself in the midst of all the surrounding beauty. A particularly large bloom caught my eye, and I took out my ruler to measure. Seven good inches from the top of the standards to the tip of the falls, and beauty and charm had not been sacrificed to size. But the greatest surprise of all was the way the Siberians were growing. For a loyal Californian to admit defeat is indeed unusual, but when I found a Siberian iris fifty and one-half inches tall by actual measurement, what could I do? This was Llewellyn and close at hand was Gatineau (Abitibi) another Siberian, with flowers that measured four and one-half inches across! Over-the-Garden-Wall contains one of the most complete collections of the better varieties of iris in the entire country, and Mrs. Kellogg and her son, Bill, are indeed experts in their care and arrangement.

The next morning Bill and I started out in his car and drove up to the suburbs of Boston to the gardens of Mr. Gage at Natick, Miss Sturtevant at Wellesley Farms, and Mr. Donahue at Lower Newton Falls. Mr. Gage had a particularly outstanding seedling in the strawberry-red shades, which he has appropriately named Rosy Wings. Blooming for the first time this year, it will bear watching for it certainly stood out in his garden as a distinctly new color.

In Miss Sturtevant's garden I found Sierra Blue justifying a growing conviction that it is the outstanding blue-tone iris in commerce at the present time. Striking among the new things here was Good Cheer, a seedling of Miss Sturtevant's, reminding one somewhat of Citronella but of cleaner colors and a larger, greatly improved, flower. Having read much about the wonders of Polar King, it was disappointing not to find this in bloom in Mr. Donahue's garden, but its creator assured me of its merits.

Having met Mrs. Nesmith on my stop at Nashville, I was looking forward to my visit to the Fairmount Gardens in Lowell. Here again was the beautiful Mary Geddes with which I was now becoming quite familiar. Eros was blooming nearby and impressed me more favorably than it had at Fort Wayne, where it had evidently suffered from a thunder-shower the night before. Not being accustomed to heavy rain during the blooming season, I probably did not know how to make allowances. Gudrun was

also on display, but I failed to enthuse. I had seen much better whites.

In the afternoon Mr. and Mrs. Nesmith very kindly took me to Haverhill to see the private collection of Mrs. H. E. Lewis. Here I found an astonishing number of the very latest introductions from all parts of the country. With so many of the newest things, this garden will soon become a mecca for iris lovers and a most convenient place to compare the merits of the latest offerings of the iris world.

It was with regret that I left New England, for its delightful gardens and hospitable people had for several days given me much pleasure. There was yet another stop on my schedule, however, and although it was now so late in the season that I did not expect to see many more irises in bloom, I was anxious to spend a few hours with Robert Schreiner and compare notes, for he, too, had been doing a considerable amount of traveling.

Upon arriving at the Schreiner gardens in St. Paul, it was my good fortune to meet Mr. McDade of Chattanooga. Mr. McDade had likewise been visiting many iris gardens in the past month, and consequently the day was spent in a most entertaining three-cornered discussion. Robert Schreiner had attended the Annual Meeting at Lincoln and was full of interesting news. While I was there he showed me the plans for a new display garden he is planting. Visitors to his garden next season will find new landscaping, grass walks, and the newest varieties of iris from the entire country.

Mr. McDade is also building up a complete collection of the newest varieties, and it is his hope that members of the Society planning to attend the Annual Meeting next year at Nashville, will find it possible to go by way of Chattanooga. From all reports, his garden will contain one of the most complete collections in the entire country.

Having spent a thrilling three weeks, it was now time to return home. The iris season was over for another year. I was back in Pasadena once more with memories of many delightful days spent in gardens of exceeding charm, and with mental pictures of some of the most beautiful flowers in the world.

SCIENCE SERIES—No. 15

THE IRIS BORER

HARRY F. DIETZ*

The iris borer is perhaps the most serious insect pest of iris. Many an iris lover has seen an expensive, new, or cherished variety almost killed by it, or a well planned ornamental planting ruined through the ravages of this pest.

A few publications have been written by entomologists about the iris borer and recommendations for its control appear in the cultural notes of many growers' catalogs.

Clean culture; burning over plantings; and digging, cleaning and resetting of plants every second or third year are most generally recommended.

The writer knows from his own experience in a city garden that clean culture alone will not control the borer, although he readily admits that it is a valuable supplementary measure.

Burning over plantings is fraught with the danger of severe injury to the plants, especially since there is no absolute way to govern the amount and the duration of heat or the highest temperature that will be reached.

Transplanting every second or third year would relegate the iris to the fancier's specimen garden and rob it of its usefulness in well planned, beautiful and artistic border and mass plantings, for which purpose iris are admirably adapted.

LITERATURE—There are comparatively few entomological publications that deal with this insect at length. The most complete is that of Dr. Donald T. Ries (two Iris Insects, Science Series, No. 5. BULL. AM. IRIS SOC., July, 1929, pp. 27-46).

DISTRIBUTION—The iris borer is widely distributed throughout the Eastern United States. It has been found in Connecticut, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin. In Canada it occurs in Ontario, Quebec, and New Brunswick. This is a wide range of distribution. However, it must not be presumed that the ravages of this pest are equally severe throughout the large area involved in its range. In fact there

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seem to be many localities where iris borer is either unknown or is of such minor importance that it has never attracted attention.

There is little doubt but that the iris borer has been distributed from one garden to another (often at a distance) through the exchange or purchase of plants. Obviously, unless meteorological and other factors held the pest in check one would expect severe injury throughout its range. Even in a State such as Indiana or Ohio, the borer is a pest only in certain localities and these are quite scattered.

LIFE HISTORY AND HABITS—The control of all insect pests is based on some knowledge—however meager—of its habits and life history. The most important of the habits are its methods of feeding and the time of year that the feeding takes place.

Dr. Ries has given an excellent account of the life history and habits of the borer. Therefore, a brief summary of the life history of the borer, its habits and a description of various stages through which it passes is included here. It must be borne in mind that the iris borer is a living animal and that just as blooming dates of iris vary from year to year or from one region to another, so do the dates of the various activities of borer vary.

The adult moth of the iris borer is a typical cut worm moth, of modest color and of retiring habits. The moths are about 2½ inches wide across the spread wings and about one inch long. The general color of the front or fore wings is dull brown with the margins a purple black. Fine black lines traverse the wings. The hind wings are dusky grey in color as is the abdomen.

The adult moths in northern regions, northern Indiana, New York, and Pennsylvania, may appear as early as the middle of September and as late as the first week of November. The adult females mate within three or four days and then begin laying eggs. Each female may lay from 150 to 200 eggs in clusters of 10 to 30. The eggs are usually laid on dry or drying leaves or along roughened areas on the rhizomes. Sometimes they are laid on the green leaves, or on dry debris around the plants.

In most regions where borer is a menace it has been observed that the greatest injury occurs in protected, thickly planted gardens. Field plantings exposed to bright light and the sweep of the winds usually show little injury. All this is due to the fact that the moths prefer to fly at dusk or later, on cloudy days and even then seek shaded spots and protected clumps to deposit their eggs.

The eggs which are approximately hemispherical in shape are

about 1/50 of an inch in diameter. Their surface is beautifully sculptured. When first laid they are glistening white in color. They soon change to a pale yellow, then to brown and in the spring, just before hatching, become pale lavender. The time that the eggs begin to hatch in the spring depends entirely on weather conditions. The earliest date at which hatching has been observed in central Indiana was April 3. At Ithaca, New York, Ries observed the first hatching out-of-doors on April 18, although eggs brought into his laboratory hatched several weeks earlier. It may safely be said that the hatching of iris borer eggs should be expected at about that time in the spring when the daytime temperatures go above 80 degrees for several successive days. All of the eggs do not hatch at the same time. Since in the spring, periods of very cool weather usually follow warm ones, the hatching of the iris borer eggs is intermittent and may extend over a period of two months. As an example, the writer's experience during the year 1927 may be cited. The first eggs hatched on April 15. Alternating warm and very cool periods followed with the result that the last eggs hatched on June 27.

Since the iris borer eggs are very small, one would expect the newly hatched caterpillars to be small. They are less than 1/16 inch in length. Their bodies are delicate pink and their heads deep brown (almost black) in color. These small caterpillars (or larvae) wander over the iris foliage eating small holes here and there. Many, although not all, of them, actually bore into the tissues and act as leafminers. Those that do not mine, feed along the edges of the young leaves. All areas where the borers have fed take on a water-soaked appearance and "bleed." This should be carefully noted because where control by dusting or spraying is undertaken it must be begun at the time the first hatching of the eggs occurs.

It is needless to describe borer injury to one who has had experience with the pest. He is well aware of the fact that the larvae after abandoning their leaf mining and wandering over the surface enter the leaf sheaths, and chew along the edges of the young and tender center leaves. This injury is readily observed after the center leaves develop because the chewed areas turn brown and give the leaves a very ragged appearance. As the caterpillars grow, they begin tunnelling toward the rhizomes. Thus in six to eight weeks after the eggs hatch, borers may be found in the rhizomes.

The full-grown caterpillars are about two inches long, very pale pink to whitish in color with the head, dark reddish brown. The row of dark spots on either side of its body are the breathing pores (or spiracles). Until the borers are full-grown they are voracious feeders and one large borer may reduce several rhizomes to a mere shell. Fortunately, the caterpillars are cannibalistic and should two of them meet in the course of their feeding, a fight ensues in which the victor devours the vanquished.

The iris borer caterpillars become full-grown sometime in August. At this time they leave the rhizomes and burrow into the soil around the plants. Here they change into bright brown, spindle-shaped objects called pupae. The pupal stage is called the resting stage or transformation stage. The moths emerge from the pupae from late September to early November. If the weather is unusually dry during the period that the moths are emerging, many are crippled and cannot fly. However, this does not seem to prevent them from mating and laying eggs.

CONTROL—A fairly complete account of the life history has purposely been given for several reasons. The first was, to show why clean cultivation in itself will not give satisfactory control. The second was, to show that no single application of insecticide irrespective whether it was a dust or a liquid spray could possibly be effective. The third reason was, to show that after the eggs have hatched and the larvae have reached the leaf sheaths no spray can reach them or their food and kill them.

The writer recommended arsenate of lead sprays as a control for iris borer as early as 1926. This method of control has proved satisfactory, but was open to several serious objections. The first of such objections was that iris foliage is very difficult to wet. Therefore, some material had to be added to the arsenate of lead spray to cause the spray to wet the foliage and at the same time cause the lead arsenate to adhere to it, instead of running off with the liquid. Soap was the material usually used, but soap formed soluble arsenic compounds which caused foliage burn.

The second objection was that the spray collected in the developing flower buds and caused them to rot. This often resulted in a serious loss of blooms.

The iris borer belongs to the same family of moths as the corn ear-worm. Corn ear-worm on tomatoes and sweet corn has been controlled in certain parts of the United States through the use of Dutox dusts.

Taking these experiments with corn ear-worm as a clue, the writer suggested to the late E. B. Williamson that he try this new dust as a control. This was done in the Spring of 1932. The dust was applied at approximately weekly intervals, from the time the eggs began to hatch until the blooming period. In October (1932), Mr. Williamson wrote that this dusting program "works, really works."

Following this lead, the writer planned three cooperative experiments in 1933 for the control of iris borer. Two were in Northern Ohio and one in Indiana. In all three places the borer infestations in the past were very heavy.

Of the three experiments that were planned, only one was carefully carried out. This was in a large garden where iris was used extensively both in border and foundation plantings. The garden was divided into two equal parts in relation to the distribution of iris. On one half of the iris, Dutox, 1 part by weight, diluted with 4 parts flour, was used as a dust. On the other half, a like dust mixture of lead arsenate—flour was applied. The applications were made with a small hand duster. The first application was made on April 20 and applications were continued at weekly intervals *except during the blooming period*, until June 20. The counts of more than 1,000 fans in each treatment gave the following results:

<i>Material</i>	<i>Borer Marks</i>	<i>Actual Borers</i>	<i>% Control</i>
Dutoz—Flour 1-4	105	6	94.5
Lead Arsenate—Flour 1-4	26	5	83.7

In the foregoing the percentage control has been determined in the following way. The number of fans showing borer marks (but not infested by borers) was divided by the total number of fans showing "attempted entrances." This number is obtained by adding together the number of fans with borer marks and the number of fans in each of which a live borer was found.

Subsequent reports that have reached the writer from the same area in which the test garden was located show that the borer was a serious pest and seriously injured nearby plantings.

Hot dry weather is unfavorable to borer development, but in well cared for gardens, the garden hose offsets the rainfall deficiency.

Iris growers from several states have recently reported the satisfactory performance of Dutox—Flour dust.

This account is to be regarded merely as a progress report. It is intended as an answer to inquiries that are constantly being received concerning the possibility of using Dutox in iris borer control.

1934 COMMENTS BY ACCREDITED JUDGES

NOTE: In the following comments, the 1934 group rating has been included on all varieties so rated. Varieties not given a group rating either were not scored by the required five judges or have been in commerce longer than the designated three-year period.

Adobe: (C) (Williamson) 1. An unusual coloring of yellow and browning red. Not tall. (Ind.) 2. A lighter, browner, Omaha. (Washington, D. C.)

Alice Horsefall: (C) (H. P. Sass) 1. Very rich dark red-purple. (Pa.) 2. An early intermediate. (Washington, D. C.)

Alta California: (Mitchell) 1. One of the best yellows to date for garden value. (Calif.) 2. The shape of the flower is not perfect and the veining at the haft is a mild defect, but it is a very effective yellow and a great addition to any garden. (Colo.) 3. The brown veining sometimes noticeable in the haft is almost entirely absent in this locality. (Pasadena.)

Amigo: (Williamson) 1. Blue-purple bi-color. Light edge around falls is quite distinctive. (Ind.) 2. Seen several years. A very wonderful outstanding creation. (Ind.) 3. A heavy, brilliant bi-color, carrying any distance. I have watched this through four successive seasons, have seen it as one, two and three year plants and consider it one of E. B. Williamson's very finest originations. (Ind.)

At Dawning: (A) (Kirkland) 1. Pleasing approach to white and deep pink bi-color. (Tenn.) 2. Excellent in every way. (Tenn.)

Avondale: (B) (H. P. Sass) 1. A very brilliant iris and has great garden value. Fuchsia color. (Mass.) 2. Rich color, bold veining, long orange beard. (Mass.)

Aztec: (B) (Kirkland) 1. Aztec is among the best of the originators' newer iris. (Tenn.) The bloom is small and similar in color to Junaluska, but not so dark. (Tenn.)

Beuchley's Giant: (B) (Beuchley) 1. Very fine, tall, clear-toned blue. Color is not sacrificed to size. Both very outstanding. (Ia.) 2. Great size the only feature. (Ill.) (There seems to be a wide difference of opinion on this iris for it was rated as low as 66 by one judge, and as high as 94 by another.—R.S.S.)

Blue Gown: (C) (Essig) 1. Better stalk and better substance than Lochinvar. (Mass.) 2. Rather meagre in effect in individual flower, lacks quality. Fine garden group with Bonnie Blue and Bluet. (Mass.)

Blue Monarch: (B) (J. Sass) 1. When I judged Blue Monarch in Mr. J. Sass' garden it was one of the hottest and windiest days, yet Blue Monarch stood up very well. (Ga.) 2. Appears to be somewhat lacking in substance. (Md.) 3. Very clear toned violet blue self. Large flower on a 40-inch stalk. A good doer. (Nebr.)

Blue Triumph: (Grinter) 1. This has the smooth finish of Grinter's things. An outstanding iris. (Colo.) 2. The stalk displays three flowers perfectly. Color very attractive. (Colo.) 3. Rated by 12 judges in 1933. Why rate it again while our judges are debarred from rating in 1934 such things as Marquita, Jean Cayeux, Anne Marie Cayeux, etc.? (N. J.)

Burning Bronze: (B) (Ayres) 1. Well named and truly magnificent iris. By far the best deep rich bronze I have ever seen. (O.) 2. Very fine in every way. (Ky.) 3. This is a very fine red-toned iris. Its reputation in October, 1933, BULLETIN for lack of vigor was evidently not correct, as it was fine in growth in Dr. Ayres' garden. (O.)

California Gold: (B) (Mitchell) 1. Deep gold, slightly flecked on first year plant. Short stalk. (Mass.) 2. Flowers crowd. Wonderful color. (Mass.) (These were the only two comments made on California Gold and are perhaps misleading as it is rated in the high 80's. Judges were unanimous in scoring it high on color.)

Cheerio: (B) (Ayres) 1. The brightest velvety red falls ever seen. A really striking iris. (Ill. and O.) 2. Clear in color, giving good effect in garden. (Ill.)

Chromylla: (Loomis) 1. Fine in Georgia. Very hardy. Free blooming, fine form and finish. 2. Slightly deeper Moon Magic. About the same form, high branched, four blooms, foliage too tall. (N. J.) 3. Held up well after few days' sun and wind. (Colo.)

Copper Luster: (A) (Kirkland) 1. This is the most distinct of all Chancellor Kirkland's coppers and tans. (Tenn.) 2. Copper Luster is the finest new iris we have seen. Distinct color and military bearing in flower, stalk and foliage. (Tenn.) 3. A very beautiful color that appeals to everyone. A very large bloom of rounded shape, substance fair, could be taller and stalk could be better. (Tenn.)

Coralie: (B) (Ayres) 1. Coralie is a distinct new color combination. Standards and falls light rose-purple underlaid a coppery brown that combines to give a coraly-pink effect. Large and a fine thing. 2. Can give it much on color but it is very fragile, and while Dr. Ayres deserves the Dykes Medal for his great work, Coralie should have had more than color to get a Dykes. (O.)

Desert Gold: (Kirkland) 1. The flower on this plant was nearly perfection this year in form and in substance, but the color is too pale in our hot sun. (Colo.) 2. Gold in the name leads one to expect a yellow instead of a cream colored iris. (Colo.)

Dogrose: (Insole) 1. Bi-color—pink—that is good with me. (Ga.) 2. The segments of this flower are too long. Almost of the strap variety, but the general effect of the blooming plant is delightful. It is one of my favorites. (Colo.)

Easter Morn: (Essig) 1. This iris appears to be very fine and an excellent addition to the list of white iris. (Ill.) 2. My choice of the whites. Hope I like it as well next year and hope it proves hardy. (Ga.) 3. I have never succeeded in growing this as I saw it in California. It has been fine, but not the super-flower I brought home in my mind. (Colo.) 4. I believe Mrs. McAhren is the only person in Sioux City growing Easter Morn. In her garden it was a glorious iris, of a specially good form and substance. (Ga.) 5. Color not as good indoors as Purissima, but a better garden plant. Large, more vigorous. (Mass.)

Eclador: (A) (Cayeux) 1. A smashing yellow of a distinct type for its size. (Canada) 2. Substance seems very good, but I was undecided as to lasting qualities. (Colo.) 3. Lasting quality not very good this year. Standards and falls remarkably broad. Veining not particularly objectionable. (Colo.) 4. Very fine yellow. My preference of all.

Eloise Lapham: (Lapham) 1. Coloring of C. E. Stringer, otherwise no comparison, all in favor of Eloise Lapham. (Wash., D. C.) 2. We have grown this iris three seasons, and I saw it in the introducer's garden. It appears to have little garden value. (Ill.)

Eros: (A) (Mead) 1. Nothing like it. Finest pink to date. (Ind. & Mass.) 2. I should call this a pale coral, rather than salmon. (Ind.)

Ethel Peckham: (A) (Williamson) 1. Much more red than Joycette or Rob Roy. (Mass.) 2. It is very much redder than Joycette and a much more distinctive and outstanding iris. I regard it as *THE* red iris now in commerce. (Ind.)

Ethelwyn Dubuar: (Lapham) 1. This is the largest of the pinks and a beautifully formed flower. Darker than Pink Satin, although hardly as clear color. (Ga.) 2. A fresh clean, very large medium light pink, which I believe to be the largest extant. (Wash., D. C.)

Fayaway: (B) (Washington). 1. A tall and well-branched stalk with large flowers of heavy substance of Doxa-type, but very tall and much larger flowers. (Tenn. and Mass.)

Fearless: (B) (Kirkland) Intensive red-purple. Good garden value. Flower a bit too open. (Tenn.) 2. Standards too open, blooms bunched, brilliant color. (Tenn.)

Golden Helmet: (B) (Sass, J.) 1. Unusual coloring and very rich in tone. (Mass.) Stalk too heavy. (Mass.)

Golden Light: (B) (Sass, H. P.) 1. A Euphony seedling, close enough so that almost anyone can see the similarity. 2. Warm golden bronze with metallic pink overlay. (Nebr.) 3. A glowing color in the garden. Good height and branching. (Ia.)

Gold Foam: (B) (Nesmith) 1. Form too ruffled and angular. Bunched on stalk. (Mass.)

Good Cheer: (B) (Sturtevant) 1. Resembles Citronella, but taller, larger flowered, better form and cleaner color. (Mass.) 2. A brilliant iris and quite unusual. (Mass.)

Gudrun: (Dykes) 1. A glorious Moonlight with a bluish cast. (Canada.) 2. An enormous white, although I like Easter Morn better, different forms. (Ga. & Tenn.)

Happy Days: (Mitchell) 1. Splendid new yellow of large size, lacks a little substance, but is much better than W. R. Dykes. (Mass.) 2. The largest iris bloom of any color, being as large as El Capitan. (Calif.) 3. Not quite body enough. Immense flower. Beautiful yellow. (Mass.) 4. A very large flower of good color but Mr. Mitchell and others will doubtless produce better yellows. (Calif.)

Helios: (Cayeux) 1. Recommended for the South. Very fine. (Ga.)

Imperial Blush: (Sass, H. P.) 1. It is a splendid pink iris of fine form, height and texture. (Ga.) 2. I prefer this over Pink Satin. (Conn.)

Jasmania: (Ayres) 1. W. R. Dykes coloring. Clear yellow falls, no reticulations. Domed standards, slightly ruffled. Orange beard, flower $5\frac{1}{2}$ x $5\frac{1}{2}$. Height, 45 inches; good branching; good tex-

ture; good substance. (O.) 2. First time to bloom. A yellow and light brown blend with a touch of lavender in center of fall. (O.)

Jeb Stuart: (B) (Washington) 1. A very distinct thing, a bi-color with tan standards and red falls. 2. The finest thing in dark blends that I have seen. (Tenn.) 3. Stands out in the garden, color runs up well into the haft. A fine iris. (Tenn.) 4. Substance less good than it looks when first fully opened. Tends to soften in hot sun. (O. and Conn.)

Jerry: (B) (Lapham) 1. A fine red bi-color, reddest of the early bloomers. (Wash., D. C.) 2. The color is like nothing I have ever seen, very bright ruby red. A brighter color than Red Beauty. (Mass.)

Joycette: (B) (Sass, J.) 1. Most resembles Red Dominion with suggestion of Old Rose. (Nebr.) 2. In J. Sass' garden in 1932 I preferred Joycette over El Tovar, but the latter in Col. Nicholls' garden in 1934 was superior to Joycette there and in my own garden. (O.)

Junaluska: (Kirkland) 1. Junasluska is outstanding in Dr. Kirkland's new-toned coppery bi-colors. (Tenn.) 2. The color is very distinct, on a tall stem with a finely formed flower.

K. V. Ayres: (Ayres) 1. K. V. Ayres is the finest of the Candlelight type of blend. In color, a pinkish grey, mauve with cream yellow base. Last year seemed quite close to Ningal, but this season they are not at all similar. Very large, tall and well shaped. 2. In the hot sun of this summer I thought the color was almost too delicate to carry well. All visitors liked it, however. The growth was very heavy and I thought the flower a trifle coarse and lacking the finish so common among French irises. (Colo.)

Largo: (Ashley) 1. Lovely but little different from others in this color class. (Ill.) 2. Soft color but rather too weak and washed-out (Md.) 3. A distinctly good iris. (O.)

Legend: (Wareham) 1. A taller, larger and much improved Cardinal. (Ill.) 2. This variety was sent gratis to me last summer. I was greatly surprised by its splendid size, form and habit in view of its low rating of 73 in 1932. (N. J. & Conn.)

Little America: (Kirkland) 1. A pure white flower, white, beard, excellent. (Tenn.) 2. Little America, a very large, tall, hardy pure white. Not as large as the California whites, but close in size. Very pure white, fine substance, and a fine rounded flar-

ing shape. Beard white. First class in every way. (Tenn.)
3. Very fine and distinctive. (Tenn.)

Maluska: (B) (Nesmith) 1. An excellent flower with fine garden value. (Mass.) 2. Not needed as I saw it. (Mass.) 3. Better than Grace Sturtevant. (Mass.) 4. A fine iris. (Mass.)

Marjory: (Stern) 1. A most beautiful flower, lavender S., closed. F. velvety bright red-violet. Fine form. Largest size, two flowers out on each stalk. One of the finest of that color I have seen. (Mass.)

Mary Geddes: (Washington) 1. A very fine blend. My notes say "Must get Mary Geddes." (Ga.) 2. A beautiful color when fresh, but tends to fade rather badly. To my mind the conspicuous veining detracts from its beauty. (Ill. & Mass.) 3. One of the first of a new range of color. A blend with orange and rose. (Mass.) 4. A beautiful iris. Splendid bloomer and perfectly hardy. One of my favorites. (Ga.) 5. An iris of beautiful and unusual color, which attracts much attention. Good form, tall and well-branched stalks. (Ia.)

Maya: (B) (Washington) 1. An outstanding blend with a deep strawberry red note. (Tenn.) 2. A beautiful coppery red of fine form and finish. (Tenn. & Mass.) 3. Perfectly branched, fine height. Not as pink as Rosy Wings, nor as unusual, more bronzy like Bronze Beacon. (Mass.)

Missouri: (A) (Grinter) 1. A blue halfway between the tones of Pacific and Sierra Blue, of beautiful clearness. (Colo.) 2. A wonderful blue. Enormous flowers. Fine substance and form. Bloom over a long range of time. (Ga.)

Monomoy: (A) (McKee) 1. A handsome, well formed flower of dark blue-purple coloring. Great substance. (Mass.) 2. Much larger than Meldoric, better grower, fine substance and rich velvety texture. The best dark iris. (Mass.)

Ningal: (Ayres) 1. This iris has refinement. The best light blend seen this year. (O. & Conn.) 2. Not a very good opportunity to judge with assurance. Color delicate, hardly positive enough. Falls rather narrow. It is hardly outstanding as indicated by the one good stem present. Only four flowers on this stem. (Md.)

Nordic: (Kirkland) 1. Tan and red-toned bi-color distinctive coloring and form. (Tenn.) 2. Not very distinctive in color. (Tenn.)

No-We-Ta: (C) (Sass, H. P.) 1. Not a tall show iris but a wonderful garden flower—large frilled, beautiful rosy-pink blend. (Nebr.) 2. Dainty and charming for garden border. (Ill.) 3. Question:—16 judges gave this a rating of 85 in 1933. Why include it in the 1934 ratings, when such as Lux, Serenade, etc., are barred? Also Jean Cayeux, Marquita, Anne Marie Cayeux, etc.? (N. J.)

Orilica: (Kirkland) 1. Another of Dr. Kirkland's coppery toned bi-colors, lightest of all in tone. (Tenn.) 2. Dr. Kirkland has a number of copper and tans that are superior but some of them are so near alike that all are not needed. *Orilica* and *Ojibway* especially were much alike. (Tenn.)

Parthenon: (A) (Connell) 1. A fine upstanding hardy white of excellent carriage. (Tenn.) 2. *Parthenon* is fine large hardy white, in color what we expect of *Moonlight*, a warm nice white overlaid with a flush of clear yellow, haft veined yellow. (Tenn.)

Persia: (Ayres) 1. *Persia* does very well indeed in Georgia. Hardy, profuse bloomer. Flowers well poised on strong stems. (Ga.) 2. Simply grand. (O.)

Pink Opal: (B) (Sass, J.) 1. Near *Pink Satin* and *Imperial Blush*—not very distinctive. (Ill.) 2. Judged on both new and established plantings in three gardens in Iowa and Nebraska. Better color and substance than *Pink Satin*. Worst fault is too high branching stalk. (Nebr.) 3. It is a charming iris and I am a long ways from giving it up in my garden, but even so, was surprised that it should have been introduced since *Imperial Blush*, one of its progeny, is so much better—is so much better branched and with flowers more ruffy. (Ia.)

Prof. S. B. Mitchell: (Cayeux) 1. *Prof. S. B. Mitchell* is a very rich deep brilliant red violet, with overseen of blue. Slightly white at haft and cold there. S. of good shape, but F. could be improved. A distinct new color in a very large flower on tall, fine stem. Near some of Col. Nicholls' *Valor* seedlings in color and height and size. (Calif.) 2. Blooms bunch and is lacking in substance. Color appealed to the public. (Calif.)

Red Dominion: (Ayres) 1. Not as large or tall as it might be but I can find few varieties to compare with it in general excellence as it grows for me. (Colo.) 2. This is not what I consider a red iris but is a fine iris and a very free bloomer. (Mass.)

Red Robe: (Nicholls) 1. A good iris but not in the "red" class

at all. In color class of "Red" Dominion and Donna Sol but does not appear to be equal of Donna Sol. (Ind.) 2. A fine variety but not tall and free blooming for me. That is what brought the rating down. Think it of enough value to award it the A. M. (O.)

Robert: (Ayres) 1. Fine yellow of good substance and form. Tall and well branched. (O.) 2. A large flowered soft yellow with a flush of blue in the center of the fall. Good, resembles Sunol. (O.)

Rosy Wings: (A) (Gage) 1. Color of a dark ripe velvety peach. Good enough to eat. (Mass.) 2. An outstanding iris. Large flowers on a tall well-branched stalk. Attracts instant attention because of its beautiful and unusual color. (Mass.)

Royal Beauty: (B) (McKee) An attractive iris but it hardly achieves greatness to my mind. (Colo.)

Shining Waters: (A) (Essig) 1. I consider this the best blue I have seen to date. (Calif.) 2. Shining Waters is the best of the large group of fine blues put out by Essig. Although the others are all distinct. Shining Waters has more all 'round good points than any other; it is the bluest, is of good depth of color, of very even distribution and good size and height. (Calif.) 3. Lavender self of the most satiny texture. Segments are a little narrow. (Mass.)

Sierra Blue: (A) (Essig) 1. This is the best of the Essig blues. (Mass.) 2. A tall well balanced stalk and flower of attractive color. It may not satisfy all of the requirements of the perfect flower but it pleases me year by year better than any flower that I grow. (Colo.) 3. Sierra Blue is the tallest, largest and perhaps the most striking of all the Essig blues, or California blues, for that matter. Four and a half feet and over, with huge blooms of perfect flaring shape and heavy substance, of beautiful shades of blue and blue purple, it is very impressive. (Calif.)

Spokan: (Sass, J.) 1. A large bloom. It, and War Eagle, both very fine, although I like Spokan slightly better. (Ga.) 2. Big—crowded. Good, but not particularly lovely. Not a great iris to my eyes. (Ind.) 3. So new and distinct that it is hard to compare it to anything, but Timagami is somewhat similar.

Spring Maid: (Loomis) 1. The most wonderful branched stalk as it grew in my garden. 48 inches with 6 blooms at one time. Very fine. (Ga.)

Sunol: (B) (Mitchell) 1. Dull gold and blue blend of excellent substance. (Mass.) 2. Very soft, usual colors that some people find dull, others beautiful. (Calif.)

Talisman: (Murrell) 1. Small flower, short. Pink and yellow buff effect. Somewhat better than Opal Dawn. (Mass.) 2. Resists rain very well. Fades very quickly. (Mass.) 3 Nothing wonderful except color. (Ga.)

The Black Douglas: (B) (Sass, J.) 1. A large black self of good form, the blackest iris I have seen. (Nebr.) 2. The orange touch on beard and veining at haft make it lighter than Black Wings.

Tenaya: (Essig) 1. Extremely floriferous and rich in effect. (Mass.) 2. The best one of the new varieties I have seen this year. (Mass.)

Theodolinda: (C) (Ayres) 1. Probably a better doer hereabouts than San Francisco which is with me very susceptible to root rot, and Los Angeles which is less so. (Conn.) 2. Large but a bit loose in its make-up. (Md.)

Tint O' Tan: (Ayres) 1. Rather a distinct copper brown color. (O.) 2. A tall light golden bronze. Not particularly good form as falls tend to pinch and twist. (O.) 3. Taller than Tuscany Gold, more branching with larger flowers of long and narrow divisions. (O.)

Trail's End: (B) (Williamson) 1. In form like Sachem, but in color a medium pastel pink blend; when established expected to show the same fine quality of Sachem. (Wash., D. C.) 2. This iris is fine in every way except for the size of falls,—too small. Novel in color. (Ill.)

Valor: (A) (Nicholls) 1. Finer than Van Cleve but very close. Richer effect from dark haft. Not as fine branching. (Mass.) 2. A longer Swazi flower on a tall stiff well-branched stem. (N. J. & N. Y.)

Venus de Milo: (Ayres) 1. An outstanding iris deserving of merit. (O.) 2. Substance papery. No award of any kind recommended. (Va.)

War Eagle: (Sass, J.) 1. War Eagle was one of the most outstanding irises in Mr. Graham's garden. For beauty of color, distinction of carriage, perfection of plant, it had few, if any, equals. A wonderful iris. (Ga.) 2. Very striking although I like Spokane a trifle more. (Ga. & Tenn.)

SPECIES NOTES

Notes on Iris Chrysophylla

The irises of the Pacific Northwest are usually mentioned as suitable for rock garden use. This is true in general, but three species, *Douglasiana*, *tenax* and *missouriensis* are too tall to be quite right in a small-scale rock garden. *Missouriensis* is capable of growing to three feet in well-watered, rich ground, though it is usually not more than half as tall. *Douglasiana* has coarse leathery foliage, and when two or three years established, is really just too big. Both are lovely as cut flowers, or naturalized among rocks on a slightly shaded piece of ground. *Tenax* in some local forms, is coarse; in others, slender and delicate.

But *Iris chrysophylla* is a good rock garden subject, if it can be given some shade, possibly that of trees at a little distance, or the shade made by a large rock to the south of the plant. The flowers are much lower than the leaves, and like crocuses, have so little stem as to seem entirely stemless. The long slender throat of the flower serves as a stem, given support by the bracts that sheathe it. It is two to five inches above the ground, and the leaves are two to three times as tall.

The color of this iris is, generally speaking, creamy white, and it is known in southern Oregon as the "white iris." But its local forms give several variations in color as well as in height of the flower, width of sepals, etc. The color variation is mainly in the veining, but this gives the flower its tone, delicate pastel lavender, blue or primrose without much difference in the creamy ground color. The veins are tawny brown, red, golden yellow and shades of blue or lavender.

The flower is found growing in rather gritty soil, sometimes in deep evergreen shade, always where it has some shade. It seems to bloom more abundantly where shade and sunshine are alternated. In our garden we do not seem to ripen seem, and that is probably because it is too dry during the period just after blooming.

DREW SHERRARD, Oswego, Ore.

Iris histrioides Foster

Now that we begin to have supplies of *Iris reticulata* available in the trade in this country it is to be hoped that our growers will turn their attention to building up stocks of some of its allies of which this is one of the most charming. According to Dykes, it increases naturally by the production of small bulblets as well as some offsets of rather better size. If grown in frames so that no accidents of weather overtake its blooming it is probable that one could have supplies of seed as well so that two methods of increase could help the grower through the early years of increase.

Seed of all these small bulbous iris germinate freely, making a single leaf the first year and growing on slowly to their maturity. Care must be taken in the seed bed to insure that the tiny bulbs are not lost in any weeding that might disturb the surface. Shading may be required to keep them from too intense heat during midsummer.

Coming from northern Asia Minor, the plants do not suffer from cold in winter and since this species produces its leaves well after its early flowers, the leaves are not damaged in freezing, so that the bulbs are not crippled by any frosts that might destroy tender leaves produced in midwinter. The flowers appear with the earliest crocus species, showing here in the first mild days that release the soil from frost. They show above the ground as do crocus flowers and need some not too rampant ground cover to set off their delicate pale blue loveliness. To my eye they are far better in their clear lavender blue than the form of *reticulata* known as Cantab, but that is perhaps purely a matter of opinion. If one is lucky enough to have access to collected bulbs there is considerable variation to be noted in the exact hue and in the amount of spotting on the blade of the falls. Standards, falls and style branches are of about the same color, but in the center of the falls there is a central white area that is veined and dotted with the same color as the rest of the flower and set off by a ridge of yellow.

The editors shall be particularly glad to hear from any members who are now growing this species.

Washington, D. C.

IRIS TENUIS

Iris tenuis is an example of a plant which has forsaken the usual habits of its genus. It is a typical woodland plant, quite different in all its requirements from the other native north-western irises, and restricted in its range to a small portion of the western slopes of the Cascade Range.

I first saw it growing in a typical foothill forest crowded in among the dense undergrowth that covered the forest floor. Here the growth was quite sparse, and the plants so scattered that the casual observer would not have seen them among the other plants. This was the only place that I knew of where they grew, and I quite naturally concluded that it was rare in numbers as well as restricted in range.

Last summer, however, my son came home from a mountain camp with a tale of some plants seen in the forest on a moonlight hike which he thought might be irises, and so, one hot afternoon we started off on their trail.

The quest led us high up in the densely wooded hills clear to the end of a primitive forest road and down a precipitous trail over boulders and fallen trees. After we had scrambled down hill through the dense underbrush for about two miles we came quite suddenly upon a gently sloping hillside quite free from underbrush, save for a few rhododendrons and hazel bushes. The ancient Douglas fir trees were three to four feet in diameter, but the thing that compelled the attention was the irises. There was no other undergrowth here. They covered the forest floor like the grass on any lowland meadow. There were literally thousands of plants on this one slope. Here in the leaf mold and decaying moss the plant was at home, and gazing at the plants, I hastily revised my former opinion about *Iris tenuis* being rare in numbers.

Iris tenuis has a running rhizome which produces rather sparse fans of leaves at intervals along its course, although this characteristic is somewhat modified in cultivation, and the plant then becomes more compact in habit. The leaves which grow to a height of seven inches are rather wide in proportion to their length, light green in color and rather lax in texture.

The branched flower stem produces several blossoms in succession. They are light cream or white in color, and the falls are



George C. Stephenson

Iris tenuis

marked down the center with yellow, and have a few faint purple veins. They are rather flat, and are very dainty in appearance.

The blooming season is in May and extends over quite a long period. Established plants flower very freely. This iris takes very kindly to cultivation, and when planted in loose soil in a shaded place will flourish and form heartier and more compact clumps than it does in the wild state.

CARL STARKER, Jennings Lodge, Ore.

Iris Sintenisii Janka

This small iris resembles the familiar *Iris graminea* in many ways and Dykes in his "Handbook of Garden Iris" describes it as intermediate between that species and a small *spuria*. The plants here and all others that I have seen in cultivation have been smaller than *graminea* so possibly all have been propagated from some small individual plant.

It is easily raised from seed and soon forms tufted clumps of wiry, evergreen foliage through which the short flower stalks rise bearing two or three rather spidery flowers that resemble those of *graminea* in color and form. They are followed in due course by fat seed pods, conspicuously ridged and ending in a sharp beak.

If one had ample room and time it might be interesting to raise hundreds of seedlings from which might be selected particularly good forms. Since it is a plant of dwarf stature and the most compact of habit, it makes a good iris for the rock garden although it by no means requires that treatment for successful growth. Native to the Balkans and Asia Minor as well as Italy, it is quite hardy to cold.



L. A. Guernsey

Iris Sintensis

[93]

TID-BITS 37TH

From California—

Speaking of irises, I must not fail to call attention to the peculiar condition which exists in our gardens at the present time. A long warm fall followed by rather early warm rains has led our irises to believe that it is early spring and the seedlings in particular are sending up a wealth of bloom right now. This blooming is not only confined to seedlings but quite a number of my standard varieties which I divided in July are already beginning to bloom. Ivory Coast has been blooming for two months and looks to me as if it would bloom again before spring arrives. You will be particularly interested in knowing that the large white iris which was so fine last spring bloomed, opened up two times more, and now has a flower in full glory. Although this first flower stalk is not up to standard, and the flower is not as large as it should be, it is none the less quite good, although on its present showing I would not care to send it out. Fortunately there are other divisions which will probably not bloom until next March and I can have a better idea of its value. All of the irises are coming up in splendid condition, and if we have a late, rainy spring, we will have a magnificent showing. On the other hand if our spring turns dry, as it did last year, we will probably have an off season. I may be able to avoid this by turning on the sprinklers in the event of such a catastrophe.

Berkeley, California.

E. O. ESSIG.

Getting Acquainted with Iris

Every plant has its own peculiarities—its points of interest, its lure for the interest of those who would learn. Those who have the keenest interest in iris find the greatest pleasure in studying its habits. All this is true of every variety of plant and each will be worth a time of study by its friends.

We have not found any plant that will stand more abuse, extremes of heat or cold, wet or dry, than the bearded iris. The experiment of planting iris in the frozen ground in December was successful—so was the experiment of leaving a clump on a pile of lumber during June, July and August, and then planting.

It is a common thing to see iris thrown out on blue grass sod taking root and making a fine show.

By digging iris frequently we note that soon after the blooming season all the old roots shrivel up and die and an entirely new set of roots develop. Of what advantage is this extravagant habit? The rose does not do this—in fact, hardly any other plant has this habit. As this change is taking place there comes a little resting period and this is the best time to transplant. Then the new plant establishes its roots in the new location and is able to make growth sufficient to insure a good crop of flowers the following year.

The three chief enemies of iris are leaf spot, root rot and the borer. By burning the field sometime during the dormant season the spores of leaf spot are destroyed. A spray of bordeaux in the spring after growth starts will accomplish the same thing. Root rot may be escaped largely by avoiding deep planting. We have had no experience with the borer in Nebraska. The very hot summers are likely unfavorable for the development of this pest.

The flower is not the only point of interest in iris. Leaves vary much in color. Gertrude has yellow-green leaves. Some have transverse markings—some are ribbed. Flower stems are interesting. Not all are straight and sturdy; some are bent and some are twining.

For several years I have kept a record of the date of the first bloom for several hundred iris. Five of these are taken to make up a calendar to indicate the comparative earliness of the season. The figures indicate the date of the first flower, all of these being in May, are as follows:

	1931	1932	1933	1934
Halfdan	10	4	7	3
Ivoryine	11	5	7	3
Nymph	12	4	10	2
Crimson King	12	5	14	3
Kochii	16	5	14	3
	—	—	—	—
Totals	61	23	52	14
Approximate Average.....	12	4½	10	3

The spring of 1934 showed a development a week earlier than in 1933.

Continued experiments in cold storage during the past season

showed that iris in bud could be kept in good condition for the show room for 18 days when stored in a temperature of 33 to 35. Many experiments have shown that 18 days is the safe limit. Furthermore, experiment has shown that it is best to stage these stored flower stems the evening before the show opens since they open much slower than flower stalks picked the morning of the show.

The experiment of planting seed at various times in the fall has shown that those planted in August as soon as the seed are ripe germinate the quickest. A light straw mulch protects these when winter comes. Nature sows the seeds in August when the pods burst open. This seems like a very good hint as to the best time to plant.

I have not seen any information as to the length of the blooming season of any iris. When I make further records on the date of the last bloom it will be easy to determine the span covered by each in its floral display. I am counting on this being very interesting.

The fun of crossing iris is a chapter by itself. How hard we tried to make crosses with Zua! A number of years ago Dr. Everett showed us a neat way of applying the pollen. Holding the flower stalk by the stem, all the parts were pulled off but the stamens. This made it very easy to apply the pollen to the stigmas of some other flower.

Lincoln, Nebraska.

G. H. GRAHAM.

Iris Notes from North Dakota . . .

The year 1934 has been in many ways a very trying one for the Iris Grower in North Dakota . . . The year has been marked on the west slope of "the Big Muddy" with scarcely any moisture. . . This, together with hot, dry winds and dust storms, made the year a difficult one . . .

I had the privilege this summer of attending the National Show at Lincoln, and this was a very happy experience. To know Dr. Everett and the Sass brothers. To have a chance to chat informally with Robert Schreiner who has been so kind to me in helping solve some of my soil problems was an experience that I will long remember . . .

I enjoyed that day too at the Sass farms and it will be of real value to me for our conditions here are so similar . . . I

found that my own cultural methods which I had worked out for our location were almost identical with those in Eastern Nebraska and while we have harder winter conditions yet the wind-swept hills of Washington County ought to point to hard varieties with us . . .

As a result of the trip I made many contacts that I value very much . . . To see J. D. and hear his hearty laugh. To get to know Mrs. Marriage and Mr. Andrews were real treats . . . One of the pleasant features of the trip was the informal discussion on the bus trip from Lincoln to the Sass farms.

Our blooming season this year was shorter than usual and many varieties did not bloom at all. I may be wrong but I have attributed this not so much to the hard winter as to the lack of moisture and growing condition the previous fall . . . I had the pleasure of spending an evening with the Iris fans of Fargo and Eastern North Dakota at the time of their Iris show after the national . . . Perhaps you would like to know just a little about it . . .

The show itself was held in one of the large furniture stores and while the entry list was small yet the quality was surprisingly good. The judge of the show was George H. Flynn of Enderlin, North Dakota. The show is a project of the Fargo Garden Society and this year was open to the public . . . Mrs. Jack Easton was the grand winner of the show and captured all three trophies offered. The O. J. DeLendrecie Cup for the most points gained. . . . The Northwest Nursery Trophy for the largest number of named varieties and the Fargo Garden Club trophy for the most outstanding flower of the show . . . Other high points were held by Mrs. J. A. Berger and Mrs. John Pollock, Third . . . The show was well staged and in the main was made up of standard varieties. Very few newer varieties were exhibited this year, owing in part to the season . . . I was struck by the fine exhibit of other than bearded varieties shown by Mrs. Walster. Dean Walster for a number of years has been specializing in the non-bearded classes and we hope one of these days to have the story of those experiments in print. He has promised that he will write a paper for us on his work as soon as there comes a let up in his heavy program . . . The Fargo Club are to be congratulated on keeping the work going in a difficult year . . .

So far this winter has been very favorable and we all look forward with true western optimism to a good year in 1935 . . . North Dakota is becoming increasingly Iris conscious and we are hoping that we may have some more members for the National this coming year . . . If any of our Iris friends are going through to the West Coast via the Northern Pacific, we would be delighted to have them stop off in the Capitol City. While we have no large plantings yet you will be given a cordial welcome and the latchstring of the Manse is always out to flower lovers . . .

REV. ELLIS L. JACKSON,
Bismarck, North Dakota.

Comment

In glancing over the Spring, 1930, BULLETIN, I noticed Mrs. Hires' notes on root rot. She suggests that perhaps heavily limed soil is responsible. I wonder if these data taken from my notes would be of any use.

In the summer of 1931, I planted Frieda Mohr, Dolly Madison, Folkwang, Gaviota, Gay Huzzar, Bruno, Purissima, Cardinal, True Delight, Esplendido, Germaine Perthuis, Glorise, Lady Foster, Mary Barnett and Tenebrae in a very shady spot on the north side of a building. The soil had been enriched entirely with leaf mold from maple, apple, elm and poplar leaves. The first summer I had a slight amount of rot in Folkwang, but it recovered of it sown accord, although it did not bloom until 1934. Purissima didn't grow at all and although Frieda Mohr grew it did not bloom. The others did beautifully and the color of the blossoms was more intense due to the heavy shade. In the summer of 1933 I moved all of these except Folkwang. Bruno I moved to a sunny spot that was not limed or enriched in any way. It has given me no trouble. The others I moved to a location that was slightly less shady than the previous one being on the north of my neighbor's garage. The soil had been heavily fertilized with bone meal twice a year and had one application of lime in 1934. Purissima and Frieda Mohr struggled for a year and finally died; Gay Huzzar lost all its previous vigor and in the past autumn I lost half the clump with root rot. Of True Delight and Mary Barnett I have only a few scraps left. Esplendido, Cardinal and Lady Foster were affected to a less degree; Dolly Madison only slightly; Tenebrae, Glorise, Gaviota and Germaine

Perthuis not at all. I am continuing my records and am cutting down on the use of both bone meal and lime.

I have found the additional varieties immune to root rot in soil that has been heavily limed and fertilized with bone meal and in heavy shade: Blackamoor, Blue Hill, Blue Velvet, Cameliard, Clara Noyes, El. Egleberg, Grace Sturtevant, King Tut, Marquisette, Midwest Pride, Morning Splendor, Nene, Prairie Gold, Rameses, Rheingaupele, Robt. W. Wallace, Romance, Santa Barbara, Sir Michael and Violet Crown.

ELEANOR HILL, Oklahoma.

FRAGRANCE. The powers that be have said that the introducer of a new Iris shall state what other flower it smells like, if any. Why? How do we know that the introducer's nose knows?

There is too much hair splitting by people who have no microtome. The question of fragrance alone is debatable enough itself. Here are some examples. A says that I. Fairy smells like grapes; B says that it smells like locust. What locust? Wait a minute, I'll tell you exactly what it smells like; that soft drink called New Grape.

One authority says *I. graminea* smells like ripe apricots, another says plums.

The pseudo-species *I. sambucina* was so named because it is supposed to smell like Elder blossoms and I have in front of me an English catalogue which says plums.

No, just say fragrant, not forgetting that fragrance and odor are not synonymous.

The only Iris that my nose tells me that it smells like any other flower is the Dutch Iris Golden Bronze, which, when fresh, has a heavy freesia fragrance.

ICONOCLAST.

Varietal Notes

BEAU SABREUR is a disappointment. The falls flatten even in fair weather. I can't say that I like the somewhat muddy color combination.

CLARA NOYES is an answer to those who would take the tweezers away from zealous hybridists. Although it is a wonderful advance in blends, the form and texture are in need of improvement.

DOLLY MADISON should be in every collection. Something about the flower suggests the charm and graciousness which we associate with the name of the wife of an early president.

FRIEDA MOHR, despite the conspicuous veining on the falls, is still one of the best pinks I have seen. It has the most satisfying perfume of any iris in the garden.

HOLLYWOOD is a real iris for Pacific Northwest gardens where occasional rains during flowering season spoil many beautiful iris with less substance. It is an enchantingly lovely blend which becomes more delightful as the season advances.

LOS ANGELES was admired by all who saw the magnificent stalk in my garden last spring. It is almost perfect.

MIDGARD is another iris which appeals to garden visitors. The branching is rather poor. On the whole, I consider it one of the best blends I have. It is beautiful in mass.

PLUIE D'OR would be a desirable yellow if the standards did not fade so.

PINK SATIN, as I saw it on a one-year plant in another garden, made me decide to try Airy Dream.

RASAKURA is a rose purple bicolor with Dominion qualities. The branching is good. This is one iris which almost needs the sun behind it in order to bring out the glorious coloring.

SOUVENIR DE LOETITIA MICHAUD is the best light blue I have seen. Last winter (a mild one on the Pacific Coast) the plant was left without protection. This fall it shall be covered. I will not chance losing such a beauty.

WILLIAM MOHR does not stand up well after a "heavy mist." The flowers are bunched on the stalk. Yet, if I were planting another garden, I would surely have it, even if this new garden were in the showery Puget Sound country.

J. DORNBLUT, Bellingham, Wash.

TO READ OR NOT TO READ

- HOW TO ARRANGE FLOWERS, by Dorothy Biddle. Doubleday Doran, Garden City, N. Y. \$1.00.

As might be expected from the editor of *Garden Digest*, Mrs. Johnson has given as a delightfully comprehensive presentation of the art. It is unique in that home decoration through the season is the guiding motive and that the good illustrations are reinforced by a wealth of small pen and ink drawings. This seems to emphasize the value of line and balance over mass or color and it has always seemed to me that, for most of us, economy of material is a necessity. There are chapters on handling flowers, on accessories to their arrangement, on periods and styles (in particular an unusually clear and helpful exposition of the Japanese "Way of Flowers") and even a brief bit of advice to the exhibitor as to standards of judging. As far as I know, Mrs. Johnson has not been prominent either as a winner or as a judge at flower shows and her book gains in value from this broader, less individualistic point of view. It will help an exhibitor, but it should join the most favored cook book as a home reference book. The author well expresses her indebtedness to the illustrator, Miss Dorothea Bloom for there is hardly a page without its illustrative appeal.

COMMERCIAL DIRECTORY

All of the dealers listed below are members of The American Iris Society. If you are buying iris for your garden, it should be your particular pleasure to make your purchases from the dealers who have worked with and supported your society. Your officers and directors invite your particular attention to this list. They also ask a favor. When you order, tell the dealer you saw his name in the BULLETIN and do him a favor by not asking for a catalog unless you mean business.

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THE AMERICAN HORTICULTURAL SOCIETY

INVITES to membership all persons who are seriously interested in horticulture. For its members it publishes an illustrated quarterly, *The National Horticultural Magazine* in which will be found a more diverse and interesting collection of horticultural material than in any other American garden publication. It was written by and for its members. Among its regular features are articles on: Conifers, California plants, American natives, iris species, narcissus, succulents, lilies, unusual shrubs and trees, rock plants, ivies, and many more. Particular features for 1934 will include a horticultural review of fuchsias and preliminary reports on tulip species. Membership is three dollars the year. Checks should be made to the Society and sent to MR. C. C. THOMAS, 211 SPRUCE STREET, TAKOMA PARK, WASHINGTON, D. C.

THE AMERICAN IRIS SOCIETY

ALTHOUGH all readers of the *BULLETIN* are supposed to know that the annual dues of the Society are three dollars payable by the calendar year, it has been called to our attention that there is a chance that someone who is not a member may read your copy and wonder how he too may become a subscriber. If you happen to be such a reader, let us assure you that the Society welcomes to membership all persons who are interested in iris who feel that special knowledge of iris would be welcome in their gardening.

Make your check or money order payable to the American Iris Society and send to Mr. B. Y. Morrison, Secretary, 821 Washington Loan & Trust Bldg., Washington, D. C. Please follow this instruction. It will help us all in the record keeping.

BULLETIN
OF THE
AMERICAN IRIS SOCIETY

MARCH, 1935

REPORTS AND BUSINESS, 1934

NO. 56

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OFFICERS, 1934

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Term expiring 1936:	Dr. H. H. Everett	J. B. Wallace, Jr.
	Dr. J. H. Kirkland	Richardson Wright
Term expiring 1937:	W. J. McKee	Euclid Snow
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13. Carl Starker, Jennings Lodge, Ore.
14. Prof. E. O. Essig, University of California, Berkeley, Calif.
15. William Miles, Ingersoll, Ontario, Canada.

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Registration—C. E. F. Gersdorff, 1825 No. Capitol St., Washington, D. C.

Test Garden & Display Garden—Robt. Schreiner, Rt. 1, Riverview Sta., St. Paul, Minn.

Exhibition—Mrs. W. L. Karcher, 1011 W. Stephenson St., Freeport, Ill.

Bibliography—Mrs. W. H. Peckham, The Lodge, Skylands Farm, Sterlington, N. Y.

Awards—Dr. H. H. Everett.

Editorial Board—B. Y. Morrison, Chairman.

S. R. Duffy	Mrs. C. S. McKinney
Mrs. J. E. Hires	B. Y. Morrison
Mrs. Lena M. Lathrop	R. S. Sturtevant

LANTERN SLIDES—Rental Fee (to members) \$10.00. Apply to Mrs. K. H. Leigh, Mo. Botanical Garden, St. Louis, Mo.

THE AMERICAN IRIS SOCIETY

PRESIDENT'S REPORT FOR 1934

■ I present herewith my fifteenth Annual Report. The year that has passed has been a difficult one on account of general business conditions but, in spite of that, the decline of the past years has been checked. The Secretary's report shows that instead of losing another hundred or so members, as we feared might happen, our total membership is only four below that of 1933. When conditions improve, I feel quite sure that our membership will once again gain quite rapidly.

The Annual Meeting was held in Lincoln, Nebraska, on May 19th. In spite of weeks of unprecedented heat and drought, Nebraska Iris enthusiasts put on a large and superb show and gave all visitors a chance to see many fine new Irises, not only in and around Lincoln but in the nurseries of Hans and Jacob Sass near Omaha. Members were present from many states, including Minnesota, Colorado and Oklahoma, on the northwest, west and southwest, Georgia on the south, and Pennsylvania on the east, with the states of Nebraska, Iowa and Illinois probably the most heavily represented.

Lincoln is the most western point at which we have held a meeting, but in our fifteen years of existence we have met twice in Illinois, twice in Ohio, and once in Kentucky, the other meetings having been held along the Atlantic Coast from Washington to Boston. It is a source of regret that we have not been able to meet on the Pacific Coast, but it has seemed necessary and proper to keep the meetings in or near the great rectangle in which our membership is most thickly represented and which geographically might be said to extend from Boston to Chicago to Cincinnati to Washington. I have, however, twice during my presidency visited California and made the personal acquaintance of many of our members there, and Dr. Everett made the journey out there last April.

As this is the last report which it will be my privilege to submit, I should like to re-emphasize in it several points that I have often mentioned before. This is a National Society. It must be kept

truly national, not allowed to become sectional. The object of the Society is to promote the culture of Iris and to improve the quality of Iris varieties. I believe that in its fifteen years of history the Society has succeeded in its undertakings in a remarkable way. Anyone who doubts this should think back for a moment to the period before 1920, when good Irises were comparatively little known and when nomenclature was in great confusion. Iris growers did not know each other, or what other growers or producers were doing. Today, the Iris world is different. We know each other.

By its many exhibitions held from coast to coast and from Texas to Canada, the Society has given to the general public an opportunity to see the finest Irises. There has been created a demand for modern varieties, a demand which has led to the establishment of many commercial nurseries specializing in Irises. Fifteen years ago the newer kinds could be had from only one or two growers in this country. The Public Test and Display Gardens of this Society in many different states and the opening to the public of the many nurseries and private gardens of our members have likewise given to the general public an opportunity to see the improvement of the Iris.

Our fifty-four BULLETINS have given a wealth of information on all phases of Iris growing and are in themselves a valuable reference library, but their greater work has been to encourage the publication of a number of books, many fine catalogs and of countless magazine articles, all of which in their turn have helped to popularize our favorite flower.

I have seen so much of the financial difficulties of other Societies that I am thankful that our board of directors has always almost leaned over backwards in its conservatism. As a result, we are today proud of our sound financial position and of our small but growing endowment fund, built up from careful savings and from special contributions by our members.

Any Society like this which functions without a paid staff, owes a great debt of thanks to its various officers. In the early years the Secretary and Editor, Mr. Sturtevant, carried almost the entire burden. Among our early helpers who are no longer with us were Mr. Presby, Mr. Farr, Mr. Boyd, Mr. Scott, and Mrs. Lloyd. About 1925, Mrs. Peckham and Mrs. Hires became most active, and in more recent years, Dr. Everett, Mr. Duffy, Mrs. Karcher, Mrs.

Waters, Mr. Morrison, Mr. Wallace and Mr. Wright have done much. In retiring from the presidency, I wish to publicly thank them and the many others, too numerous to mention, who have worked with them, for all they have done for the Society and for me personally. Without their energetic work such a Society as ours could never have been built and without their loyal support I should not have had the courage to accept the office of president and to hold it so many years.

We all recognize the many shortcomings of the fifteen years of work. I have worked to my utmost ability, and I am sure that the new President, who is entering office with the best and happiest wishes of all our members, will be able to greatly improve the service of the Society. I should be negligent to my duty, however, if I did not point out to our members that many of the things which have been criticized can probably not be remedied until such time as the Society is larger and has ample means and a competent paid staff. Volunteer workers cannot be expected to be on the job eight hours a day or any other stated length of time, day after day, year in and year out. All of our officers are busy people interested in many other activities, and they should not be expected to give an unreasonable amount of time.

I firmly believe that the flower we represent deserves a Society with a large endowment and a paid staff. While we have accomplished much more in fifteen years than the founders of the Society dared to hope for, it is still true that the surface of our work has only been scratched and much more remains to be done. I should like to leave this thought with the new officers and I bespeak for them the same loyal co-operation and support which has been given to me during my term in office. I am very grateful for the many kind letters which have come to me and for the cordial friendship and support of the members. I want all these kind friends to know that I look back upon the fifteen years of my service as years of the greatest interest and happiness. It has been a great and happy privilege to have been given the opportunity and duty of leadership during the formative years of our Society.

JOHN C. WISTER, *President.*

REPORT OF VICE-PRESIDENT

■ There is little to be said of 1934 except that in spite of the continuing depression and unprecedented weather conditions our Society continued to prosper. Certain deficiencies in policy were corrected and certain others are in process of correction. Your officers have tried to arrive at a happy compromise where dissentants were somewhat equally divided.

A definite restraint in introduction of new varieties is noticeable; still further reduction would not be amiss, however.

It is to be hoped that the annual meeting at Nashville will be widely attended. Great things await us there. We must remember that iris alone do not make a garden. We should all welcome an opportunity to add to and still further beautify our plantings with other flowers which compliment the iris and extend their lovely coloring throughout the summer.

We have a group of officers in the Society whose influence is great but who have taken their importance somewhat lightly. These are the Regional Vice-Presidents. We rely on them, because of their greater knowledge of their region with its gardens and its membership, to aid us in our contacts with the membership and with the local conditions and problems which arise. We expect the Regional Vice-Presidents to work to extend our field, to encourage garden shows where iris is featured, and to lend a hand in the betterment of the BULLETIN, and in the activities of the Society.

Some have been cooperative in a splendid manner. At present only four Vice-Presidents have reported for 1934. It is to be hoped that the complete list will be in by the time this goes to press.

Your officers are giving freely of their time to make the Society and the BULLETIN worth while, and we expect you to cooperate with friendly advice and criticism. After all it is your Society.

We need a growing membership to do all the things we have planned. If each and everyone of you can and will bring in one new member this year we can be still more valuable to you.

In this day of rapid transportation there is no reason why you cannot visit many gardens during iris time. I know of nothing more delightful than to meet the splendid people who form our iris-world. These contacts we make and the friendships we form are more beautiful than the flower we love.

Good pictures of good iris and of nooks and corners in various gardens are requested by the Editor. *Use a color-screen* to render tone values truly. Remember that the success of the Bulletin depends on timely articles. If you have something worth while send it to Mr. Morrison.

H. H. EVERETT, *Vice-President.*

REPORT OF SECRETARY

DECEMBER 22, 1934

TO OFFICERS AND DIRECTORS:

■ The year 1934 began with the transfer of the work of the Secretary, John B. Wallace, Jr., and from the office of the Science Press to Mr. B. Y. Morrison. This represents the physical transfer of letter files from each office, together with supplies of back bulletins, ledgers, used cuts, and miscellaneous materials.

Owing to pressure of official work, Mr. Morrison resigned from his office, the resignation being accepted by Mr. Wister at the Annual Meeting at Lincoln, Nebraska, June, 1934.

Mr. Wister appointed Mr. John Ferguson Acting Secretary, and the work has been continued on that basis, with Mr. Morrison handling all of the work except the mailing of the bulletins and the handling of vouchers. The Washington office is in room 821, Washington Loan and Trust Building, Washington, D. C., and daily messenger service is maintained with Baltimore. Mr. Morrison is at this office every day from 7:20 A. M. to 8:30 A. M., and from 5:00 to 6:00 o'clock P. M., for dictation to his secretary.

New stencils have been prepared for all members. A new Card Index of memberships has been prepared that will show by consecutive entries the number of years that a member remains in the Society as well as the time of payment. Statistics in other societies show that the same persons are usually prompt in payment each year or tardy each year. There were three billings during 1934.

MEMBERSHIPS

Membership shows four members less than 1933:

Life	74
Free, Exchange, etc.....	29
Honorary	8
Annual, Triennial (including prizes).....	770
	<hr/>
	881
Resignations	20
Not heard from.....	134

There were six deaths during 1934:

Mr. W. J. France, Pres. Scarboro Gardens, Ont., Canada.

Professor John E. Hill, Providence, R. I.

Mrs. Horatio Gates Lloyd, Haverford, Pa.

Mr. Stewart Johnson, Pittsburgh, Pa.

Felice Schmitz, Florence, Italy.

Mr. Homer C. Skeels, Takoma Park, D. C.

No solicitations were made for members except by correspondence and in answer to inquiries. Leaflets prepared during 1934 were sent to various officers and members who were willing to distribute them to prospective members. A. I. S. leaflets were also enclosed in A. H. S. correspondence.

ADVERTISING

Letters of solicitation were sent to all names in the 1931 membership list, requesting purchase of advertising. The usual reply was that there were inadequate returns on the investment. As a basis for this the Commercial Directory was planned, giving a new low rate, which could not be considered excessive, either in relation to circulation or return. This has been popular and has not produced protests (in writing). It is urged that it be continued.

There are two outstanding advertising bills—those of the Royal Iris Gardens, which has paid a little on account; and Treholme Gardens, which has ignored all bills for over three years. The unpaid balances on these accounts are ninety-seven dollars and forty-five cents (\$97.45) and seventy dollars (\$70.00).

OFFICE

It is suggested that a budget of three hundred and sixty dollars (\$360.00) be set up for office assistant. This estimate is based on a scale of twenty dollars (\$20.00) a week, allowing two weeks a month for January, February, March, June, September and December, and one week a month for others. This should be discussed after the election of the new Secretary.

CORRESPONDENCE

The Acting Secretary and Mr. Morrison wish to express their appreciation to all the members for their hearty cooperation and for their patience during the spring months when the office work was not carried on promptly, and hope that they will continue their support to the new officer, to be chosen at this meeting.

Respectfully submitted,

B. Y. MORRISON.

For the Acting Secretary.

REPORT OF THE TREASURER

DECEMBER 1, 1934

Cash in Chemical Bank.....	\$2,396.52	
Cash in Special Interest Account.....	568.10	
Cash in Farr Fund.....	425.41	
Bonds:		
Cleveland Union	\$1,000.00	
Shell Pipe	500.00	
Northern Pacific	500.00	
Paramount Broadway	1,000.00	
National Dairy	1,000.00	
Liberty Bonds	2,850.00	
		6,850.00
Farr Fund Bond.....	500.00	
Iris Check List.....	1,700.00	
Less sales	361.73	1,338.27
		<hr/>
TOTAL		\$12,078.30

PROFIT AND LOSS STATEMENT
DECEMBER 1, 1933, TO NOVEMBER 30, 1934

INCOME	
Memberships	\$2,301.20
English Society	48.05
Check Lists	16.58
Dykes	15.30
Sale of BULLETINS.....	88.53
Advertisements	164.70
Slides	33.00
Income on Bonds.....	292.82
Farr Fund Interest.....	7.94
Special Interest Account.....	6.78
	\$2,974.90
EXPENSES	
Administrative	\$ 383.44
Steno and Type.....	73.86
BULLETINS and Cuts.....	1,589.35
*Stationery	809.45
Medals	89.50
Miscellaneous	72.29
	\$3,017.89
NET LOSS	\$42.99

*Includes taking care of subscriptions.

RICHARDSON WRIGHT, *Treasurer.*

REGIONAL REPORTS FOR 1934

MRS. THOMAS NESMITH, *Massachusetts*

■ Some time ago, I resigned as Regional Vice-President of the American Iris Society for New England, but your Vice-President, Dr. Everett, has urged me to send in a report from this region.

Mr. W. J. McKee has been Chairman of our New England group for the past two years, and has called meetings frequently. At most of these there has been a good attendance, with discussion of problems brought up by the members; and while there has often been a diversity of opinion, yet it has been through these discussions at our meetings that we have come to a better understanding of the needs of the American Iris Society. We have found these meetings very helpful and interesting.

The New England group did not hold an A. I. S. Show in Boston this year, and it is exceedingly fortunate that we had not made plans to do so for, owing to our very severe winter, there were few good bloom stalks on either the older or newer varieties. For this reason I do not feel it is best to try and give varietal notes on the latest introductions.

Careful work was done by our Accredited Judges in New England in rating the newer varieties, and unless one has been a judge you can have little idea of the time and amount of work that is involved in so doing.

Recently, we have suffered a severe loss in the passing on of Prof. John E. Hill of Providence, R. I. He was well versed in iris affairs, with rare and discerning judgment of the qualities needed in a good iris. We shall miss his helpful advice and quiet delightful humor.

I am sorry not to send in a more detailed and useful report, but another year if all goes well there will be an abundance of the newer irises upon which definite reports can be made.

M. E. DOUGLAS, *New Jersey*

■ In Region No. 3, Iris activities of 1934 began with a popular ballot among our members to determine which varieties are believed by them to be the best suited for conditions here. Twenty-five per cent of all regional members participated in the balloting. A sample of the ballot is attached. (Not printed here.—ED.)

Later in January, 1934, an analysis of the ballots was presented to our regional judges and other members in attendance at a regional Iris Conference, held at the offices of the Pennsylvania Horticultural Society in Philadelphia. And shortly thereafter a full report of the results of the ballot and of the recommendations of the Conference was submitted to President Wister. A copy of the analysis of the ballots was also mailed to a considerable number of members who requested it.

As in 1933, so in 1934, the form of service by the regional vice-president which seemed to be most in demand was that of meeting with garden clubs in different localities for Iris talks about the selection of varieties for home gardens, about cultural problems, and about the work of the American Iris Society. Thus, during the Iris season, Iris talks were made and such Iris questions were answered at various meetings, quite without expense to any of the garden clubs in question. For example:

1. The Garden Club of Mt. Holly, New Jersey, our good member, Mr. Edward H. Levis, presiding—attendance over forty people.
2. The Camden Dahlia and Horticultural Society of Camden, New Jersey, meeting at the Y. M. C. A., Camden, arranged by Mrs. Frank F. Moore of Woodlyn, member of that Society.
3. Mrs. Joseph D. Pedlow of the Haddonfield, New Jersey, Garden Club, initiated arrangements by which about fifty members of that club attended an Iris meeting at my home. After the discussion the members inspected the Irises, of which over four hundred varieties were then in full bloom here.

Large groups of Woodbury Public School pupils, each group escorted and supervised by teachers, came successively to see and learn about the Irises here, by prearrangements requested by the teachers.

The "Garden Workers" Club, with a large membership along the "Main Line" in Philadelphia, were desirous of inspecting the Irises here following a meeting for Iris discussion, but the request came too late to be arranged in 1934. However, by request of Mrs. Rebmann of Ardmore, Pa., the meeting is to be held next spring at the home of Mrs. Sarah K. Fuller in Bryn Mawr, Pa., and thereafter the members are to inspect the Irises *here*.

Under the auspices of the Society, members of the Region made another Iris "pilgrimage" on May 26. After seeing the Woodbury,

New Jersey, garden, luncheon was served at the Merion Cricket Club, Pa., where President Wister made an interesting talk, referring to the Lincoln Meeting. In the afternoon, the procession of automobiles took our members first to see the "Iris Bowl" and garden on the estate of Mrs. Horatio Gates Lloyd in Haverford, Pa., and then to the Iris planting by color groups on the estate of President Wister in Germantown, Pa., these being two gardens described and illustrated in the January, 1934, BULLETIN of the Society.

Our regional members who were interested in Mrs. duPont's article, "A Nonagon of Delaware Gardens," will be glad to learn that we are not without reason to hope that next year's pilgrimage may be to Wilmington gardens, with the cooperation of Mrs. duPont and other Iris lovers of that city and its suburbs.

Your regional vice-president regrets that he was unavoidably prevented last May from attending the meeting in Plainfield, N. J., of officials of the A. I. S., of regional members and of the Park Commissioners there, for luncheon and to inspect the public Iris garden in Cedarbrook Park. Our member, Miss Harriette R. Halloway of Plainfield, was active in making the arrangements, and the meeting I understand was well attended.

Our members of this Region are most appreciative of the successful efforts of the officials of the American Iris Society in forwarding so well the work of the Society during these difficult times.

J. MARION SHULL, *Maryland*

■ Without knowing the precise metes and bounds of a Regional Vice-President's duties toward the A. I. S., I nevertheless gather that from each is expected something in the way of a report for the year. Unfortunately, the region centering about Washington, D. C., suffered rather severely in the matter of iris interests during the year just past. First came the loss of the late Homer C. Skeels, whose exceptional collection of the Morrison productions in addition to many others enabled him always to make a major contribution to any Iris Show within reach. He was not only able to exhibit many varieties but these were well grown and his displays were invariably of high quality. This year both the local Iris Show of the Takoma Park Horticultural Society, Takoma Park, Md., and that of the National Capital Dahlia and Iris Society of Washington,

D. C., missed his usual contributions. The N. C. D. and I. S. was further handicapped by the fact that almost at the last moment word came from Mr. Sheets of Treholme Gardens, College Park, Md., that he would not be able to exhibit his hundreds of varieties as before.

Mr. Sheets has presumably the largest collection in the East, south of New York, and possibly the largest without such exception plus an unbounded enthusiasm for the iris, but he was already a very busy member of the professional staff of the U. S. Department of Agriculture and as if this in itself were not a sufficiently man-sized job when the drought situation became acute he was chosen to administer federal drought relief, a burden of responsibility that left no loose ends of time even to think about his iris hobby. Under these circumstances the Iris Show staggered a bit but pulled itself together and put on a really creditable display.

A few new seedlings were entered by local breeders. One of these breeders, Dr. Charles W. Ayars of Takoma Park, Md., presented a splendid stalk of his Ethel Guill, a very large blend of the type of My Maryland (Sheets) which would surely merit an H. M. unless because of too great similarity to the latter. Dr. Ayars plans to grow it side by side with My Maryland for a close comparison. He also displayed an ochraceous yellow that seemed quite promising.

Mr. Simmons again exhibited his Midnight Skies, a fine dark blue-purple, not quite so intense as Meldoric (Ayres) or Purple Glory (Piper) but a flower of fine form.

None of the newest western yellows appeared at the show but the finest single stalk of the exhibition happened to be a well-grown stem of Pluie d'Or (Cay.) about 3 feet tall, 10 buds, and with three splendid flowers open. As shown here I have seen no yellow yet to excel it, notwithstanding that I have never succeeded in growing it that well in my own garden. Last year a similarly fine stalk of Dune Sprite held this premier position.

How many iris shows were held in this region this year I do not know, for my own freedom of movement was somewhat hampered during the blooming season. I did, however, make several special visits to the Sheets collection at College Park, where I found a splendid display of bloom, but it so happened that many of the most interesting of the new varieties represented there had been completely reset the year before or had been depleted in the course

of commercial operations so that in many cases the bloom was obviously not typical. Many could not be fairly rated for this reason.

I realize how inadequately this report covers the region it is supposed to represent, since no mention is included of the various centers of iris interest in Virginia. I hope that members from some of these points will supplement this with individual reports direct to the Society, and that I may find better opportunity to go farther afield another season.

(Reprinted in part from original printing, October, 1934, BULLETIN, 53.)

EUCLID SNOW, *Illinois*, 1934

■ American Iris Society work in this section has been slowed up the past year because of the impossibility of interesting new growers in this flower when it was at its lowest ebb in points of beauty and garden interest. Had I been unacquainted with the great possibilities for garden displays that only the Iris can give to a small or a large planting, I should never have given second thought to this lovely flower as it bloomed in this section the past season.

Our Iris lovers have devoted most of their time and effort toward holding the interest of those gardeners who have already begun to know and to enjoy its real beauty, hoping for better color next year. Wherever there is a collection of irises, be it large or small, that garden is sure to be open to fanciers and this season's sole topic of conversation, when fanciers met, has been the blooming of next year and we are all looking forward. There is a group of iris lovers at Wheaton, Illinois doing many fine things to popularize our pet flower. Their show this year was indeed a creditable affair. It was carefully planned, correctly classified, making it an easy job for a judge. On display were, of course, many older varieties but there were equally as many of the newer types, the whole showing discrimination in selection. This group could well serve as an example to others who live in sections where irises may be grown in perfection. Miss Greta Allum is the organizer and leader. The show at Freeport is the Mecca of all iris fanciers the first of June. It is too well known to need description. It was good this year, but the quality of bloom was off as it was everywhere, no seedlings showing novelty. "Quality Gardens" was crowded as usual with visitors from all sections. This garden is of the greatest educational value to gardeners of this region and the owner de-

serves the greatest credit for the assistance she gives amateurs who have real problems in their iris growing. Only the briefest varietal notes were made—it seemed too unfair. Another season will surely show the newer introductions to better advantage.

Outstanding among the newer varieties was a Joycette seedling of Jacob Sass', number 33/13. This was taller, darker, larger and better than Joycette, had a more vigorous growth, more substance in falls, 40 inches tall—and was the best clump and bloom the writer saw in 1934. Among the outstanding of the newer things were Summer Tan, Shining Waters, Snow King, Lincoln and others. These will be commented upon at some later date when they have been seen more generally.

DAVID C. PETRIE, *Idaho*

■ The Forward Club of Caldwell has sponsored an Iris show now for about ten or twelve years. It has been my pleasure to judge all but two of these shows. The first was awful but the spirit was good—piles of iris, but mostly Madame Chereau and Honorabilis and their brethren. Every year has seen an improvement until today one seldom sees anything of an older vintage than Ballerine and Ambassadeur.

Caldwell is only a small town but it has great civic pride and real gardeners. Their soil is naturally very alkali—not just alkaline; and in fighting this condition they have piled in the manure for years. I have never seen better iris than they grow there. This year the show was very early, April 17th, as I remember it. There were worlds of iris—all good: Coronation, Pluie d'Or, Michaud, Purissima, Dolly Madison. The outstanding things to my notion, however, in the show room were Pale Moonlight, Zuni, and Mary Geddes, in the order named. Mary was from a rhizome planted in the summer of 1933 so was not fully developed, but the other two from 1932 planting were wonders. I got a chance to score Pale Moonlight in the garden a week or so afterwards when it had passed its best and gave it a ninety-three. There were about twenty stalks four feet in height with masses of large pale blue lavender blossom of striking hue. Zuni had been just as good. Mary Geddes certainly will be worth watching in 1935.

CARL STARKER, *Oregon*

■ Iris doings in my locality have been rather limited. We had the pleasure last spring of having Mr. Robert Schreiner as our

house guest for several days. It was at the height of the blooming season of the tall bearded irises. We took him to visit the Weed Gardens at Beaverton, and the Cooley Gardens at Silverton, and the Oregon Bulb Farms at Estocada, Oregon. We found at both Weed's and Cooley's many of the newer introductions blooming in very fine shape. At the Oregon Bulb Farms we saw a large planting of bulbous irises—English and Spanish in particular.

In our own garden we have been very happy to have bloomed *Iris alata* again—the bulbs having recovered from the hard frost of the previous winter. At the present date, February 16, we have a fine lot of *Iris* *sind-pers* and *Persica* in full bloom, and *Reticulatas* of various types showing color, but not yet open. *I. tuberosa* also shows buds.

WILLIAM MILES, *Canada*, 1934

■ Once again the iris has proven itself the flower par excellence for Canadian conditions. One can hardly imagine more calamitous weather than prevails from the iris blooming season of 1933. A terrible drought which lasted until late fall, a terribly severe winter during which record low temperatures were reached, and a late spring followed by unseasonable very hot weather—these were the conditions which were the despair of the general horticulturist. Roses died by thousands, even the supposedly iron-clad climbers being killed to the ground. Apple trees, fifty years of age, passed out by the hundred, and among the shrubs and herbaceous plants serious damage was done. But the irises came through with flying colors, practically no harm being done except in the case of a few species which are tender under normal conditions. The Himalayan *Evansia*, *Milesii*, disappeared without trace. *I. foetidissima*, except in the woods where it belongs, suffered severely. *Sintenisii*, an evergreen species which, according to the rules, should be tender, was badly seared but has staged a complete recovery. The *Regelio-cyclus* varieties never were better, and Sass's new *Pogoregelio-cyclus* hybrids lived through and have made splendid growth. Bulbous species of the *reticulata* and *Juno* sections (at any rate those of them that we grow) proved themselves of absolute hardiness, whereas many daffodils failed entirely, much to the chagrin of a number of budding narcissus fans in this section—your humble servant included.

Bucharica surpassed itself this year, and we are saying that here is one of the finest irises for the rockery. *I. sindjarensis* and its much more showy child, *Sindja-reichii*, came across with some fine flowers. Perhaps it is to the baking summer of 1933 that we must attribute these successes. We find it difficult to get much interest in the less spectacular species, but things are improving all the time, and every now and then what a fanning bee takes place!

It is indeed a pleasure to report that the display garden at Simcoe is being carried on since Mr. Groff's death by his nephew, Mr. J. G. Trafford, in a most efficient way. It was my great privilege to spend practically the entire blooming season there, continuing Mr. Groff's hybridizing work and making selections from his many seedlings.

A large, well branched soft yellow, quite unlike anything else we have seen, is to be called H. H. Groff, and to a splendid former Dominion type of a deep amethyst self-color, Sir F. Banting has graciously permitted us to give his name. There are others, too, but more of them when they are definitely named. Frankly, I don't think that our representation of American varieties is as good as that of the European, and we wish to assure anyone who would care to send their varieties for display that they will receive the very best of care. A trial at Simcoe or at the Trial Gardens at MacDonald College or at Saskatoon would be a good hardiness test. Baldwin strikes us as being one of the best of all irises. Rameses too, and also Wambliska, Waconda, and Spokane show up under our conditions wonderfully well. We like Aubade, Nepenthe and Selene, but the latter pinches a little in the fall with us. Bronze Beacon found many admirers, as also did Ethel Peckham, which came quite early. But, as I say, we are not up to the minute with our American varieties. Gudrun goes to the top in our esteem as a white. If Easter Morn or Venus de Milo are better, they must be superb. Eclador does remarkably well, and is the best late yellow we have at Simcoe. Directeur Pinel is a darker, taller Galant, with a little less red in it. A large clump of Jean Cayeux created a sensation early in the season, and if first impressions are confirmed we have here a worthwhile addition to the collection. The varieties from France which seem to be wearing best are Depute Nomblot, Anne Marie Cayeux, Helios, President Pilkington, Evolution and the reliable standby, Pluie d'Or. In the Display Garden there is a row of the latter variety

which must contain fifteen hundred plants! It made a glorious showing this year.

Iris shows are quite the thing among the small local units of the Ontario Horticulture Association, and it is gratifying to note the improvement from year to year in quality of bloom exhibited. Wherever I am asked to judge, I find that a quiet talk with the Secretary regarding varieties invariably produces results at the next show, and a little distribution of surplus plants of good kinds from the home garden is a wonderful stimulus, too.

To sum up the iris situation in Canada, there is a wide and ever spreading interest in the genus, with many first-class enthusiasts dotted across the country and hundreds of potential enthusiasts coming along as fast as conditions will permit.

MRS. JAMES R. BACHMAN, *Georgia*

■ Our section has suffered in an intense degree from the depression which has swept the nation and its devastating influence is apparent in cultural as well as commercial affairs.

The development of iris, in my territory, is largely in the hands of amateurs. There are few commercial hybridizers. Lately Missouri producers have been particularly active in promoting sales and their varieties are being tried out in numerous localities.

Japanese and Siberian irises are being more generally used in gardens. Fall blooming irises are of much interest now and being experimented with by many. Reports from several parts of this section indicate that these should be more liberally planted in the South. A new method to secure fall bloom is being tried out here for the third time—just before an iris that is suspected of having fall blooming tendencies sends up bud stalks in the Spring, the entire clump is removed from the ground and then replanted as a clump. This retards the blooming time, and if the clump is given careful attention during the Summer, vigorous blooms result in the Fall. This has proved successful with *Crimson King*, *King Karl*, *Chalice* and others.

I have been trying to stimulate interest by giving a prize for the list of fifty best named varieties grown in the contestants garden. The prize is a three-year membership in American Iris Society. I am giving this prize through the Garden Clubs of Georgia and the winner is announced at the annual meeting in the Spring. The lists are passed on by A.I.S. accredited judges.

The competition is keen. Last year it was won by Mrs. Fred Cresswell, of Atlanta, a great lover and successful grower of iris. The competitors were from all parts of Georgia. I am giving this prize again this year.

Another prize is given through the Georgia Federation of Woman's Clubs and is for a one year's membership in the American Iris Society. It was won last year by Mrs. Chester Martin, Hapeville, Ga., in the Fifth District. These papers showed time of blooming, color, height, substance, etc., and proved that many gardeners are convinced of the worth of kept records of their triumphs.

Last year all of our accredited judges visited, in a body, the gardens of Mr. Sam L. Graham in Rome, Ga., and judged his gardens. Here we found the newest introductions growing in harmonious company with the best of the old favorites. Mr. Graham's own seedlings were certainly worthy of comment and rating.

You will note quite a few new members in 1934 and will, I believe, find that the Nashville convention will encourage others to join.

Visits of Mrs. Peckham, Messrs. Sturtevant and Wister, and others, to this section during the year have proved inspirations.

The Farr Memorial Library was enjoyed by iris lovers here in Atlanta and vicinity.

REPORT OF ANNUAL MEETING, 1934

EUCLID SNOW, *Illinois*

■ Nineteen thirty-four found the clan of Iris lovers gathered at Lincoln, Nebraska, for their annual conclave, where discussions of Iris Society work and more discussion of the many and varied types of Irises now coming into general use in our gardens were enjoyed by representatives from 12 states.

Prominent among these visitors from a distance were Mr. John C. Wister, Penn.; Lee R. Bonnewitz, Ohio; Robert Schreiner, Minn.; Mrs. G. R. Marriage and Mrs. E. L. Kernochan, Colo.; Mrs. Jas. R. Bachman, Ga.; Euclid Snow, Ill.; Mrs. Harold W. Roe, Okla.; the well known Messrs. Andrews and Long, Colo.; D. S. Hall, Ill.; A. M. Brand, Minn.; each bringing bits of news from Iris growers from their home sections.

No better selection of a place of meeting could have been made than Lincoln, as Nebraska is the home state for many of our greatest Iris growers and visitors were delighted at this opportunity of visiting some of the finest Iris plantings in the country. The mention of the names of Hans and Jacob Sass always brings to mind the best of American Iris introductions, and this meeting was made memorable by a visit to their gardens, after the business sessions were adjourned.

About 300 people attended the annual dinner, when Dr. Harry H. Everett, to whose untiring efforts the success of this meeting was largely due, presided. Ex-Gov. Sam R. McKelvie, so well known and loved by the Nebraskans present that he called them all by their first names in asking for their remarks, served as toastmaster.

Mr. John C. Wister, President of the American Iris Society, spoke informally of organization work and the general interest in gardening. Hans Sass told of his and his brother's work in Iris breeding that has now world wide recognition. Jacob and Henry Sass also talked of their hybridizing and growing methods.

Mr. Lee R. Bonnewitz, long known among Iris fanciers, gave an intimate history of his work; he was followed by Robert Schreiner and Euclid Snow, Regional Vice-Presidents, who spoke briefly of their sections.

Mr. A. M. Brand, America's foremost peony hybridizer, who has become greatly interested in Iris growing in recent years, was an honored guest. He was invited to tell something of his interesting work with peonies and to tell of their use in particular types of planting.

The meeting was brought to a close with Mrs. A. C. Nelson, President of the Lincoln Garden Club, speaking for her members who had sponsored the beautiful show, staged in co-operation with the American Iris Society. It would be impossible to say too much in praise of this band of gardeners who, working under the leadership of Mrs. Nelson and Dr. Everett, had staged a flower show in the University Coliseum which was breath-taking in its loveliness. When one remembered that Nebraska gardens had had only three inches of rain for six months, the number and quality of blooms were truly amazing.

A year ago, when the Society announced their intention of holding the 1934 meeting in Lincoln, Dr. Everett and Mrs. Nelson

immediately set to work to stage this marvelous show, and, in spite of every difficulty of climatic conditions, when the weather-man was so ungracious as to force a change of date, even making it necessary to hold many of the bloom stalks in cold storage for days, the Lincoln Garden Club women under such able leadership staged this display of such sheer beauty as to amaze all visitors. It was entirely the work of amateurs, though a few of the local florists generously came forward with displays of bloom to add to the general effect of color. The Iris section featured specimen bloom, showing some interesting new seedlings among the many named varieties; there were also examples of Irises in arrangements for decoration in the home, as well as specimen Iris plantings. The winners in various classes were generously awarded and the list is too long to embody here. The winners in the sweepstakes were as follows:

General amateur Iris display, Mr. and Mrs. Jack Colin, Lincoln, silver medal from American Iris Society.

General commercial Iris display, Jacob Sass, Washington, Neb., bronze medal, American Iris Society.

Educational and arrangement display featuring Iris, Gordon Wyland and Bob Danielson, Lincoln, certificate of merit from Lincoln club.

Best iris stalk, Hans Sass, "Snow King," bronze medal from Dr. H. H. Everett.

Best peony bloom, J. W. Bernstein, "Le Cygne," bronze medal from Dr. Everett.

Best ten stem iris entry, Jacob Sass, "Wambliska," medal from Lincoln club.

A most delightful feature of the show was the display of the new Iris "Lincoln," which rated a table all its own. This novelty is a seedling from the gardens of Hans Sass, chosen by him to bear the name of Lincoln to honor the city whose gardeners have done so much to popularize this great flower. At the opening of the show, Mr. Sass presented the Iris to Mrs. Nelson with suitable ceremony. This Iris is large, well branched and uniform, with beautiful buff-yellow standards and falls a rich velvety maroon, making a very striking flower.

In addition to the wealth of flower material from Lincoln and other sections of Nebraska, there were exhibits from Iowa, Kansas, Missouri, Colorado and other distant states. Lincoln citizens to

the number of 4,000 visited the show on the first afternoon, so great is their interest in growing Irises and other fine garden plants.

The visits to gardens of Lincoln were greatly enjoyed by all Iris lovers and especial interest was shown in the charming garden of Dr. and Mrs. Harry H. Everett. After studying the gardens and flower show at Lincoln, the visitors were taken to see the great Iris plantings of Hans Sass at Washington, Neb., and Jacob Sass at Elkhorn, where many choice seedlings, still under number, were standing serene and untouched by the scorching winds of the prairie section. We are promised that many of these will be named and placed on the market to be available to all Iris "fans" at no distant date.

The inspiration to grow better Irises, to do justice to gardens by using the best types available, came to each and every person who journeyed to Lincoln. Interchange of experiences with various types, discussions of the many Iris species which can be grown to the betterment of all gardens, were going on constantly among the members of the group. Mrs. G. R. Marriage, a horticulturist of great experience, and Mrs. E. L. Kernochan, whose chief interest centers in the unusual and rarer species, added much to the meeting by their relation of their working plans among Iris in their Colorado gardens.

So much enjoyment of the Lincoln meeting served to arouse the greatest interest in the announcement that the 1935 meeting will be held in Nashville, Tennessee, and the 1936 in Hartford, Conn.

JOTTINGS AT THE LINCOLN MEETING, AMERICAN IRIS SOCIETY

■ What did we see at the Lincoln meeting? Unusual weather and then more unusual weather!

Ten years of growing Irises in Colorado where artificial watering is a *sine qua non* made drought in Nebraska seem less extreme than the need for meeting it.

This season's severe test gave the few Irises tolerant of adverse conditions and of sufficient substance to stand up in dry hot weather a chance to show their stuff. One wonders if these qualities are inherent in the dark blues, for Black Douglas and Blue Velvet showed a calm cool superiority while others were "all hot and bothered."

The evergreen walls of sheared red cedar hedge enclosing Dr. Everett's garden gave the groups of Irises in bloom an appearance of serene and happy security. The firm texture and even color of this background is the velvet in the jeweler's showcase as well as acceptable protection from searing wind. Pink Opal and a handsome sister seedling were a really clear pink in one corner of this garden.

Speaking of hedges, in most regions there is at least one native evergreen or, failing a native, one that is hardy and hedgeable. Juniper, Spruce, Pine—any of which would make a successful sheared hedge, twice blessed—for protection and for beauty.

Since the Iris Show in the Lincoln Auditorium has been no doubt covered by a really capable reporter, let's go outdoors:

An interesting day in the Sass Brothers' gardens was a highlight. Jake's family should be as much a source of pride as his Irises. Hans has some promising Irises, especially a white that more will be heard from. The Sass Brothers' work is excellent. They have enlarged the Iris horizon and made real contributions in several directions. The Clara Noyes series has brought us splendid new breaks in color and there are promising things ahead in the near future in pinks and whites. After all, getting the slant of several other enthusiasts on Irises is much of the fun, so that the much-bedeviled drought didn't make a dent in the interest of the meeting.

Here was a poser asked me at the Lincoln meeting: "What do you consider *the* best Iris?" Eclador? New Albion? Shirvan? Red Dominion? Sierra Blue? The best of each color—possibly—but the best Iris?—I pass!

Mrs. G. R. Marriage,
Colorado Springs.

REPORT OF THE IRIS SHOWS HELD IN 1934

MRS. W. L. KARCHER, *Ill.*, *Chairman*

BALA CYNWYD, PA.

The Bala Cynwyd Garden Club held a very attractive exhibition with a good showing of iris of splendid quality. A number of new exhibitors were in evidence this year and much interest is being shown. The Sweepstakes went to Mrs. Arthur Goldsmith, Wynnewood, Pa.; the A. I. S. membership to Miss Katherine Tutcher, Cynwyd, Pa. Miss Jane Magee, Chairman.



CHULA VISTA, CALIF.

The first iris show of the season was held in Chula Vista, April 7-8. Commander Monroe, who acted as Chairman, reports very unsatisfactory growing conditions for the southern part of the state, with blasted blooms and stems 6 to 12 inches below normal due no doubt to a mild dry winter. As the show came between the blooming seasons of the early varieties and the midseason sorts, the display was rather disappointing. The Sweepstakes medal was awarded to Mrs. B. D. Miller and the A. I. S. membership to Mrs. D. Holmes, both of Chula Vista.



DULUTH, MINN.

Mrs. Conrad Schlamann, Chairman of the Sixth Annual Iris Show of Duluth, reports a successful, well-patronized show in spite of the fact that most of the blooms were "second" flowers. The society felt much handicapped in not being able to have an earlier date, but that would have conflicted with the National Peony Show held in St. Paul. The Silver Medal was awarded to Mrs. J. B. Finch, the Bronze Medal to Arnold Jacobson, the A. I. S. Membership to Mrs. T. J. Joyce.



FREEPORT, ILL.

The Freeport Garden Clubs staged their thirteenth annual Iris Show June 2-3. If I tell the gospel truth I must say that this

show was a "sure 'nuff thirteener." Nearly all of the Iris that were in the mood to bloom had completed their job before Decoration Day, so that practically all of the flowers exhibited had been in cold storage a week to ten days before the show date. I can speak from personal experience when I tell you that this show almost wrecked the chairman.

The Sweepstakes Silver Medal was won by Mrs. L. G. Younglove. The Commercial Bronze Medal was not awarded. The best specimen in the show was a splendid stalk of Morning Splendor with eight open flowers and six buds, exhibited by Mrs. L. P. Lawrence.



LINCOLN, NEB.

The National Show of The American Iris Society was held in the University Coliseum, Lincoln, Nebraska, May 19-20.

This was the most difficult season we could ever possibly encounter. There was no rain after April 2, although there seemed to be always the promise of rain. It never came, however, and we were swept with fierce winds and dust storms one after another, until it seemed as if we could not possibly have any flowers. But everyone doubled his energy and by concentrated effort we really displayed more iris than ever of very good quality, but naturally not so large and lovely as we could show in a favorable season.

We had one hundred thirty-four exhibiting classes (including other garden flowers)—seventy-eight for iris, of which forty-four were for amateurs, and thirty-four for commercial growers.

There were one thousand and three competitive entries in the entire show, five hundred twenty-nine of iris among them. This compares well with last year, when there were six hundred fifty-seven entries in the show, of which three hundred twenty-six were of iris.

There were one hundred sixty-five entrants of whom one hundred ten were prize winners. Four hundred five prizes and ribbons were awarded, beside a number of special ribbon awards.

Our attendance was splendid, many coming from various parts of the United States. We had over 1,500 registered from other states and we are sure there were many more who did not register. They came in large groups and could not always be induced to wait long enough to register. Our banquet was held in the Corn-

husker Hotel, one hundred and fifty attending—a very lovely affair with beautifully decorated tables and nice service. Our former Governor McKelvie was toastmaster. Among those giving responses were J. C. Wister, Mr. Snow from Illinois, Mrs. Bachman from Atlanta, Robert Schreiner, Mr. A. M. Brand and Lee Bonnewitz.

I believe you will hear very favorable reports from those who were here as to the beauties of our show and the hospitality shown them.

The background of our display was made up of hundreds of cedar trees with about fifty gardens made against them (a number of them iris gardens). The corridors were also lined with gardens this year too. The stage was one large garden with comfortable seats, making our hospitality room and a restful spot to sit and view the whole show. Against the stage on the main floor were gardens arranged to appear as the lower terrace of the stage garden. I am sorry you are not here to see it.

The A. I. S. Silver Medal was won by Mr. and Mrs. Jack Colin, the A. I. S. Bronze Medal by Jacob Sass, the A. I. S. membership by W. W. Yocum, Lincoln, Neb. The Garden Club of Illinois Medal was won by Jacob Sass. This was promised us by Mrs. Dynes, and printed in our schedule before your word came about it, but you said you stay by it.

MRS. A. C. NELSON.



LOCKPORT, N. Y.

The Lockport Gardeners and the Beautification Committee of the Board of Commerce, after adopting Iris as the official flower of Lockport, exhibited for the first time in cooperation with the A. I. S. in an Iris Show. The exhibition was well attended and, despite the usual 1934 bad weather, a very creditable showing of Iris bloom was made. There were about 125 exhibitors and about 6,000 visitors enjoyed the beautiful show. The Sweeptakes Medal was awarded to Dr. E. N. S. Ringueberg and the A. I. S. membership to Mrs. Montford C. Holley.



NEW ROCHELLE, N. Y.

Mrs. Harold G. Loughran, acting as chairman of the Iris Show,

held June 6-7, as a unit of the Community Flower Show sponsored by the New Rochelle Women's Club, reported a very good showing of Irises, considering the unseasonable growing conditions. The Sweepstakes Medal was won by Mrs. Ray Whitman and the A. I. S. membership by Mrs. A. G. Bixler.



NIAGARA FALLS, N. Y.

The Niagara Falls Garden Club held its second annual Iris Show in cooperation with the A. I. S. Here, as in many other sections of the country, it was necessary to move the dates forward a week. However, nothing daunted, they put on a beautiful exhibition under the worst possible weather conditions. The Sweepstakes Medal went to Miss H. May Brown. Mrs. F. L. Koethen, Chairman.



ST. JOSEPH, MO.

From all reports, the 1934 Iris Show at St. Joseph was one of the best if not the very best show of the season. Mr. Carl Schirmer, who has been active in all of their exhibitions, was greatly pleased with the results of their labors. The quality of the blooms was splendid, with all points up to the standard in that section of the country. There were many new exhibitors, a good attendance of interested visitors and a wealth of good blooms to admire. The Sweepstakes Silver Medal was awarded to Mr. Schirmer, the Bronze Medal to Mr. R. E. Borene, the A. I. S. membership to Mrs. Frank G. Conner, all of St. Joseph.



SAN DIEGO, CALIF.

The Iris Show was held here April 14-15. Mrs. Paul V. Tuttle, who has always been the moving spirit back of all Iris activities in San Diego, was the chairman. As the exhibition did not tally with the high standard of excellence required in San Diego, the Sweepstakes Medal was not awarded.



Although requests for cooperation were made by San Bernardino and Montclair, N. J., and although both were listed and did not send notification of withdrawal, no reports have been received.

THE AMERICAN IRIS SOCIETY HONORS MISS GRACE STURTEVANT

■ Miss Grace Sturtevant of Wellesley Hills, Massachusetts, was presented with the Gold Medal of the American Iris Society on January 30th, by the Directors of the Society, in recognition of her service to Iris culture and particularly for the introduction of many of the best Irises now being grown in the Iris world.

Miss Sturtevant is acknowledged as America's earliest Iris hybridizer. Her first crossings were made in 1910. Princess Beatrice × Aurea crossing in this year produced Afterglow, which received a medal award at Boston in 1915. Caterina × Mrs. George Darwin crossing in 1912 produced Queen Caterina, which was considered a most outstanding introduction at that time and in 1935 this variety is still included in our finest collections. Miss Sturtevant's first catalogue listing her own introductions was issued in 1917 and in succeeding years new varieties of many colors were introduced. A few of her most outstanding varieties are:

Avalon	Motif
Ambrosia	Opal Dawn
Airy Dream	Pink Jadu
Bonnie Blue	Reverie
Camelaird	Snow White
Glowing Embers	True Charm
Gold Imperial	True Delight
Good Cheer	Queen Caterina.

The Gold Medal is the highest award of the American Iris Society and the Iris growers in America will certainly approve of the award to Miss Sturtevant.

REPORT OF THE COMMITTEE ON AWARDS

DONALD B. MILLIKEN, *Compiler*

■ There are at the present time 146 accredited judges of the American Iris Society. Of this number, 50 judges sent in 1,606 ratings. Last year there were 110 judges and 64 sent in ratings.

The lack of participation this year can be accounted for in part by disastrous effects of the drought in many parts of the country. Several judges reported that, because of the unusually poor season in their district, they did not consider it fair to do any rating whatsoever.

There was unfortunate delay in sending out the blanks this year, with the result that many judges did not receive their instructions until the season was nearly over. Perhaps this explains why nearly half the ratings received were on varieties not eligible, according to the instructions sent out this spring. According to the 1934 policy, "Judges may send in ratings on Irises which are not yet in commerce and on Irises introduced during the current year or during the two previous years." This means that an Iris introduced prior to 1932 is not eligible for a rating.

The method of tabulating the results has been changed this year so that no numerical averages are published. Instead, the numerical averages are translated into symbol letters as follows: 90 or over, A; 85 to 89, inclusive, B; 80 to 84, inclusive, C; 70 to 79, inclusive, D. No rating of a variety is published unless it has been rated by at least five judges.

Following these instructions of the Board of Directors, the committee on tabulation has found it possible to publish the ratings of only 45 varieties. On these varieties there were 301 ratings, or an average of 6.4 ratings per variety. This means that only 18.6% of the 1,606 ratings sent in have been used.

Believing that there is a great deal of interest shown in the comments made by the judges on the various varieties, comments on irises receiving 3 or 4 ratings and on irises which have been in commerce more than three years have been included.

It is of interest to note that, of the 45 varieties whose ratings are published, 14 are in the A group, 25 in the B group and 6, the C group. Eight of the 45 varieties are new seedlings that have not

been introduced, nine are being introduced this year, eleven were introduced last year, and seventeen in 1932. All of the Iris in the C group are of 1932 introduction. One-half of the A group are new irises (1934 introductions and un-introduced seedlings).

When it comes to recommendations for awards, not a single variety received the seven required recommendations for an Award of Merit. Jeb Stuart was the highest, with five recommendations.

Seven varieties received the necessary five recommendations for Honorable Mention. Five of these seven varieties are of New England origin.

HONORABLE MENTIONS

- Eros (Mead-Riedel)
- Gold Foam (Nesmith)
- Good Cheer (Sturtevant)
- Maluska (Nesmith)
- Monemoy (McKee)
- Rosy Wings (Gage)
- Shining Waters (Essig)

1934 RATINGS

	<i>H.M.</i>	<i>A.M.</i>	<i>No. of judges</i>	<i>1934 rating</i>
Adobe (Williamson, 1932).....	1	....	6	C
Alice Horsefall (H. P. Sass, 1932).....	2	....	5	C
At Dawning (Kirkland, N.).....	3	....	5	A
Avondale (H. P. Sass, 1934).....	4	....	5	B
Aztec (Kirkland, N.).....	....	....	5	B
Beuchley's Giant (Beuchley, 1932)....	1	....	8	B
Blue Gown (Essig, 1932).....	1	....	6	C
Blue Monarch (J. Sass, 1933).....	....	....	7	B
Burning Bronze (Ayres, 1934).....	3	....	9	B
California Gold (Mitchell, 1933).....	2	....	8	B
Cheerio (Ayres, 1934).....	2	....	6	B
Copper Luster (Kirkland, 1934).....	3	....	5	A
Coralie (Ayres, 1932).....	....	....	8	B
Eclador (Cayeux, 1932).....	....	....	5	A
El Tovar (H. P. Sass, 1932).....	1	2	7	B
Eros (Mead-Riedel, 1934).....	6	....	9	A
Ethel Peckham (Williamson, 1932)....	....	1	6	A
Fearless (Kirkland, N.).....	....	....	5	B

	<i>H.M.</i>	<i>A.M.</i>	<i>No. of judges</i>	<i>1934 rating</i>
Golden Helmet (J. Sass, 1933).....	3	....	10	B
Golden Light (H. P. Sass, 1933).....	1	....	5	B
Gold Foam (Nesmith, 1933).....	5	....	9	B
Good Cheer (Sturtevant, N.).....	5	....	7	B
Hearthstone Copper (Daub, 1932).....	1	....	5	C
Jeb Stuart (Washington, 1932).....	2	5	10	B
Jerry (Japham, 1933).....	1	....	6	B
Joycette (J. Sass, 1932).....	....	2	8	B
King Philip (Fewkes, 1932).....	3	....	5	B
Maluska (Nesmith, 1933).....	5	1	9	B
Maya (Washington, N.).....	4	....	7	A
Mellow Moon (Washington, N.).....	1	—	6	B
Missouri (Grinter, 1933).....	1	....	7	A
Monomoy (McKee, N.).....	5	....	5	A
No-we-ta (H. P. Sass, 1932).....	....	....	5	C
Parthenon (Connell, 1934).....	4	....	8	A
Pink Opal (J. Sass, 1934).....	....	....	8	B
Rosy Wings (Gage, N.).....	6	....	6	A
Royal Beauty (McKee, 1932).....	....	....	5	B
Shining Waters (Essig, 1933).....	7	1	13	A
Sierra Blue (Essig, 1932).....	1	3	9	A
Sunol (Mitchell, 1933).....	3	....	8	B
The Black Douglas (J. Sass, 1934).....	2	....	5	B
Theodolinda (Ayres, 1932).....	1	....	5	C
Thistledown (Sturtevant, 1933).....	2	....	5	A
Trails End (Williamson, 1934).....	1	....	5	B
Valor (Nicholls, 1932).....	1	4	5	A

BEARDED IRIS COLOR CLASSIFICATION—1929

(Printed Here by Request)

	<i>Subordinate Color Tones</i>								
Color Group	<i>Blue Toned</i>	<i>Yellow Toned</i>	<i>Pink to Red Toned</i>						
Predominant	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>						
Color	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>	<i>Self Feathered Bicolor</i>
White	WW								
Symbol	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9
Blue	B 1	B 2	B 3	×	×	B 6	B 7	B 8	B 9
Red	R 1	R 2	R 3	×	×	R 6	R 7	R 8	R 9
Blend (Shot or Squalens)	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	S 9
Yellow	×	Y 2	Y 3	Y 4	Y 5	Y 6	×	Y 8	Y 9

THE NEW CLASSIFICATION FOR BEARDED IRIS REGISTRATION FOR 1934

■ This explanation is being repeated, for some breeders still make extra correspondence necessary by failing to observe the new classification, and the details of the registration rules.

The dwarf, intermediate and tall bearded types are now classified according to height, instead of the season of bloom to fix the type, but the latter for each type is to be noted by the additions of the letters EE, E, EM, M, MF, F and FF, for extra early, early, early midseason, midseason, midseason to late, late and very late to fall blooming, and breeders will therefore so indicate when applying for registration. With this the dwarf bearded section will take in all varieties of a height under 16 inches, the intermediates all varieties between 18 and 28 inches, reserving for the tall bearded all of 30 inches and over. **BESIDES THE SEASON OF BLOOM, BREEDERS WILL ALSO SUBMIT THE HEIGHT AND DESCRIBE THE FRAGRANCE**, in addition to the usual descriptive data, when applying for registrations.

WHEN SUBMITTING PARENTAGE, please give pod-parent first. If an unnamed plant indicate by a blank.

REGISTRATIONS

No person other than the originator may register a seedling unless permission in writing from the breeder to make such registration has been granted and *said* letter filed with the Chairman of the Registration Committee at the time such registration is requested.

The closing date for registrations to be received for publication in the January or Special BULLETIN following, is August 1. Any received after that date will be treated as registrations of the following year.

UNDER NO CONSIDERATION WILL REQUESTS FOR NAMES BE APPROVED OR REGISTERED, WITHOUT DETAIL DESCRIPTIONS AS TO TYPE, COLOR, SEASON OF BLOOM, HEIGHT, FRAGRANCE AND ITS QUALITY, AND PARENTAGE IF AVAILABLE, EXCEPT AS MAY BE NOTED HEREINAFTER. REGISTRANTS WILL PROVE HELPFUL TO THE SOCIETY AND ITS REGISTRAR BY SUPPLYING THE NECESSARY DATA IN FULL AT FIRST WRITING, AND TO SUBMIT ALTERNATIVE NAMES IN CASE THE PREFERRED ONE IS NOT AVAILABLE.

IT IS ALSO TO BE UNDERSTOOD that registration or approval of a variety is made subject to the contingency of an older variety of the same or closely similar name coming to light soon after the current registration or approval, in which case a new approvable name must be submitted, when requested.

ADDITIONS TO LIST OF BREEDERS AND INTRODUCERS

- Ayars-C.—Mr. Chas. E. Ayars, 217 Maple Ave., Takoma Park, Md.
Brehm—Mr. and Mrs. George O. Brehm, Seattle, Wash.
Brown—Dr. G. Percy Brown, Barre, Mass.
Brown-E. H.—Mr. E. H. Brown, Manton, Mich.
Burt.—Mr. Frank Burton, The Barley House, Hildenborough, Kent, Eng. (new address).
Burtner—Mr. Roy H. Burtner, 2223 Douglas, N. E., Washington, D. C.
Dan.-Adams—Mr. H. Lee Danenhauer (breeder), May's Landing, N. J., and Mr. J. M. R. Adams (selector), 230 Spruce Ave., Takoma Park, Md.
Dins.—Mr. John Edward Dinsmore, ———, England.
Douglas-G.—Mr. Geddes Douglas, Nashville, Tenn.
Griffiths-D.—Dr. David Griffiths, Senior Horticulturist, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C.
Hellings—Mr. F. Wynn Hellings, 12 Upper Road, Kingston Hill, Surrey, England.
Hollerith—Miss Virginia Hollerith, 1617 29th St., N. W., Washington, D. C.
Kirk.-McDade—Dr. J. H. Kirkland (breeder), Nashville, Tenn., and Mr. Clint McDade (selector), Chattanooga, Tenn.
Loth.-Hunt—Mrs. L. R. Lothrop (breeder), San Bernardino, Cal., and Mr. Frank Hunt (selector), San Philipe, Cal.
Loth.-Monroe—Mrs. L. R. Lothrop (breeder), San Bernardino, Cal., and Commander John A. Monroe (selector), R. F. D., 4th Ave., Chula Vista, Cal.
Mikle-McDade—Mr. Roy Mikle (breeder), Hillcrest Roseries, Box 228, Progress, Pa., and Mr. Clint McDade (selector), Chattanooga, Tenn.
Morse—Mr. Wm. E. Morse, 413 Sturgis Ave., Sturgis, Mich.
Smith—U. G.—Mrs. U. G. Smith, Gresham, Ore.
Soel.—Mr. George W. G. Soellner, 3436 17th St., N. W., Washington, D. C.
Thole—Thole's Gardens, 2754 45th Ave., S. W., Seattle, Wash.
West—Dr. W. A. West, ———, England.
Wiesner—Mr. Joseph F. Wiesner, 7435 Warner Ave., St. Louis, Mo.
Williams—T. A.—Mr. Thos. A. Williams, Nashville, Tenn.

- ABUNDANCE TB-M-B3D (Dan. N.); (JEANNE D'ARC x); □.
- ACCENTUE' TB-E-B3D (Dan. N.); (SOUV. DE MME. GAUDICHAU x **trojana**); □.
- ADAGIO IB-M-R7L (Gers. N.); (CH'ENYAUN x ODAROLC); slightly □.
- ADMIRABLE TB-M-R1M (Dan. N.); (DREAM x NAIAD ATLANTA); □.
- ADONAIS TB-M-S7M (Spender N.); □.
- ADORABLE IB-M-S3L (Gers. N.); (YVONNE PELLETIER x CH'ENYAUN); table iris.
- AETHRA Sib-F-B3M rev (Gers. N.); (PERRY BLUE x BLUE KING).
- A. H. NICHOLLS Laev-W1 (Nic. A. H., coll. Ala. 1934); Nic.-Jr. 1934.
- AHNIGHTO TB-EM-WW (Donahue N.); (MOONLIGHT x); very □.
- AIRY SPIRIT IB-E-W2L (Dan. N.); (MME. BAZES x); □.
- ALASTOR TB-M-S7D (Spender N.); □.
- ALPHA MAJOR TB-E-B3M (Dan. N.); (MOLIERE x MAGNIFICA).
- AMABILITA TB-M-S8L (Gers. N.); (CAROLINE E. STRINGER x CHASSEUR); locust blossom scent.
- AMANTE TB-E-S9D (Dan. N.); (DEJAZET x SOUV. DE MME. GAUDICHAU); □.
- AMARILLITA TB-M-Y6M rev. (Gers. N.); (STEEPWAY x SHEKINAH); locust blossom scent.
- AMICO IB-M-R3D (Dan. N.); (DEJAZET x SOUV. DE MME. GAUDICHAU); □.
- ANACONDA TB-M-S4M (Mit. N.); (seedling 9-24-1 x KING MIDAS).
- ANAKIM TB-M-B7L (Klein. 1934); Cooley 1934; (SOUV. DE LOETITIA MICHAUD x BRUNO); □.
- ANDASTE TB-M-S7M (Gers. N.); (ZOUAVE x ARGENTINA); locust blossom scent.
- ANDEREYA Sib-FF-B7D (Gers. N.); (PERRY BLUE x BLUE KING).
- ANGELINE TB-M-R3M (Dan. N.); (ROTORUA x); □.
- ANGELUS TB-M-W1 (Dan. N.); (MIDWEST x); □.
- ANGKHOR VAT TB-M-Y4L (Nic. N.); (KASHMIR WHITE x DOMINION); sweet locust fragrance.
- ANGLO-SAXON TB-M-B9M (Dan. N.); A. I. S. Bull. 50. Jan. 1934, 71; (SOUV. DE MME. GAUDICHAU x LENT A. WILLIAMSON); □.
- ANITA MARIE TB-M-R7L (Gers. N.); (PIONEER x APHRODITE).
- ANN STODDER IB-E-B1L (Donahue N.); (SAPPHID x); quite □.
- ANOTHER DAY TMB-EE-F-W4L (White-C. G. N.); (PURISSIMA x **susiana**); pleasing □.
- ANTIQUÉ VELVET IB-M-S9D (Dan. N.); (IRIS KING x LENT A. WILLIAMSON); □.
- ANTWERP BLUE IB-EM-B9M (Dan. N.); (AZURE x SHEKINAH); □.
- AORANGI Sib-F-WW (Gers. N.); (BLUE KING x PERRY BLUE).
- APPLE BLUSH TB-F-R7L (Dan. N.); (HER MAJESTY x); □.
- APRICOT DAWN TB-MF-S6M (Dan. N.); (NAIAD ATLANTA x GOBELIN RED); □.
- APRICOT QUEEN Fulv-M-S4M (Wayman N.).
- ARAMINTA HOWELL TB-F-S8L (Gers. N.); (CAROLINE E. STRINGER x CHASSEUR); sugary scent.
- ARGOSY TB-M-Y6M rev. (Gers. N.); (AUSTIN x SHEKINAH); table iris.
- ARGYLE IB-M-R3L (Dan. N.); (DREAM x NAIAD ATLANTA); □.
- ARNO IB-M-B9D (Dan. N.); (SOUV. DE MME. GAUDICHAU x CONQUISTADOR); □.

- ARTIFICER IN GOLD IB-M-Y4L (Dan. N.); (LA NEIGE x); □.
- ASPETO IB-M-B9L (Dan. N.); (POCAHONTAS x); □.
- A S T A TB-F-S9M (G e r s. N.); (A N N E B U L L E N x C H A S S E U R); slight locust blossom scent.
- AUGUSTUS CAESAR TB-M-S9D (Dan. N.); (HAMILTON x CARDINAL).
- auranitica** One-S4D (Dins. 1933, at Jab. Kulayb, in El Hauran, Syria); Gard. Ill. 56: 389, June 30, 1934.
- A U T U M N E L F IB-M-FF-W6 (Brown N.); (GERTRUDE x probably GRACCHUS); delicate pleasing scent.
- AUTUMN FROST TB-EM-FF-W4 (Schreiner 1934); Schreiner 1934; McDade 1934.
- AUTUMN GLEAM IB-M-FF-Y4M (Sass-H.P. 1934); Sass-H.P. 1934; Sass-J. 1934; Hill-H.M. 1934; (**pumila** x **mesopotamica**); slight □.
- AUTUMN H A Z E TB-E-FF-S9M (Sass-H.P. 1934); Sass-H.P. 1934; Sass-J. 1934; Hill-H.M. 1934; (out of two seedlings).
- AWOSTING Sib-EM-B9M rev. (Gers. N.); (PERRY BLUE x BLUE KING).
- AZALAIA TB-F-R3M (Gers. N.); (CHASSEUR x MRS. CUTHBERTSON); jasmine scent.
- BAGDAD FAIR TB-E-S7M (Dan. N.); (MEDRANO x); □.
- basaltica** One- (West, and Dins. from southeastern Syria (?)); The Gard. Chron. Oct. 27, 1934, 294.
- BAZRA TB-E-R3D (Dan. N.); (MAGNATE x LENT A. WILLIAMSON); □.
- BEAUJOLAIS IB-E-R3D (Dan. N.); (HER MAJESTY x M. BRUN); □.
- BEERSHEBA Spur-Y6D (Wash. N.).
- BENDIS Sib-FF-WW (Gers. N.); (BLUE KING x PERRY BLUE).
- BENGAL IB-EM-R9D (Dan. N.); (AMBIGU x); □.
- BEN LOMOND Spur-B3M (Wash. N.).
- BENVENUTO TB-M-Y6M rev. (Dan. N.); (MARY GARDEN x); □.
- B E T T Y Jap-Db1-7 (Smith-U.G. 1934); Hoodaeres 1934.
- BITTERSWEET TB- (Mur. N.); C. M., Iris Soc. (Eng.), 1934.
- BLITHE IB-M-S8L (Gers. N.); (COMMANDANT DRIANT x MME. DE SEVIGNE); table iris; fruity scent.
- BLOOD ROOT TB-FF-R9D (Dan. N.); (MEDRANO x COL. CANDELOT); □.
- BLOOD ROYAL TB-M-R9M rev. (Nic. N.); (COPPERSMITH x SIR MICHAEL); fragrance of a beehive, not unpleasant.
- BLUE ANCHOR INN TB-M-B3M (Dan. N.); (J. J. DEAN x); □.
- BLUE CHANCELLOR TB-M-B1L (Dan. N.); (MADY CARRIERE x BALLERINE); □.
- BLUE DANUBE TB-B1M (Meyer-R.H. 1934); Orp. 1934; Bronze Medal, R. H. S., 1933.
- BLUE MAGIC Hex-B1D (Wayman N.).
- BLUE MOUSE IB-F-B1L (Richer N.); slightly □; table iris.
- BLUE TRIUMPH TB-M-B1L (Grin-ter 1934); Quality 1934; (SENSATION x BLUE RIBBON).
- BOGATYR TB-M-R3D (Gers. N.); (MELA-HASKA x TENEBRAE); strong locust blossom scent.
- BOLERO TB-FF-Y6M (Gers. N.); (FLAMMENSCHWERT x CHASSEUR); locust blossom scent.
- BONSOR TB-M-B1D (Con. N.); slight □.
- BOTTICELLI TB-M-S9M (D a n. N.); (MME. CHOBAUT x); □.

- BOUNTEOUS TB-E-Y4L (Sturt. N.); ((.....; Mohr x (SHEKLNAB x JUBILEE) x (SITKA)); delicious fruity fragrance.
- BRENTWOOD TB-EM-S7D (Williams-T.A. N.); (seedling No. 503 x seedling No. 101); spicy fragrance.
- BRIDE ELECT TB-M-S6L (White-C.G. N.); (SEQUOIAH x SON ROBERT); □.
- BRILLIANTINE IB-M-R9M (Dan. N.); (MAGNATE x SOUV. DE MME. GAUDICHAU); □.
- BROWN BROTHER TB-E-S7 (Donahue N.); (BRUNO x); quite □.
- BROWN MAHOGANY TB-M-S9M (Williams-T.A. N.); (seedling No. 306 x AZTEC); new honey fragrance.
- BROWN OCTOBER TB-M-S7 (Donahue N.); (MRS. VALERIE WEST x); very □.
- BRUNHILDE TB-M-B7M (Salb. 1934); (SAN DIEGO) x (CARDINAL x deep blue seedling); □.
- BURGUNDIAN TB-E-R1D (Dan. 1927); (MAGNATE x MAGNIFICA); app. A. I. S., 1927; □.
- CAMEO BROOCH TB-M-R3L (Dan. N.); (MME. CHOBAUT x); □.
- CAMPANILE TB-M-B1M (Dan. 1927); (REGAN x SOUV. DE MME. GAUDICHAU); *Campanel*, A. I. S. Check List, 1929; □.
- CANTON D-Sib-B6L (Nic. N.); (*forrestii* x).
- CARINOSA TB-EM-R7L (Gers. N.); (GRATONE x MRS. CUTHBERTSON).
- CARITA TB-E-W4L (Gers. N.); (ANNE BULLEN x SHEKINAH); linden blossom scent.
- CATHRINE TB-F-B9M (Dan. N.); (SOUV. DE MME. GAUDICHAU x CONQUISTADOR); □.
- CEYLON IB-F-S9M (Dan. N.); (MIDWEST x DALILA); □.
- CEYLONESE IB-F-S9M (Dan. N.); (MIDWEST x DALILA); □.
- CHAGAN TB-M-R9M (Gers. N.); (MELA-HASKA x TENEBRAE); slight scent.
- CHANSON ROLAND IB-F-R7M (Dan. N.); (SWATARA x); □.
- CHAPERONE TB-F-B7M (Dan. N.); (DELICATISSIMA x DREAM); □.
- CHARLOTTE LEE TB-M-R7M (Donahue N.); (SUSAN BLISS x); A. I. S. Bull. 49: 14, 1933; grape fragrance.
- CHATEAU POLIGNAC TB-E-S9M (Dan. N.); (MADY CARRIERE x DEJAZET); app. A. I. S. 1927; □.
- CHAUCER TB-M-WW (Dan. N.); (LORELEY x); not fragrant.
- CHEER IB-M-Y4M (Loth. N.); (RAMONA x LOUDOUN) x (ANOSIA); pleasingly □.
- CHERIE TB-M-R7M (Gers. N.); (CH'ENYAUN x GOLDEN HEART); table iris; grapy scent.
- CHEVALIER DE BAYARD TB-M-R1M (Dan. N.); (MLLE. SCHWARTZ x); □.
- CHINA ROSE TB-M-S9M (Salb. 1934); (FRIEDA MOHR x ROSEWAY); □.
- CHINESE LEGEND IB-M-W8M (Dan. N.); (MME. CHOBAUT x); □.
- CHINOOK TB-M-WW (Williams-T. A. N.); (seedling No. 1105 x DESERT GOLD); pleasing cinnamon fragrance.
- CHOOOLA Hex-R7M (Wash. N.).
- CHRISTABEL TB-M-S7D (Lap. N.); (RAMESES x JERRY); pleasingly □.
- CHRYSOPRASE TB-M-Y4M (Spender N.); (PLUIE D'OR x TALISMAN MURRELL).

- CHULA VISTA TB-M-B9M (Loth.-Monroe N.); (**mesopotamica** x ELBERON) x (BRUNO); pleasingly .
- CIRCUS DAY TB-M-W4L (Dan. N.); (SHEKINAH x CITRONELLA); .
- CLARA AYARS TB-M-S6L (Ayars-C. N.); (TUSCANY GOLD x OPHELIA); not .
- CLOS VOGET IB-M-B7D (Dan. N.); (MIDWEST x SOUV. DE MME. GAUDICHAU); .
- COLUMBIA TB-M-S7L (Dan. 1924); (MAGNATE x DOMINION); .
- COMMODORE FELLOWES TB-E-B1L (Harding N.); (seedling No. 8B x MOONLIGHT); .
- CONSTANCE SCHREINER IB-EE-FF-B3M (Mikle-McDade N.); slightly .
- COOSA Hex-R7M (Wash. N.).
- COPPER MOON TB-M-S7 (Donahue N.); (MRS. VALERIE WEST x); very .
- CORAZON TB-M-R7D (Stahl.-Wash. N.).
- CORINTHIAN IB-M-W4L (Dan. N.); (MME. CHOBAUT x); .
- COSIMO TB-F-Y6L (Dan. N.); (DALILA x MEDRANO); .
- COUNSELOR MORRIS TB-M-S9D (Dan. N.); (ROSE MADDER x CORNUAULT); most .
- CREOLE BELLE TB-M-B1D (Nic. 1934); Nic.-Jr. 1934; (ALCAZAR x REGAN) x (GERMAINE PERTHUIS); strong grape scent.
- CROWN GLORY TB-F-Y9M (Gers. N.); (FLAMMENSCHWERT x CHASSEUR); locust blossom scent.
- CROWN JEWEL TB-M-S6M (Nic. N.); (MIDGARD x JUBILEE); slightly .
- CRYSTAL BEAUTY TB-F-WW (Sass-J. N.); ; No. 32-48.
- DAMARIS Sib-F-W4L (Gers. N.); (PERRY BLUE x BLUE KING).
- DARDANELLA TB-E-B7D (Wayman N.); not .
- DARK KNIGHT TB-F-S9D (Salb. 1934); (GLOWING EMBERS x deep reddish brown seedling); .
- DAWN CHILD TB-M-S9M (Gers. N.); (MRS. CUTHBERTSON x CH'ENYAUN); slightly .
- DEAR ME TMB-M-S7M (White-C.G. N.); (SHEKINAH x RAMELDO) x (SIRONA); .
- DEBONAIR TB-R1M (Yeld N.); Gard. Chron. **95**: 411. June 16, 1934.
- DELAWARE TB-F-R3D (Dan. N.); (SOUV. DE MME. GAUDICHAU x LENT A. WILLIAMSON); .
- DELFT TB-E-B9M (Dan. N.); (CATERINA x); .
- DEWGOLD TB-M-Y4D (McKee N.); (ARGENTINA x mixed pollen); slightly .
- DIVERSE TB- (Dan. N.); (MRS. VALERIE WEST x).
- DIVERT TB-M-S9M (Loth. N.); (GOLD LACE x DEJAZET); .
- DORIC TB-F-Y5L (Dan. N.); (LA NEIGE x); app. 1927 by A. I. S.; .
- DOVER TB-F-R3D (Dan. N.); (SOUV. DE MME. GAUDICHAU x CARDINAL); A. I. S. Bull. **50**: 71. Jan. 1934; .
- DRESDEN DOLL TB-M-R1L (Dan. N.); (ROSEWAY x THELMA PERRY); .
- DRUSILLA TB-M-B7L (Dan. N.); (DELICATISSIMA x DREAM); .
- DUE WEST TMB-E-WW (White-C. G. N.); (PURISSIMA x **susiana**); pleasingly .
- EARLY MASS TMB-E-B7L (White-C.G. N.); (PURISSIMA x **susiana**); pleasingly .
- EBONY PRINCESS TB-F-B1D (Donahue N.); (SWAZI x mixed pollen); quite .
- ELEANOR OF TOLEDO TB-F-S9L

- (Dan. N.); (AMBASSADEUR x); □.
- ELERIA TB-M-S9L (Gers. N.); (MRS. CUTHBERTSON x CH'EN-YAUN); locust blossom scent.
- ELIZABETH HOWARD TB-MF-Y5M (Harding N.).
- ELIZABETH TEUBERT Spur-Y4D (Branin N.); (**monnieri** x **ochroleuca**); A. I. S. Bull. 52: 95. 1934.
- ELLA WINCHESTER TB-M-R7D (Grinter N.); not □.
- ESCALIN IB-M-W8D (Dan. N.); (MEDRANO x M. BRUN); □.
- ESTEBAN TB-M-B7D (Loth. N.); (MAUNA LOA) x (RIALGAR x MAUNA LOA); pleasingly □.
- ETHEL GUILL TB-M-S9D (Ayars-C. N.); slightly □.
- EXEMPLAR TB-F-B3D (Dan. N.); (NEPTUNE x SOUV. DE MME. GAUDICHAU); □.
- FAIR ENOUGH TMB-EE-M-B1M (White-C.G. N.); (PURISSIMA x **susiana**); pleasing scent.
- FIREFLASH TB-M-W4M (Kellogg 1934).
- FLESOLE TB-M-W8M rev. (Dan. N.); (LADY BYNG x VALERY MAYET); □.
- FLEURISSANT TB-M-B7L (Dan. N.); (ALBERT VICTOR x PROSPER LAUGIER); □.
- FLORIAD TB-F-Y9D (Dan. N.); (HIAWATHA x); □.
- FOREST NAIAD TB-EM-S1L (Sturt. N.); (SINDJKHA x GRACE STURTEVANT) x (H 2-3); *Naiad*.
- FORLANA TB-MF-S9D (Dan. N.); (MME. CHOBAUT x); □.
- FRANCESCA TB-M-S7M (Douglas-G. N.); slightly □.
- FRANKLIN B. MEAD TB-M-W2 (Mead-Riedel N.); formerly *White Nile*; A. I. S. Bull. Jan. 1933.
- FROST FAIRY TB-M-B1L (Con. N.); □.
- FUJISAN Jap-Dbl-5 (Barber 1934); Hoodacres 1934.
- GARDEN RUBY TB-EM-R1D (Kirk. N.); (ROB ROY x).
- GAULT TB-F-R3D (Dan. N.); (PROSPER LAUGIER x SOUV. DE MME. GAUDICHAU); □.
- GAVROCHE IB-F-W4L (Dan. N.); (MIDWEST x); A. I. S. Bull. 50: 71. Jan. 1934; □.
- GEORGE DAVIDSON TB-Y4M (Brehm 1934); Thole 1934; (MME. CHERI x BRUNO) x (BRUNO).
- GHIBERTI IB-F-W3D (Dan. N.); (ANNE LESLIE x TRISTRAM); □.
- GIFT TB-M-S9D (Loth. N.); (SINDJKHA x SOUV. DE MME. GAUDICHAU) x (MOA); pleasing scent.
- GILDED KING Dut-B3D (Griffiths-D. N.); (seedling by cross pollination of unnamed seedlings).
- GIOCONDA TB-M-R1L (Dan. N.); (MME. SCHWARTZ x); □.
- GIOTTO TB-M-S9M (Dan. N.); (ROSE MADDER x); □.
- GOBELIN RED TB-FF-R7D (Dan. 1927); (MEDRANO x M. BRUN); app. A. I. S. 1927; □.
- GOLDEN ARROW TB-Y6L (Meyer-R.H. N.); C. M., I. S. (Eng.), June 1934; Gard. Chron. 95: 411. June 16. 1934.
- GOLDEN BEAR TB-M-Y4D (Mit. N.); (seedling 9-73-1 x seedling 9-33-1).
- GOLDEN BOW IB-E-Y4D (Sass-H. P. N.); No. 1-12-31.
- GOLDEN LEGEND TB-M-Y4D (Spender N.); (PLUIE D'OR x TALISMAN MURRELL).
- GOLDEN LOTUS TB-M-Y4D (Snow N.); (Snow's white No. 101 x Williamson's yellow No. 455); slightly □.
- GOLDEN SUNSET TB-M-S4D (Parker-J.B. N.); (AFTERGLOW x ARCHEVEQUE); no fragrance.

- GOLDWING TB-M-Y4D (Nic. 1934); Nic.-Jr. 1934; (OCHRACEA x GOLD IMPERIAL) x (ALQUIPPA); no fragrance.
- GOOD CHEER TB-M-Y9M (Sturt. N.); (SHEKINAH x JUBILEE) x ("yellow Valkyrie"); faintly .
- GRASSY YELLOW IB-M-Y4L (Dan. N.); (SHEKINAH x MOA) x (ARTIFICER IN GOLD); small grassy foliage; .
- GUILDER ROSE TB-F-WW (Dan. N.); (DREAM x NAIAD ATLANTA); .
- GULNAR TB-F-S6M (Gers. N.); (FLAMMENSCHWERT x CHASSEUR); strong locust blossom scent.
- HAMILTON IB-M-B7M (Dan. N.); (LADY FOSTER x PROSPERO).
- HAPPY DAYS TB-EM-Y4M (Mit. 1934); Salb. 1934; (Seedling 9-33-1 x WM. R. DYKES).
- HARPE TH HILLS Spur-B3M (Wash. N.).
- HASSE OOBEEA SUNSET TB-M-S6M (Stahl.-Wash. N.).
- HELEN M. RIEDEL TB-M-R7M (Mead-Riedel N.); (CLARET CUP x SOLFERINO).
- HELICON Sib-M-B1M (Spender N.); (..... x EMPEROR).
- HENRY F. MICHELL TB-E-B1L (Rose. N.); A. I. S. Bull. 50: 71. Jan. 1934; *Henry F. Michell* TB (Meyer-F.B., N. Y. B. G.); highly fragrant.
- HIGH NOON TB-E-Y4L (Dan. N.); (SHEKINAH x MEDRANO); app. A. I. S. 1927; not TB-Y4M, nor introduced 1927 as in Check List, 1929; .
- HOHTIKEE Hex-WW (Wash. N.).
- HONOR BRIGHT TMB-E-WW (White-C.G. N.); (PURISSIMA x **susiana**); pleasingly .
- ILDICO TB-MF-S9L (Gers. N.); (SHEKINAH x CH'ENYAUN); slight locust blossom scent.
- IL PENSEROSA TB-MF-S7L (Gers. N.); (DULCIMER x SHEKINAH); locust blossom scent.
- IN MEMORIAM TB-Y5L (Insole N.); C. M., I. S. (Eng.) June 1934; Gard. Chron. 95: 411. June 16. 1934.
- IRIS CITY TB-M-B1D (Williams-T. A. N.); (seedling No. 1302 x seedling No. 304); No. S-42; slight carnation fragrance.
- IRIS ISLE TB-B (Dan.-Adams N.).
- ISHPANEE TB-M-Y9M (Stahl.-Wash. N.).
- ITASCA TB-M-R7D (Klein. 1934); Cooley 1934; (PIONEER x MELCHIOR); .
- JANE NEALE TB-M-S7L (Lap. N.); (MIDGARD x INEZ BRYAN); delicate scent.
- JAN VAN DEN GHENS TB-F-Y9D (Dan. N.); (NUEE D'ORAGE x); .
- JASMANIA TB-MF-Y4M (Ayres N.); (K. V. AYRES x yellow seedling); slightly .
- JAVA MAID IB-F-S9D (Dan. N.); (MME. BOULLET x); .
- JEAN, VOILÀ JEAN TB-E-R3D (Dan. 1927); (CLUNY x); *Jean Viola Jean* (Dan. 1927), A. I. S. Check List 1929; .
- JEAN LAFITTE TB-M-S7M (Stahl.-Wash. N.).
- JEFFERSON IB-E-S9M (Dan. N.); (DEJAZET x QUEEN CATERINA); .
- JOLLY ROGER TB-M-B1D (Nic. 1934); Nic.-Jr. 1934; (SOUV. DE MME. GAUDICHAU x ALCAZAR) x (DOMINION); strong grape fragrance.
- JOSEPH LE CONTE TB-S4M (Brehm 1934); Thole 1934.
- JUNE JEWEL TB-M-S3M (Home-wood N.); (4th generation seedling from AKSARBEN); slightly .
- KALIMERA TB-M-R7D (Dan. N.); (MEDRANO x); .

- KALINGA TB-MF-W4L (Klein. 1934); Cooley 1934; (PURISSIMA x DOLLY MADISON); □.
- KALOLA Sib-F-B3M rev. (Gers. N.); (PERRY BLUE x BLUE KING).
- KANGREY Sib-FF-B3M (Gers. N.); (BLUE KING x PERRY BLUE).
- KAROMENSIS Sib-FF-B1M (Gers. N.); (PERRY BLUE x BLUE KING).
- LADY JOAN TB-M-B7M (Dan. N.); (CONQUISTADOR x LENT A. WILLIAMSON); □.
- LADY LEAL TB-M-W9L rev. (Dan. N.); (MAUVINE x); not □.
- LADY PHYLLIS TB-B1L (Neel 1934); Orp. 1934; deliciously □.
- LA FLORELLE TB-MF-W8M (Dan. N.); (SUSAN BLISS x MOTHER OF PEARL); □.
- LALASA Sib-F-B3L (Gers. N.); (PERRY BLUE x BLUE KING).
- LALUA Sib-F-B1D (Gers. N.); (BLUE KING x PERRY BLUE).
- LANTERN IB-M-Y9D (Dan. N.); (NUEE D'ORAGE x); □.
- LAURATE TB-FF-R3D (Dan. N.); (SOUV. DE MME. GAUDICHAU x PROSPERO); □.
- LAURIN TB-Y (Dan. N.); (LORELEY x).
- LEAL IB-M-W9M (Dan. N.); (MRS. H. DARWIN x); □.
- LENA RIVERS Jap-Sgl-1 (Barber 1934); Hoodacres 1934.
- LEONARDO TB-M-R3D (Dan. N.); (MAGNIFICA x DOMINION); □.
- LICTOR TB-M-WW (Dan. N.); (ISOLA x); □.
- LILLABELLE Sib-Vers-E-FF-B3D rev. (Williams-F.F. N.); (EMPEROR x *versicolor*).
- LILY PONS TB-M-S9M (Stahl-Wash. N.).
- LINA-MAY TB-F-S9M (Gers. N.); (APHRODITE x PIONEER); jasmine scented.
- LITTLE AMERICA TB-M-WW (Kirk. N.); (SHASTA x).
- LITTLE BO-PEEP DB-M-Y6L (Loth. N.); MME. DURRAND x JUBILEE); table iris.
- LOREL TB-F-Y9M (Dan. N.); (LORELEY x); □.
- LOST LADY TB-M-W3M (Richer N.); (NANCY ORNE x); faint locust blossom scent.
- LOUCROFT TB-F-S9D (Dan. N.); (SHERBERT x CARDINAL); □.
- LUCRE TB-M-Y4D (White-C.G. N.); (GOLD TOP) x (WM. R. DYKES x MIRASOL; seedling No. 3-D-1); □.
- LUCREZIA BORI TB-M-Y4M (McDade N.); no scent.
- LUMINOUS TB-F-S9M (Rose. N.); A. I. S. Bull. 50: 71. Jan. 1934; □.
- LYDEN IB-F-Y9D (Dan. N.); (KNYSNA x ARCHEVEQUE); □.
- MAB CHADBURN TB-Y4D (Chadburn N.); C. M., I. S. (Eng.) June 1934; Gard. Chron. 95: 411. June 16. 1934.
- MADREGAL IN MAUVE IB-FF-R1L (Dan. N.); (DELICATISSIMA x DREAM); □.
- MAGNA CHARTA IB-F-W2D (Dan. 1931); Brand 1932; (GREVIN x LA NEIGE); app. A. I. S. 1932; □.
- MAGNASON TB-M-R7L (Dan. N.); (MAGNATE x LENT A. WILLIAMSON); □.
- MAGNETAWAN TB-EM-S9M (Kirk. N.).
- MAID OF KENT TB-W8L (Baker-G.P. N.); Silver Medal, I. S. (Eng.) June 1934; Gard. Chron. 95: 411. June 16. 1934; Gard. Ill. 56: 364. June 16. 1934.
- MANDRINO TB-EM-R1M (Dan. N.); (SHEKINAH x); □.
- MANTLE O'BLUE Jap-Sgl-6 (Smith-U.G. 1934); Hoodacres 1934.
- MARIANINA IB-M-R9M (Dan. N.); (MIDWEST x ANNE LESLIE); □.

- MARTHA LE GRAND Sib-WW (Wash. N.).
- MARTIE EVEREST TB-EE-FF-B1M (Kirk.-McDade N.); good fragrance.
- MASACCIO TB-M-R9D (Dan. N.); (ROSE MADDER x); □.
- MAUVE AMPARO TB-M-R1L (Dan. N.); (SUSAN BLISS x DREAM); □.
- MAUVINA TB-R1M (Burt. N.); C. M., I. S. (Eng.) June 1934; Gard. Chron. 95: 411. June 16. 1934.
- MAUVISSIMA TB-MF-R1M (Dan. N.); (SUSAN BLISS x DELICATISSIMA); □.
- MAY SUN TB-E-Y4D (Mur. N.); Silver Medal, I. S., (Eng.) 1934; *Maygold* (Mur.); *Mayflower* (Mur.); *Maydore* (Mur.); (Moonlight x).
- MEDICI TB-F-S9D (Dan. N.); (ROSE MADDER x); □.
- MEHAMA TB-M-R7M (Klein. 1934); Cooley 1934; (MME. CECILE BOUSCANT x DOLLY MADISON).
- MELBOURNE TB-Y9M (Pilk. N.); (MENETRIER x BRUNO) x (.....); Bronze Medal, I. S. (Eng.), June 1934.
- MELLOW MOON TB-E-S4L (Stahl.-Wash. N.).
- MERRY DAY IB-M-R3D (Dan. N.); (IRIS KING x NINE WELLS); □.
- MIRADOR TB-M-Y9M (Nie. N.); (GEORGE J. TRIBOLET x COPPERSMITH); mildly □.
- MISS ARCTIC IB-M-WW (Donahue N.); (MOONLIGHT x); very □.
- MISS JOAN TB-M-R3L (Dan. N.); (PARC DE NEUILLY x); □.
- MOHRSON TMB-M-B7M (White-C. G. N.); (WM. MOHR x); grapy scent.
- MONOGRAM TB-M-B7M (Donahue N.); (IMPERATOR x mixed pollen); very □.
- MONREALE TB-M-S4M (Spender N.).
- MOON O'SILVER Jap-Dbl-1 (Smith-U.G. 1934); Hoodacres 1934.
- MOORISH PRINCE TB-MF-S9D (Gers. N.); (IMPRESSARIO x TENEBRAE); heavy sweet scent.
- MOUNTAIN SUNSET TB-FF-S9D (Klein. 1934); Cooley 1934; (OCHRACEA x MAGENTA); □.
- MOURNING CLOAK TB-M-B1D (Essig 1934); (ALCAZAR x SOUV. DE MME. GAUDICHAU) x (UNCLE REMUS x DOMINION).
- MR. KHAYYAM IB-EE-B1D (Richer N.).
- MRS. ARTHUR CHENOWETH TB-M-R7D (Dan. N.); (SOUV. DE MME. GAUDICHAU x CARDINAL).
- MRS. FRED HONEY Jap-Dbl-6 (Smith-U.G. 1934); Hoodacres 1934.
- MRS. J. LINTON ENGLE TB-F-B7L (Dan. N.); (ROTORUA x); □.
- MRS. JOHN HAWKER Jap-Dbl-5 (Smith-U. G. 1934); Hoodacres 1934.
- MRS. MARY NUGENT Spur-Y4D (Branin N.); (**monnieri** x **ochroleuca**); A. I. S. Bull. 52: 95. 1934.
- MULETA TB-M-R7D (Dan. N.); (MEDRANO x M. BRUN); □.
- MYSTERY OF NIGHT TB-M-B7D (Dan. N.); (AMBASSADEUR x SOUV. DE MME. GAUDICHAU); □.
- NADESHA TB-F-B3L (Gers. N.); (DULCIMER x SHEKINAH); locust blossom scent.
- NAIA IB-MF-S7L (Gers. N.); (SHEKINAH x FRITJOF); table iris; slight locust blossom scent.
- NATAL TB-W1 (Pilk. N.); (PURISSIMA x BRUNO); C. M., I. S. (Eng.), June 7, 1934; Gard. Ill. 56: 372. June 23. 1934.
- NAUTILUS TB-M-WW (Spender N.); (PLUIE D'OR x KING KARL).

- NEON TB-MF-Y9D (Salb. 1934); (BRUNO x deep rich red seedling); moderately □.
- NICOLE LEMOINE TB-E-WW (Harding N.); (seedling 8B x MOONLIGHT).
- NIGHT SPRITE Sib-MF-B3M (Gers. N.); (PERRY BLUE x BLUE KING).
- NIGHT WATCH IB-M-S9D (Dan. N.); (GREVIN x); □.
- NIKOTRIS IB-M-S4M (Dan. N.); (NAIAD ATLANTA x GOBELIN RED); □.
- OCTOBER BLAZE TB-EE-FF-R7M (McDade N.); slightly □.
- ODE TB-M-S9D (Loth. N.); (MAUNA LOA x MOA); pleasantly □.
- OJIBWAY TB-M-S9M (Kirk. N.); (from two unnamed seedlings).
- OLD RAGS TB-F-B7D (Dan. N.); (SHALIMAR x); □.
- OLD SALEM TB-M-R3D (Dan. N.); (AMBASSADEUR x SOUV. DE MME. GAUDICHAU); □.
- OLIVER TWIST Ev-B1L (Wash. N.); (**tectorum** x **cristata**).
- OLIVINE IB-FF-S1M (Dan. N.); (MRS. H. DARWIN x); □.
- ON PARADE TB-M-B3D (Williams-T.A. N.); (seedling No. 1302 x SOUV. DE MME. GAUDICHAU); No. ST-1; garden pink fragrance.
- OPALESCENT IB-M-Y9L (Gers. N.); (MRS. CUTHBERTSON x CH'ENYAUN); table iris; locust blossom scent.
- OPATA TB-M-R3M (Dan. N.); (MERLIN x SOUV. DE MME. GAUDICHAU); □.
- ORANGE AND ROSE IB-F-S6L (Dan. N.); (NAIAD ATLANTA x GOBELIN RED); □.
- ORCAGNA IB-F-S9D (Dan. N.); (DALILA x MEDRANO); □.
- ORIENTA IB-F-S9D (Gers. N.); (ZITA x FLAMMENSCHWERT); muskmelon scent.
- ORILIA TB-M-Y9M (Kirk. N.),
- OTAY TB-M-B9D (Loth.-Monroe N.); (**mesopotamica** x ELBERON) x (BRUNO); pleasing fragrance.
- OTTERBEIN TB-MF-B1D (Burtner N.); (SOUV. DE MME. GAUDICHAU x MORNING SPLENDOR); slightly □.
- O WA I S S A DB-E-B1M (Sass-J. 1934); slightly □.
- OXFORD TB-F-B9M (Dan. N.); (PARC DE NEUILLY x); □.
- OXHEART TB-M-R7D (Nic. 1934); Nic.-Jr. 1934; (LENT A. WILLIAMSON x ALCAZAR) x (CARDINAL); strong grape fragrance.
- PALE CORAL TB-M-R1M (Dan. N.); (GEORGIA x SUSAN BLISS); □.
- PEACEMAKER TB-M-W3L (Mit. 1934); Salb. 1934; slightly □.
- PEACH BLUSH TB-R (Dan. N.); (LEAL x NAIAD ATLANTA).
- PERFECT PEACE Jap-Dbl-1 (Smith-U.G. 1934); Hoodacres 1934.
- PERSIAN ROSE IB-M-S7L (Dan. N.); (MIDWEST x DALILA); □.
- PHARAOH SETI IB-M-Y9D (Dan. N.); (MEDRANO x M. BRUN); □.
- PINK MANTLE Jap-Sgl-5 (Smith-U.G. 1934); Hoodacres 1934.
- POLLY PRIM TB-M-R1L (Gers. N.); (HIDEYO x GOLDEN HEART); table iris; locust blossom scent.
- POLYCHROME TB-M-Y9M (Dan. N.); (MARSH MARIGOLD x ARCHEVEQUE); □.
- POMPONIOUS TB-FF-S9D (Dan. N.); (TRISTRAM x); □.
- PORTOLA TB-M-Y6M (Mit. N.); (HELIOS x KING MIDAS).
- PRAIRIE ROSE TB-M-R7M (Egel, 1934); (CAPRICE x IRIS KING).
- PRIM IB-M-W4L (Dan. N.); (VIRGINIA MOORE x); □.
- PRIMERO DB-EE-Y1L (Dan. N.); (STATELLAE x MERLIN); □.
(Note—Its color makes its class Y1L, even though there is now no

- provision for that class in the color chart.)
- PRINCE AHMED TB-M-W8L (Dan. N.); (GREVIN x ANNE LESLIE) x (HIGH NOON); □.
- PRINCE CHARLES Jap-Sgl-6 (Smith-U.G. 1934); Hoodacres 1934.
- PRINCE MICHAEL TB-E-S3M Wayman N.); very fragrant.
- PRINCE OF MOROCCO TB-FF-B3D (Dan. N.); (TRISTRAM x); □.
- PRINCESS ARJEMAND TB-M-WW Donahue N.); (MOONLIGHT x); very □.
- PRINCESS POLAR TB-M-WW (Donahue N.); (MOONLIGHT x); very □.
- PROVINCETOWN TB-M-R3D (Dan. N.); (AMBASSADEUR x SOUV. DE MME. GAUDICHAU); □.
- PULCHER Jap-Dbl-5 (Barber 1934); Hoodacres 1934.
- PURE GOLD TB-M-Y4D (Kirk. N.); (DESERT GOLD x).
- PURITAN MAID TB-EE-R1D (Dan. N.); (CREPUSCULE x SOUV. DE MME. GAUDICHAU); □.
- PURSUIVANT TB-M-R9D (Spender N.); (MELCHIOR x MRS. VALERIE WEST).
- QUEEN MAUVE Jap-Sgl-5 (Smith-U.G. 1934); Hoodacres 1934.
- QUESADA Jap-Dbl-6 (Barber 1934); Hoodacres 1934.
- RED INDIAN TB-M-S7M (McDade N.); no scent.
- RED PRINCE TB-M-R9M (Home-wood N.); No. 1-34; slight scent.
- RED ROVER TB-B7D (Meyer-R.H. N.); C. M., I. S. (Eng.), June 1934; Gard. Chron. 95: 411. June 16. 1934.
- REDSKIN IB-M-R6M (Hollerith N.); (SEMINOLE x); slightly □.
- RED TILE Hex-R7M (Wayman N.).
- REGENCY TB-Y9M (Mur. 1934); Orp. 1934; (IMPERATOR x IRIS KING).
- RETTA TB-M-S4L (Lap. N.); (MIDGARD x pink seedling No. X-13); delicately □.
- REUBEN TB-M-S9M (Lap. N.); (KING TUT x JERRY); mildly □.
- RHAPSODY IN BLUE TB-M-B1L (Rose. N.); A. I. S. Bull. 50: 71. 1934; Jan. 1934; fine perfume.
- RHODESIA TB-Y4L (Pilk. N.); Bronze Medal, I. S. (Eng.), June 1934; Gard. Chron. 95: 411. June 16, 1934.
- RHODON TB-M-R1M (Dan. N.); (NAIAD ATLANTA x ORANGE GUIDON); □.
- ROBYN HODE TB-M-R9D (Dan. N.); (MEDRANO x THELMA PERRY); pronounced Robe'yen Hoe'dee; □.
- ROMAN GLADIATOR TB-EE-R3D (Dan. N.); (MOLIERE x MAGNIFICA); strong grape fragrance.
- ROSE ATLANTA IB-M-B7L (Dan. N.); (WILD ROSE x NAIAD ATLANTA); □.
- ROSE COLBY Spur-Y4D (Branin N.); (monnieri x monnieri); A. I. S. Bull. 52: 95. 1934.
- ROSE MAUVE TTE TB-M-R9L (Dan. N.); (SUSAN BLISS x DREAM); □.
- ROSE NAIAD IB-M-R7L (Dan. N.); (WILD ROSE x NAIAD ATLANTA); □.
- ROSE QUARTZ TB-EM-R7M (Williams-T.A. N.); (ANDREW JACKSON x AZTEC); pronounced spicy fragrance.
- ROSY ASIA TB-M-S9L (Mit. 1934); Salb. 1934; slightly □.
- ROSY WINGS TB-M-S6M (Gage 1934); (DAUNTLESS x mixed pollen); □.

- ROYALIST TB-F-B9D (Gers. N.); (MALLOW ROSE x TENEBRAE); lemon scented.
- ROYAL SALUTE TB-M-B3D (Milk. 1934); So. Cal. 1934; (CALIFORNIA BLUE x SOUV. DE MME. GAUDICHAU); □.
- ROYAL TOGA TB-M-R3D (Dan. N.); (ANNE LESLIE x TRISTRAM); □.
- RUISDAEL IB-M-R9D (Dan. N.); (CRETONNE x MEDRANO); □.
- RUST IB-M-S9D (Dan. N.); (ORANGE GUIDON x); □.
- SAHARA TB-Y4L (Pilk. N.); (BRUNO x WM. R. DYKES).
- SANGUA TB-R7D (Dan. N.); (MEDRANO x M. BRUNO); □.
- SAN PHILIPPE TB-M-R7M (Loth.-Hunt N.); (NANCY ORNE x APHRODITE); □.
- SARI MAYA IB-MF-Y9L (Gers. N.); (STEEPWAY x SHEKINAH); table iris; locust blossom scent.
- SATAN TB-M-B7D (Kirk. N.); (seedling of BLACK WINGS); BLACK WINGS was first named SATAN as which it was registered in 1929, and changed later—the new seedling takes up the name which was not taken out of the files.
- SAXONIA IB-M-WW (Dan. N.); (Troost x); □.
- SEQUIN TB-M-Y9M (Dan. N.); (MME. CHOBOUT x); □.
- SETTING SUN TB-MF-S4D (Kirk. N.); (KING TUT x red seedling).
- SILVER SWAN TB-E-W4L (Wayman N.); very fragrant.
- SINGING WOOD TB-M-B3D (Richer N.); (CRUSADER x LENT A. WILLIAMSON); □.
- SMITH GLORY Jap-Dbl-6 (Smith-U.G. 1934); Hoodacres 1934.
- SNOWTRAIL TB-M-WW (Donahue N.); (MOONLIGHT x); quite □.
- SOLOMON TB-F-R3D (Dan. N.); (MAGNATE x DOMINION); □.
- S O M E B O D Y TMB-EE-M-R1L (White-C.G. N.); (PURISSIMA x *susiana*); pleasingly □.
- SONG OF INDIA TB-M-S9D (Dan. N.); (MAGNATE x DOMINION); very □.
- SOUND MONEY DB-E-Y4M (Sass-J. N.); slightly □.
- SOUTHLAND IB-M-FF-Y4D (Sass-H.P. N.); (*pumila* x seedling of KING TUT); slightly □.
- STARBEAU TB-M-B1L (McKee N.); (CALIFORNIA BLUE x SENSATION); slightly □.
- STERLING TB-M-B7M (Dan. N.); (NEPTUNE x SOUV. DE MME. GAUDICHAU); □.
- ST. LOUIS TB-M-B3D (Wiesner 1934); Schreiner 1934.
- SUMMER GIRL IB-M-B7L (Dan. N.); (MADY CARRIERE x); □.
- SUNNYFIELD TB-F-Y6L rev. (Dan. N.); (FLAVESCENS x MEDRANO); □.
- SUNSHINE GIRL TB-M-Y4L (Dan. N.); (CITRONELLA x SHEKINAH); □.
- SUPERIOR TB-M-R9D (Dan. N.); (MAGNATE x DOMINION); □.
- SYLVANIA TB-M-R3D (Dan. N.); (AMBASSADEUR x SOUV. DE MME. GAUDICHAU); □.
- taitii* Span- (Coll. Portugal, by Fos.); Gard. Chron. 3rd Ser. 40: 145. 25 Aug. 1906; regarded by Contirho in Flora of Portugal as a sufficiently distinct form of *I. xiphium* to deserve a specific name; that given by Foster has been recognized by R. H. S. as per a letter of Oct. 5, 1933.
- TALANI Sib-MF-B1L (Gers. N.); (PERRY BLUE x BLUE KING).
- TAPIST TB-R9D (Dan. N.); (MEDRANO x ROSEWAY); □.
- TASCALA Sib-F-B3D rev. (Gers. N.); (BLUE KING x PERRY BLUE).
- TATEYAMA Jap-Sgl-5 (Barber 1934); Hoodacres 1934.

- TA-WA IB-E-Y4L (Sass-H.P. N.); No. I-41-29; no scent.
- TAWENDA TB-EM-S1L (Gers. N.); (HIDEYO x GOLDEN HEART); table iris; no scent.
- TERRA COTTA IB-EM-S9D (Dan. N.); (MOLIERE x); not □.
- THE BLACK DOUGLAS TB-F-B7D (Sass-J. 1934); No. 32-26; slightly □.
- THE RED DOUGLAS TB-F-R9D (Sass-J. N.); No. 33-13; slightly □.
- THOMAS R. BACON TB-Y4L (Brehm 1934); Thole 1934; (MME. CHERI x BRUNO) x (BRUNO).
- TIMAGAMI TB-E-S9M (Kirk. N.); (from two red and copper toned seedlings).
- TIMGAD TB-W8D rev. (Cay. 1933); C. M., S. N. H. F., 1933; Bull. Men. S. N. H. F., Mar 1934, 133.
- TIVOLI TB-EM-R3D (Richer N.); (SOUV. DE MME. GAUDICHAU x MME. CHABAL); heavy grape scent.
- TODAMO Jap-Dbl-6 (Barber 1934); Hoodacres 1934.
- TREASURY TB-M-Y9D (Dan. N.); (AMBASSADEUR x CARDINAL); □.
- TSI-LO-LAN IB-M-R1M (Gers. N.); (SHEKINAH x FRITJOF); table iris; name is Chinese for violet; □.
- TUSCALOOSA TB-MF-S7D (Nie. N.); (BRUNO x COPPERSMITH); slightly □.
- TWILIGHT SHADOWS TB-F-B9M (Morse N.); (ASIA x PROSPERO); not □.
- VEILED PRINCESS TB-F-R1M (Dan. N.); (ROSEWAY x); □.
- VENERABLE TB-MF-B1D (Gotts. N.); (CANOPUS x HARMONY); slightly □.
- VERIBLUE TB-M-B1D (Dan. N.); (PARC DE NEUILLY x YVONNE PELLETIER); □.
- VERIGOLD DB-EE-Y3D (Gotts. N.); (BRIDE x ZWANENBURG); □.
- VEROCCHIO TB-M-S9D (Dan. N.); (FRO x); □.
- VIA CHIARA TB-M-S9D (Dan. N.); (ROSE MADDER x CORNUAULT); □.
- VIEW HALLO TB-M-S9D (White-C.G. N.); (PICADOR x LADY PAR-AMOUNT); □.
- VIOLET INSOLE TB-R7L (Insole N.); Bronze Medal, I. S. (Eng.) June 1934; Gard. Chron. 95: 411. June 16, 1934; Gard. Ill. 56: 364. June 16, 1934.
- VITRUVIUS TB-M-S9D (Dan. N.); (MARSH MARIGOLD x ARCHEVEQUE); □.
- WEYMOUTH TB-M-R3D (Dan. N.); (AMBASSADEUR x SOUV. DE MME. GAUDICHAU); app. A. I. S. 1927; □.
- WHITEHALL TB-WW (Mur. N.); C. M., I. S. (Eng.) June 1934; Gard. Chron. 95: 411. June 16, 1934.
- WHITE MAN TB-M-WW (Donahue N.); (MOONLIGHT x); quite □.
- WHITE PLAINS IB-M-W8L (Dan. N.); (ARCHEVEQUE x); □.
- WILLIAM CAREY JONES TB-Y4L (Brehm 1934); Thole 1934; (MME. CHERI x BRUNO) x (BRUNO).
- WILL O'THE WISP TB-M-Y6L rev. (Stahl.-Wash. N.).
- WINDSOR LAD TB-Y6M (Insole N.); C. M., I. S. (Eng.) June 1934; Gard. Chron. 95: 411. June 16, 1934.
- winogradowii* Ret- (Western Central Georgia, Gori Distr.) Prelim. A., R. H. S., 1932; Gard. Ill. Apr. 21, 1934, 227.
- YACHATS Jap-Sgl-6 (Barber 1934); Hoodacres 1934.
- YAKIMA TB-M-S9D (Klein. 1934); Cooley 1934; (AMBASSADEUR x BRUNO); □.

- YAQUINA Jap-Dbl-6 (Barber 1934); Hoodacres 1934; pronounced Ya-queen'-a.
- YASMELA IB-F-S9M (Gers. N.); (CHASSEUR x ANNE BULLEN); table iris; rich grape fragrance.
- YELLOW TOPAZ TB-M-Y4M (Dan. N.); (GREVIN x ANNE LESLIE) x (HIGH NOON); □.
- YUCATAN TB-MF-S7M (Kirk. N.); (from two unnamed seedlings).
- ZAMA KHAN IB-M-Y9M (Dan. N.); (GEORGIA x MEDRANO); □.
- ZEBRULE TB-FF-B3D (Dan. N.); (MARY GARDEN x); □.
- ZEST Sib-B1M (Sturt. 1934); Nes. 1934; *Sturtevant Hybrid* (Nes. 1934).

Note—In explanation of the many registrations for Mr. Danenhauer, let it be understood that it was upon the Registrar's insistence that these be recorded, as it had come to his attention Mr. Danenhauer carried many of his seedlings under names. Because of the danger attendant on their release by others who might obtain stock as gifts, this was done—these seedlings having been named over a long period beginning about 1920—in order to prevent name duplications, and some of the names carried proved to be duplications and these have been changed.

IRIS VARIETIES APPROVED IN 1934, INFORMATION BEING RECEIVED INDIRECTLY

- ALCEE IB-B7M (Vilm. 1922); C. M., S. N. H. F., 1930; Bull. Men. S. N. H. F., Mar. 1934, 133.
- ASMODEE TB-S3D (Vilm. 1925); Bull. Men. S. N. H. F., Mar. 1934, 133.
- AVIATOR NUNGESSOR TB-S9M (Denis bef. 1934); Salb. 1934.
- BARRICOU TB-R9D (Cay. 1933); C. M., S. N. H. F., 1933; Bull. Men. S. N. H. F., Mar. 1934, 133.
- BELPHEGOR TB-S9D (Cay. 1934); C. M., S. N. H. F., May 1934.
- BLUE MINIATURE DB-E-B1D (Loomis 1934); Kellogg 1934.
- BRASIER TB-R9D (Cay. 1934); C. M., S. N. H. F., May, 1934.
- CIRRUS TB-M-W5L (Burt. N.); (PAISLEY x OPERA); J. R. H. S., Part 1, 59: 172. 1934.
- FARAUD TB-S9M (Cay. N.); C. M., S. N. H. F., 1932; Bull. Men. S. N. H. F., Mar. 1934, 133.
- JANINE TB-B9D (Cay. 1934); C. M., S. N. H. F., May 1934.
- JERUSALEM TB-Y9D (Cay. 1934); C. M., S. N. H. F., May 1934.
- JOANNA TB-M-B1D (Stern N.); A. M., R. H. S., Wisley, 1934; *Joan Stern*, A. I. S. Bull. 46. 1933; *Soanna*, J. R. H. S., Part 1. 59: 175. 1934; not □.
- JUDEE TB-B9D (Vilm. 1924); C. M., S. N. H. F., 1929; Bull. Men. S. N. H. F., Mar. 1934, 133.
- KARIOKA TB-Y9D (Cay. 1934); C. M., S. N. H. F., May 1933.
- MADAME LOUIS AUREAU TB-E-W8M (Cay. 1934); C. M., S. N. H. F., May 1934; W. R. Dykes Med-al May 1934.
- MAYFLY Sib- (Wal. N.); J. R. H. S., Part 1. 59: 34. 1934.
- RHEINELFE TB-W9 (G & K 1934); *Gartenschönheit*, Aug. 1933, 155; confirmed by card by Camillo Schneider, Oct. 3, 1933.
- THESEE TB-W2M (Vilm. 1922); C. M., S. N. H. F., 1929; Bull. Men. S. N. H. F., Mar. 1934. 133.

APPROVALS PENDING

Because rules of horticultural and special flower societies outside of America call for the immediate naming of a seedling receiving an award, and the distance away makes immediate approval of such names impossible, and because there has been much dissatisfaction expressed by foreign breeders because of these conditions, the Registrar is inaugurating new rules, subject to change by the Board of Directors, for breeders outside of the North American continent, ONLY.

It is proposed that these breeders submit names for approval, with or without full descriptions, well in advance of the shows in which they intend to compete, each reserving for his own use those names which can be approved as not conflicting with existing ones, with the understanding that for each one used, a description in full detail as required by us for the usual registration, be submitted, preferably immediately, but CERTAINLY before two blooming seasons have passed—after which, if the registrations are not completed according to the rules, the names involved will become available for use by any other breeder who may claim them.

ANAGNINA (Senni)	MA BELLE (Burt.)
ANIENE (Senni)	MAGNIFICAT (Meyer-R.H.)
APPIA (Senni)	NOMENTANA (Senni)
ARDEATINA (Senni)	OSTIENSE (Senni)
AVENTINO (Senni)	PALATINO (Senni)
BEAU BROCADE (Hellings)	PRENESTINA (Senni)
BLEUATRE (Meyer-R.H.)	PRIME (Meyer-R.H.)
CAPITOLINO (Senni)	QUIRINALE (Senni)
CASILINA (Senni)	SALARIA (Senni)
CASSIA (Senni)	SAUL OF TARSUS (Baker-G.P.)
CHATELAINE (Hellings)	SORACTE (Senni)
CIROS (Dykes-K.)	TEVERE (Senni)
COELIO (Senni)	TIBERINA (Senni)
COLLATINA (Senni)	TIBURTINA (Senni)
DARK BUTTERFLY (Hellings)	TRIUMPHALIS (Senni)
DRAGON BROCADE (Hellings)	TUSCOLANA (Senni)
DR. ATTILIO RAGIONIERI (Senni)	VERSICLE (Meyer-R.H.)
ESQUILINO (Senni)	VIA AURELIA (Senni)
FLAMINIA (Senni)	VIA CLAUDIA (Senni)
JOVE (Hellings)	VIA LAURENTINA (Senni)
LATINA (Senni)	VIA SACRA (Senni)
	VIMINALE (Senni)

VARIETIES UNAPPROVED IN 1934

Candeur TB-WW (Nonin bef. 1934); Bull. Men. S. N. H. F., Mar. 1934. 133.
 Dryade Sib- (Wal. N.); J. R. H. S. Part 1. 59: 34. 1934.
 Edward V. A. I. S. Bull. 50: 9, 1934; Mrs. Donald P. Ross advises that no such iris is in her garden.
 Evangeline (Mur. N.); J. R. H. S., Part 1, 59: 34. 1934.

Margaret Sib- (Wal. N.); J. R. H. S., Part 1. 59: 34. 1934.
 Morphee TB-B9D (Vilm. 1926); C. M., S. N. H. F., 1930; Bull. Men. S. N. H. F., Mar. 1934. 133.
 Richmond Jap-Sgl-7 (Kemp 1934); Soel. 1934.
 Romance TB-B7M (Cay. 1933); C. M., S. N. H. F., 1933; Bull. Men. S. N. H. F., Mar. 1934. 133.
 Satan TB-W3D rev. (Cay. bef. 1932).
 Sparte TB-B9D (Cay. 1933); C. M., S. N. H. F., 1933; Bull. Men. S. N. H. F., Mar. 1934. 133.
 Wisteria Sib-B3M (And. 1933).

VARIETIES BEING INVESTIGATED, 1934

Akt (Meyer-R.H.); J. R. H. S., Part 1. 59: 174. 1934; not a name but an identifying mark as advised by Rev. Meyer.
 Alphen TB- Perry 1934.
 Francis TB- Perry 1934
 Miss Doris Cranfield TB- Perry 1934.
 Nella A. I. S. Bull. 50: 6, 1934.
 Tika (Meyer-R.H.); J. R. H. S., Part 1. 59: 34. 1934.

SYNONYMOUS NAMES, 1934

Alluwe—AL-LU-WEE. Cooley 1934.
Andelia—ANNDELIA. Cooley 1934.
Belloria—BELLORIO. Kellogg 1934.
Brittoness—BRITONESS. Cooley 1934.
Cardinal Handon—CARDINAL. A. I. S. Bull. 50: 9, 1934; advice by letter from Mrs. Donald P. Ross.
Esamillo—ESCAMILLO. J. R. H. S., 59: 177. 1934.
Flammerschwert—FLAMMENSCHWERT. Cay. 1934.
Hochelago—HOCHELAGA. Riverview 1934.
Mareschel Ney—MARESCHAL NEY. Schreiner 1934.
Mme. Bouscant—MME. CECILE BOUSCANT. Cay. 1934.
Mr. G. Sturtevant—GRACE STURTEVANT. Blumen u. Pflanzenbau die Gartenwelt. 38: 314. No. 24. June 15, 1934.
Naiad—FOREST NAIAD. A. I. S. Bull. 52: 84. 1934.
Noweta—NO-WE-TA. Cooley 1934.
Radiance—PRIME. (Meyer-R.H.); J. R. H. S., Part 1. 59: 34. 1934
Rippowan—RIPPOWAM. Kellogg 1934.
Salarosa—SALEROSA. Kellogg 1934.
Seostris—SESOSTRIS. Schreiner 1934.
Sequoiah—SEQUOIAH. Schreiner 1934.
Spring Maid—SPRINGMAID. Kellogg 1934.
Tremendous—NENE. A. I. S. Bull. 50: 9. 1934; advice by letter from Mrs. Donald P. Ross.

ERRATA

In BULLETIN 54, December 1934, under synonyms please note following corrections:

Mich. Charrier should be referred to MICHELINE CHARRAIRE, not *Micheline Charriere*, which therefore also becomes a synonym.

Shrewei should have been referred to **shrevei**, not SHREVEI.

WINNESHIEK is correct and *Winnieshiek* the synonym, to be referred to WINNESHIEK.

Under Introductions, 1934, please note the following correction: *auranitica*, p. 48, should have been **auranitica**.

RELEASES

The names Golden Galleon and Golden Grace approved pending for Mrs Murrell, have been released, and are open for use by first claimant.

INTRODUCTIONS OF 1934

ABELARD IB-E-S6M (Sass-H. P. 1934); Sass-H. P. 1934; Sass-J. 1934; R. 1933.

ALBRIGHT TB-R7M (Storer 1934); Tip Top 1934; R. 1931.

ALINE TB-SIL (Stern 1934); Orp. 1934; A. M., R. H. S., 1931; R. 1932.

A. H. NICHOLLS Laev-W1 (Nic.-A. H. 1934); Nic.-Jr. 1934; R. 1934.

AMIGO TB-M-B9D (Wmsn. 1934); Long. 1934; R. 1933.

AMRITA TB-M-B3M (Con. 1934); Kellogg 1934.

ANAKIM TB-M-B7L (Klein. 1934); Cooley 1934; R. 1934.

ANNIE CADIE TB-F-Y4M (Wash. 1934); Nes. 1934; R. 1933.

ARBUTUS TB-S7M (Loth. 1934); Kellogg 1934; H. M., A. I. S. 1931; R. 1931.

AUTUMN DAWN IB-EE-FF-S7M (Nies 1934); So. Cal. 1934; R. 1933.

AUTUMN FROST TB-EM-FF-W4 (Schreiner 1934); Schreiner 1934; Me-Dade 1934; Hill-H. M. 1934; R. 1934.

AUTUMN GLEAM IB-M-FF-Y4M (Sass-H. P. 1934); Sass-H. P. 1934; Sass-J. 1934; Hill-H. M. 1934; R. 1934.

AUTUMN HAZE TB-E-FF-S9M (Sass-H. P. 1934); Sass-H. P. 1934; Sass-J. 1934; Hill-H. M. 1934; R. 1934.

AVIATOR NUNGESSOR TB-S9M (Denis bef. 1934); Salb. 1934.

AVONDALE TB-M-R7D (Sass-H. P. 1934); Sass-H. P. 1934; Nes. 1934; R. 1933.

BALBANCHA Fulv-Hex-B7M (Wash. 1934); Nes. 1934; R. 1933.

BANNERETTE TB-F-R3M (Mnr. 1934); Orp. 1934; Bronze Medal, I. S. (Eng.) 1933; *Banneret*.

BARBARIAN TB-M-B7D (Wmsn. 1934); Long. 1934; R. 1933.

BELPHEGOR TB-S9D (Cay. 1934); C. M., S. N. H. F., May, 1934.

BETTY Jap-Dbl-7 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.

BETTY NESMITH TB-M-Y4D (Wash. 1934); Nes. 1934; R. 1933.
 BLACK BEAUTY TB-M-R7D (Kirk. 1934); R. 1928.
 BLACK WARRIOR TB-S3D (Nic. 1934); Nic.-Jr. 1934; R. 1931.
 BLUE MINIATURE DB-E-B1D (Loomis 1934); Kellogg 1934.
 BLUE MIST TB-EM-B1L (Gers. 1934); Ashley 1934; R. 1929; table iris.
 BLUE TRIUMPH TB-M-B1L (Grinter 1934); Quality 1934; Stoner 1934;
 R. 1934.
 BRASIER TB-R9D (Cay. 1934); C. M., S. N. H. F., May, 1934.
 BRONZE GLORY TB-F-S9M (Sim. 1934); R. 1933.
 BROWN BETTY TB-EM-S6D (White-C. G. 1934); So. Cal. 1934; R. 1933.
 BRUNHILDE TB-M-B7M (Salb. 1934); R. 1934.
 BUENO TB-EM-B9M (Gers. 1934); Ashley 1934; R. 1929; table iris.
 BUNTING TB-M-B1L (Wmsn. 1934); Long. 1934; R. 1933; table iris.
 BYSANTIUM TB-M-S4L (Ayres 1934); Schreiner 1934; R. 1932.
 CHAMITA TB-M-S9L (Wmsn. 1934); Long. 1934; R. 1933.
 CHEERIO TB-M-S9D (Ayres 1934); Schreiner 1934; R. 1931.
 CHINA ROSE TB-M-S9M (Salb. 1934); R. 1934.
 COOL WATERS TB-EM-B1L (Wash. 1934); Nes. 1934; R. 1933.
 COPPER LUSTRE TB-M-S4L (Kirk. 1934); R. 1931.
 CORINTHE TB-B9D (Cay. 1934); C. M., S. N. H. F., May, 1934; R. 1933.
 CORTEZ TB-FF-Y9M (Nes. 1934); R. 1933.
 CREOLE BELLE TB-M-B1D (Nic. 1934); Nic.-Jr. 1934; R. 1934.
 CROWN JEWEL TB-M-S6M (Nic. 1934); Nic.-Jr. 1934; R. 1934.
 CYRUS THE GREAT TB-E-B7D (Kirk. 1934); R. 1933.
 DARK KNIGHT TB-F-S9D (Salb. 1934); R. 1934.
 DARK MORASS Hex-Fulv.MF-S1D (Nies 1934); So. Cal. 1934; R. 1933.
 DAWNING DAY TB-EM-S7L (Wash. 1934); Nes. 1934; R. 1933.
 DESTINY TB-F-S9D (Burgess 1934); Orp. 1934; Bronze Medal, I. S.
 (Eng.) 1934; R. 1932.
 ELEANOR ROOSEVELT IB-M-FF-R1D (McDade 1934); R. 1933.
 EQUIPOISE TB-M-Y9L (Wmsn. 1934); Long. 1934; R. 1933.
 EROS TB-S9M (Riedel-Mead 1934); Long. 1934; R. 1931.
 FAVORI TB-B7D (Cay. 1934); C. M., S. N. H. F., May, 1934.
 FRANKLIN ROOSEVELT IB-M-FF-B7D (McDade 1934); R. 1933.
 FUJISAN Jap-Dbl-5 (Barber 1934); Hoodacres 1934; R. 1934.
 GENTILLY ROAD Hex-radicristatae-MF-B1D (Nic.-Jr. 1933); R. 1933.
 GENTIUS IB-E-B1D (Sass-H. P. 1934); R. 1933.
 GEORGE DAVIDSON TB-Y-4-M (Brehm 1934); Thole 1934; R. 1934.
 GOLDEN HIND TB-E-Y4D (Chad. 1934); Orp. 1934; C. M., R. H. S., 1931;
 Silver Medal, I. S. (Eng.) 1934; not Y4M as previously reported; R. 1931.
 GOLDEN IMP DB-E-Y6D (Donahue 1934); Nes. 1934; R. 1932.
 GOLDEN WEST IB-E-Y4M (Sass-J. 1934); R. 1933.
 GOLDWING TB-M-Y4D (Nic. 1934); Nic.-Jr. 1934; R. 1934.
 GRATONE TB-EF-B1L (Gers. 1934); Kellogg 1934; R. 1930; table iris.
 HALOKA Fulv-Hex-R7M (Wash. 1934); Nes. 1934; R. 1933.
 HAPPY DAYS TB-EM-Y4M (Mit. 1934); Salb. 1934; R. 1934.
 Hermione TB-S4M (Cay. 1934); C. M., S. N. H. F., May 1934.
 HESTER PRYNNE TB-S9D (Bliss); Orp. 1934; R. 1932.

HOBO DB-FF-Y9D (Wmsn. 1934); Long. 1934; R. 1933.
 INDIGO BUNTING TB-M-B1D (Ayres 1934); Schreiner 1934; R. 1931.
 ITASCA TB-M-R7D (Klein. 1934); Cooley 1934; R. 1934.
 JANINE TB-Y9D (Cay. 1934); C. M., S. N. H. F., May 1934.
 J. D. NIES Hex-Fulv-MF-S4D (Nies 1934); So. Cal. 1934; R. 1933.
 JERUSALEM TB-Y9D (Cay. 1934); C. M., S. N. H. F., May 1934.
 JOLLY ROGER TB-M-B1D (Nic. 1934); Nic.-Jr. 1934; R. 1934.
 JOSEPH LE CONTE TB-S4M (Brehm 1934); Thole 1934; R. 1934.
 JUDEE TB-B9D (Vilm. 1924); Bull. Men. de la Soc. Nat. d'Hort. de
 France, Mar. 1934, 133.
 JUNALUSKA TB-M-S3M (Kirk. 1934); R. 1931.
 KALINGA TB-MF-W4L (Klein. 1934); Cooley 1934; R. 1934.
 KARIOKA TB-Y9D (Cay. 1934); C. M., S. N. H. F., May 1933.
 KINGLET TB-M-Y4D (Wmsn. 1934); Long. 1934; R. 1933; table iris.
 KOCHINETTE IB-E-B7D (Kirk. 1934); R. 1933.
 LADY GAGE TB-M-W7L (Gage 1934); Nes. 1934; R. 1933.
 LADY PARAMOUNT TB-EM-Y4L (White-C. G. 1934); So. Cal. 1934; H.
 M., A. I. S. 1932; R. 1932.
 LADY PHYLLIS TB-B1L (Neel 1934); Orp. 1934; R. 1934.
 LENA RIVERS Jap-Sgl-1 (Barber 1934); Hoodacres 1934; R. 1934.
 MADAME LOUIS AUREAU TB-E-W8M (Cay. 1934); C. M., S. N. H. F.,
 and W. R. Dykes Medal, May 1934.
 MAGI TB-S6L (Sturt. 1934); Nes. 1934; R. 1929.
 MAID OF TENNESSEE TB-MF-B7L (Wash. 1934); Nes. 1934; R. 1933.
 MANTLE O'BLUE Jap-Sgl-6 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.
 MEHAMA TB-M-R7M (Klein. 1934); Cooley 1934; R. 1934.
 MELA-HASKA TB-EM-B9D (Gers. 1934); Kellogg 1934; R. 1929.
 MISSOURI TB-M-B3M (Grinter 1934); Kellogg 1934; R. 1932; H. M., A. I.
 S. 1933.
 MME. RECAMIER TB-EM-S4L (Wash. 1934); Nes. 1934; R. 1933.
 MOON O'SILVER Jap-Dbl-1 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.
 MORNING STAR TB-Y6L (Winter 1934); Kellogg 1934; R. 1929.
 Morphee TB-B9D (Vilm. 1926).
 MOUNTAIN SUNSET TB-FF-S9D (Klein. 1934); Cooley 1934; R. 1934.
 MOURNING CLOAK TB-M-B1D (Essig 1934); So. Cal. 1934; R. 1934.
 MOZAMBIQUE TB-B9D (Mead-Riedel 1934); Long. 1934; R. 1931.
 MRS. FRED HONEY Jap-Bbl-6 (Smith-U. G. 1934); Hoodacres 1934; R.
 1934.
 MRS. JOHN HAWKER Jap-Dbl-5 (Smith-U. G. 1934); Hoodacres 1934;
 R. 1934.
 NARONDA TB--M-B1D (Hall 1934); R. 1933.
 NEON TB-MF-Y9D (Salb. 1934); R. 1934.
 NINIGRET TB-M-S5M (Hill 1934); Kellogg 1934; R. 1932.
 NORDIC TB-M-S9L (Kirk. 1934); R. 1931.
 OWAISSA DB-E-B1M (Sass-J. 1934); R. 1934.
 OXHEART TB-M-R7D (Nic. 1934); Nic.-Jr. 1934; R. 1934.
 PARTHENON TB-M-W4L (Con. 1934); Schreiner 1934; Kellogg 1934; R.
 1928.

PEACEMAKER TB-M-W3L (Mit. 1934); Salb. 1934; R. 1934.
 PEER GYNT TB-MF-W8M (Wash. 1934); Nes. 1934; R. 1933.
 PERFECT PEACE Jap-Dbl-1 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.
 PEWEE IB-M-WW (Wmsn. 1934); Long. 1934; R. 1933; table iris; *Columbia*
 TB (Wmsn.) A. I. S. Bull. July 1933.
 PINK BUTTERFLY TB-F-S4L (Wash. 1934); Nes. 1934; R. 1933.
 PINK LADY IB-EM-S4L (Wash. 1934); Nes. 1934; R. 1933.
 PINK MANTLE Jap-Sgl-5 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.
 PINK OPAL TB-F-R1L (Sass-J. 1934); R. 1933.
 PLAY BOY IB-F-W3D (Wmsn. 1934); Long. 1934; R. 1931.
 PRAIRIE ROSE TB-M-R7M (Egel. 1934); R. 1934.
 PRINCE CHARLES Jap-Sgl-6 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.
 PULCHER Jap-Dbl-5 (Barber 1934); Hoodacres 1934; R. 1934.
 QUEEN MAUVE Jap-Sgl-5 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.
 QUESADA Jap-Dbl-6 (Barber 1934); Hoodacres 1934; R. 1934.
 RABAGAS TB-R7M (Cay. 1934); R. 1933.
 RED ORCHID IB-E-R7D (Sass-J. 1934); R. 1933.
 REGENCY TB-Y9M (Mur. 1934); Orp. 1934; R. 1934.
 RHAGES TB-F-W2M (Mead-Riedel 1934); Long. 1934; R. 1932.
 RHEINELFE TB-W9 (G & K 1934).
 Richmond Jap-Sgl-7 (Kemp 1934); Soel. 1934.
 ROSEMONT TB-F-R3D (Hall 1934); R. 1932.
 ROSY ASIA TB-M-S9L (Mit. 1934); Salb. 1934; R. 1934.
 ROSY WINGS TB-M-S6M (Gage 1934); R. 1934.
 ROYAL SALUTE TB-M-B3D (Millik. 1934); So. Cal. 1934; R. 1934.
 SALTARELLE TB-B9D (Cay. 1934); C. M., S. N. H. F. May 1933.
 SAM DAVIS TB-EM-R7M (Wash. 1934); Nes. 1934; R. 1933.
 SANDIA TB-M-R7M (Wmsn. 1934); Long. 1934; R. 1933.
 SISKIN IB-F-Y4M (Wmsn. 1934); Long. 1934; R. 1931; table iris.
 SMITH GLORY Jap-Dbl-6 (Smith-U. G. 1934); Hoodacres 1934; R. 1934.
 SOMBRERO TB-M-S7M (Essig 1934); R. 1934.
 SOUTHLAND IB-M-FF-Y4D (Sass-H. P. 1934); R. 1934.
 SPRING BEAUTY TB-EM-R7L (Gers. 1934); Kellogg 1934; R. 1932.
 ST. LOUIS TB-M-B3D (Wiesner 1934); Schreiner 1934; R. 1934.
 STONEWALL JACKSON TB-EM-Y9D (Wash. 1934); Nes. 1934; R. 1933.
 SUNDIPT TB-M-Y4M (Wmsn. 1934); Long. 1934; R. 1933.
 SUSA IB-E-R9D (Sass-H. P. 1934); R. 1933.
 TATEYAMA Jap-Sgl-5 (Barber 1934); Hoodacres 1934; R. 1934.
 THE BLACK DOUGLAS TB-B7D (Sass-J. 1934); R. 1934.
 THOMAS R. BACON TB-Y4L (Brehm 1934); Thole 1934; R. 1934.
 TINT O'TAN TB-MF-S4L (Ayres 1934); Schreiner 1934; R. 1933.
 TITMOUSE IB-M-Y5M (Wmsn. 1934); Long. 1934; R. 1931; not B1M.
 TODAMO Jap-Dbl-6 (Barber 1934); Hoodacres 1934; R. 1934.
 TOLANA Fulv-Hex-R7L (Wash. 1934); Nes. 1934; R. 1933.
 VESPER HOUR TB-F-S1L (Wash. 1934); Nes. 1934; R. 1933.
 VOLTIGEUR TB-R6D (Cay. 1934); C. M., S. N. H. F., May 1934.
 WAHALLE Fulv-Hex-S4L (Wash. 1934); Nes. 1934; R. 1933.

WHITE CREPE TB-EM-W4L (Gers. 1934); Ashley 1934; R. 1929; table
iris.
WILLIAM CAREY JONES TB-Y4L (Brehm 1934); Thole 1934; R. 1934.
WISTARIA TB-B1L (Loth. 1934); So. Cal. 1934; H. M., A. I. S. 1930; R.
1930.
YACHATS Jap-Sgl-6 (Barber 1934); Hoodacres 1934; R. 1934.
YAKIMA TB-M-S9D (Klein. 1934); Cooley 1934; R. 1934.
YANEKA Fulv-Hex-B1M (Wash. 1934); Nes. 1934; R. 1933.
YAQUINA Jap-Dbl-6 (Barber 1934); Hoodacres 1934; R. 1934; pronounced
Ya-Queen'-a.
ZEST Sib-B1M (Sturt. 1934); Nes. 1934; R. 1934; *Sturtevant Hybrid* Nes.
1934.

THE AMERICAN IRIS SOCIETY

1935 POLICY OF AWARDS

1. The following regulations cancel all previous regulations in reference to ratings and awards.

2. The Board of Directors shall appoint accredited judges in various parts of the country.

3. After having studied the recommendations of the Committee on Awards and the reports of judges, the Board of Directors is given full power to make the Awards of Merit and award the Dykes Medal except as expressly designated in the following regulations:

4. Highly Commended

The Board of Directors shall give Highly Commended to varieties receiving three or more recommendations from the accredited judges subject to the regulations in paragraph 19a below.

5. Honorable Mention

The Board of Directors shall give Honorable Mention to varieties receiving five or more recommendations from the accredited judges and subject to the regulations in paragraph 19b below.

6. Award of Merit

The Board of Directors may give not more than five American Awards of Merit yearly. Such awards shall be given only upon the recommendation of at least seven accredited judges, and subject to the regulations in paragraph 19c below. Such award shall not be given an Iris which all or most of the judges saw in the same garden and preference shall be given to those seen in widely scattered sections.

7. Dykes Memorial Medal

The Iris Society of England has offered to the American Iris Society the Dykes Memorial Medal yearly. This is the highest award that can be given to a new Iris. Upon the recommendation of seven or more accredited judges and subject to the regulations in paragraph 19d below, the Committee on Awards may award this medal yearly subject to the

confirmation of the Board of Directors. The Medal should go to an Iris widely distributed and judged in widely scattered sections.

8. All of the above refers to Iris originated in America. In addition the Board of Directors may give not more than five Awards of Merit yearly to Irises of foreign origin. Such awards shall be given only upon the recommendation of at least seven accredited judges and subject to the regulations in paragraph 19e below.

DUTIES OF THE COMMITTEE ON AWARDS

9. The Committee on Awards shall study each year the system of rating and awards and make its recommendations of general policy to the Board of Directors.

10. The Committee on Awards shall submit yearly to the Board of Directors a list of accredited judges for the various districts.

11. The Committee on Awards shall recommend a Chairman of a Subcommittee of Tabulation whose duties shall be to tabulate the judges' reports received up to and including July 15th and shall furnish complete tabulated information to the Committee on Awards on or before September 1st.

12. The Committee on Awards shall receive and study carefully the report of the Subcommittee on Tabulation and on the basis of this study, shall make its recommendations to the Board of Directors.

INSTRUCTIONS FOR ACCREDITED JUDGES

13. Judges are requested to send ratings, recommendations and reports to the Subcommittee on Tabulation on or before July 15th.

14. Judges are requested to rate Irises which were introduced during the years 1932, 1933 and 1934. Introductions for these years are listed in the following Bulletins:

Year 1932 Bulletin No. 46	January	1933
Year 1933 Bulletin No. 54	December	1934
Year 1934 Bulletin No. 56	March	1935

15. Irises in gardens are to be rated under the symbol letter rating system as follows: 90 or over A; 85 to 89 inclusive B; 80 to 84 inclusive C; 70 to 79 inclusive D; using the following point score system as a basis in arriving at the total:

Color	25	Vigor	10
Quality	20	Floriferousness	10
Garden Value	15	Stalk	10
Form	10	Total	100

Definitions of above scale of points are defined in December, 1934, Bulletin No. 54, Pages 72 and 73, which judges should study carefully.

16. No rating of a variety will be published unless it has been voted on by at least five (5) judges. It will be the policy of the Board to keep confidential all reports of the judges. An individual judge may, however, use his own discretion about giving out his own ratings.

17. Judges are requested (a) to make no ratings on one year plants which are plainly poorly grown and are not fully established, (b) to make no report on seedlings in breeders' gardens if breeders request no rating be made on the variety.

18. Judges will note that varieties introduced later than the year 1934 should not be rated in 1935 but instead judges are earnestly requested to send in descriptive comments on varieties which will be introduced in 1935 or later, the comments to be published in the Bulletin over their signatures (or without signature if requested).

19. Judges are requested to make recommendations for awards as follows (Paragraphs a, b, c and d apply only to Irises originating in America):

- (a) Judges may make recommendations for Highly Commended at exhibitions in cooperation with the American Iris Society under regulations published in December, 1934. Bulletin No. 54, Page 70.
- (b) Recommendations for Honorable Mention shall be made only to Irises not introduced or for Irises introduced during the current year or during the two previous years. The award of Honorable Mention is to be considered a local or regional award, indicating that the Iris was outstanding in particular regions. Five (5) or more recommendations from accredited judges are required to be eligible for Honorable Mention.
- (c) Recommendations for Award of Merit shall be made only to Irises officially registered and which have been in com-

merce in 1933 or earlier and which have in previous years received an award of Honorable Mention. The Award of Merit is to be considered as a National rather than a local or regional award, indicating that the Iris was outstanding in widely separated regions. Seven (7) or more recommendations from accredited judges are required to be eligible for an Award of Merit. A printed list of the varieties having received an Honorable Mention and which are eligible for an Award of Merit will be furnished the judges.

- (d) Recommendations for the Dykes Medal shall be made only to Irises officially registered and which have been in commerce five years. In 1935 this five-year period shall be considered to cover Irises introduced in 1930. The January, 1931, Bulletin No. 38 lists 1930 introductions. Any 1930 introduction omitted from this list is eligible. Under American Iris Society rules, introduction consists of publicly offering plants for sale at a stated price in a catalogue advertisement. Sales in a garden or by letter do not consist of introduction.
- (e) Judges may also recommend Awards of Merit for any foreign Irises introduced during the past seven (7) years. (In 1935 this would mean introductions of and since 1928.)

ANNUAL MEETING, AMERICAN IRIS SOCIETY

NASHVILLE, TENNESSEE

Wednesday, May 1st.

8:30 A. M. Registration of Guests, Information Desk, Hermitage Hotel.

8:30 A. M. to 12:00 Noon. Gardens open.

12:00 Noon. Show open, Hermitage Hotel Loggia.

1:00 P. M. Dutch Treat Lunch, Hermitage Hotel Grill Room.

2:30 P. M. Popular Lecture on Iris, B. Y. Morrison, Hermitage Hotel Assembly Room. Public invited.

3:30 P. M. Gardens open. Show open.

8:00 P. M. Annual Meeting, American Iris Society members, Hermitage Hotel Assembly Room.

Thursday, May 2d.

8:30 A. M. Registration of Guests, Information Desk, Hermitage Hotel.

Gardens open.

1:00 P. M. Dutch Treat Lunch, Hermitage Hotel Grill Room.

3:30 P. M. Picnic for American Iris Society guests, Dauntless Hill, C. P. Connell, host.

Gardens open.

8:00 P. M. Iris Pageant by pupils of Ward-Belmont College, Centennial Park. Public invited.

NOTICE TO ACCERDITED JUDGES, 1935

CORRECTION

In the printed Judge's Ballot under the heading, For Award of Merit, there should be five spaces instead of four. Please make five entries.

Under the heading, For Dyke's Medal, there are three spaces. There should be only two. Please make only two entries.

On the reverse of this same ballot in the group of varieties beginning with the letter S, the list should read:

Sara Cheek, Sonnet, Sacramento, San Diego, Santa Fe, Selene, Shirvan, Spring Maid, Sweet Alibi, Shining Waters, Sierra Blue.

For these errors, the regrets of the Editor, who failed to notice them in the proof. B. Y. M.





BULLETIN
OF THE
AMERICAN IRIS SOCIETY

APRIL, 1935

NO. 57

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THE AMERICAN IRIS SOCIETY

FOREWORD

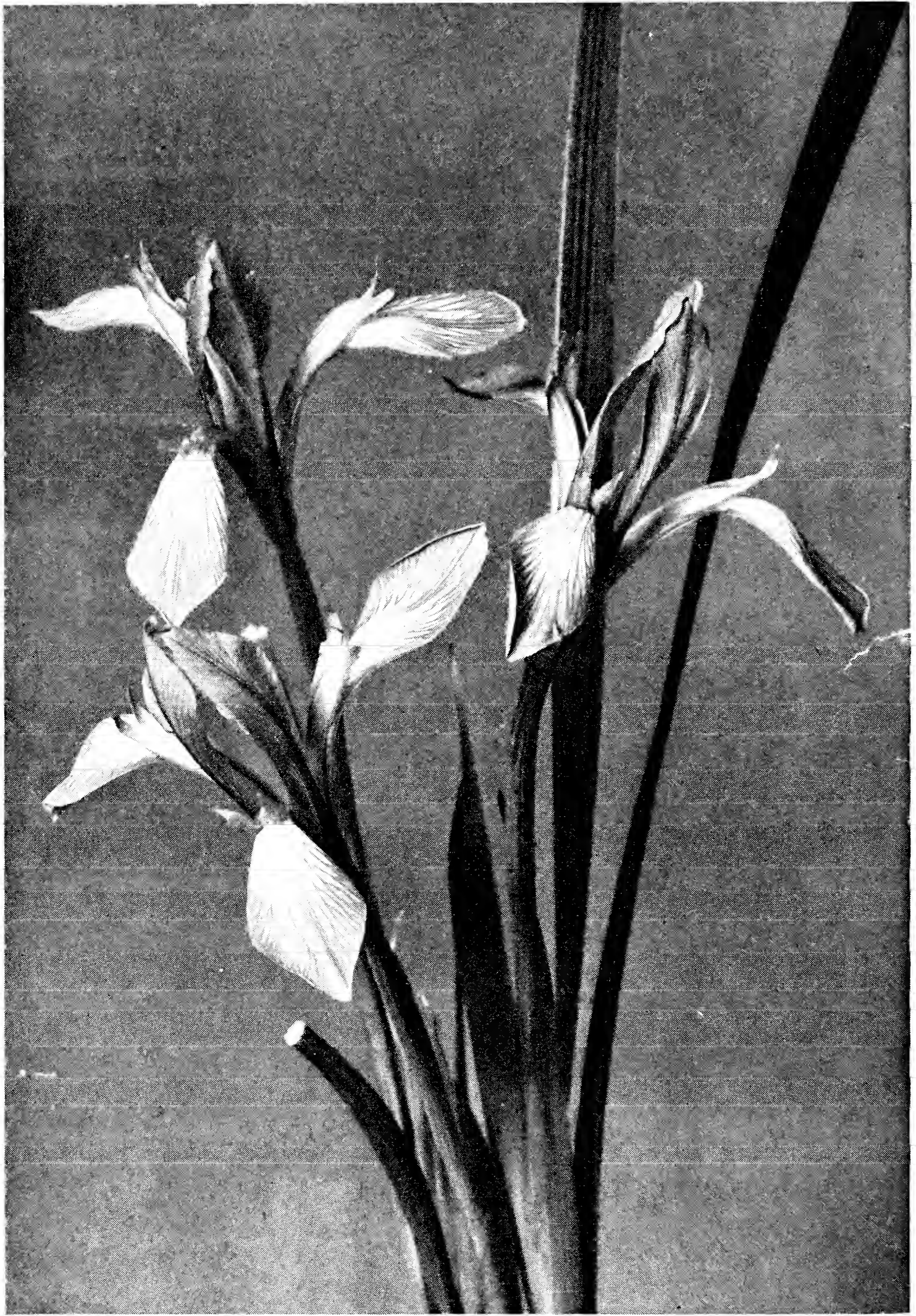
■ Although it has been said before and by more experienced persons than myself, it appears to be increasingly difficult to find new material to offer members in printed bulletins. This is a problem that has been discussed more than once in Board meetings, where it has been freely admitted that without the energy and imagination of Mr. Sturtevant, the BULLETINS of the Society might have lagged sooner than this. Your Present Editor-Secretary admits here that it is almost too much for him!

Just why the membership seems loath to put down its thoughts in writing is an ever present wonder when one hears that it has no objection at all to speaking its mind.

Will you not, therefore, as a member of the Society, sit down now with a paper and pencil and jot down the thoughts that have come to you through the season just passed? What pleased you most? What did you see that was new? What did you resolve to change in your garden planting and why? Did you try any new species and if so, how did they behave? Have you remembered to make notes on any bulbous iris? Are you going to plant any this autumn? Have you any new germination data, on species particularly?

We know you can do it; the question is, will you? There is one director who has *Iris Albertii* but do we get notes and pictures? There is another who grows English iris, but only silence follows requests? If this is so in the small directorial circle, how much truer it must be in the larger circle of the whole membership. Will you help?

B. Y. MORRISON, *Secretary.*



Lilian A. Guernsey

Iris ensata—Natural Size

[See page 100]

THE IRISES OF SOUTHEASTERN LOUISIANA
A Taxonomic and Ecological Interpretation

PERCY VIOSCA, JR.

■ One must have as a starting point a definite plan for allotting to any organism the status of a species. I am not in accord with those who treat of species as objects apart from the rest of nature, bottled or dried playthings of the taxonomist. On the contrary, I adhere to the idea that a species must be considered as part of an environment, a bio-geographic entity which must have reason for its existence. It is not a plaything of man, but a plaything of nature. At the outset the biologist must assume, therefore, that nature's arrangement is orderly, no matter how incomprehensible it may seem. Any confusion that apparently exists is subjective, not objective, for taxonomy should be thought of as the interpretation of natural relationships, not as the creation of an artificial classification.

The findings of the morphologist, the cytologist, and the geneticist are all important and indispensable contributions to the science of taxonomy. I believe, however, that no interpretation of nature's recognizable divisions can be of substantial value unless these divisions are considered also in the light of their ecological relationships which in turn must be considered in reference to their bio-geographic values. Loose statements based on political subdivisions may be permissible in tentative check lists for want of more complete data, but should be taboo in a modern taxonomic paper. General statements such as "Its range extends from North Carolina to Louisiana" are usually more confusing than helpful unless linked with these ecologic and bio-geographic concepts of a species.

Louisiana and particularly southeastern Louisiana is the ecologist's jig-saw puzzle. To assist within definite limits in determining the orderly arrangement of the pieces of this puzzle has fallen to my lot. Whereas amphibious animals have been, to a large extent, my key pieces in the puzzle, the plants associated with them, also being essential features, have thrust themselves into the picture. Notable among these are the irises, for they are found in this region almost wherever amphibious animal life is found.

I had already set out to determine the extent to which the irises could be utilized in solving this problem when Dr. John K. Small's

publications (1927 and 1929) describing several of them as new species, came into my hands. This at first tended to obscure the picture, but the subsequent painstaking investigations of Small and Alexander (1931) and their detailed descriptions of a large number of the forms occurring here have at least saved me much gasoline and midnight oil.

My tentative solution of that part of the puzzle which pertains to the irises is graphically illustrated in the accompanying map showing the zonal distribution of the Iris species of southeastern Louisiana (Fig. 8). I realize the study is not complete in many details and that experimental work and studies in genetics have only just begun. I believe, however, that only by giving more attention to ecological and distributional factors we may arrive at a more lasting taxonomy.

ACKNOWLEDGMENTS

The inspiration to undertake this research dates back several years to a conversation with the late George Thomas, 1865-1934, a well known horticulturist of New Orleans and, during his last years, superintendent of the New Orleans Parking Commission. Mr. Thomas was perhaps the first to note the great diversity of the wild irises in the vicinity of New Orleans and to bring a large number of them under cultivation. Because of my pleasant relations with Mr. Thomas and his encouragement and enthusiasm, I respectfully dedicate this contribution to his memory.

Henry B. Chase, Jr., and O. F. R. Bruce have been of great assistance in the field work. Dr. John K. Small has been kind enough to point out some of the localities from which certain of his types were taken. Mr. Bruce and Dr. William T. Penfound have read the manuscript and have offered many helpful criticisms and suggestions. To these and many others who have been of assistance in one capacity or another, I offer my most sincere thanks.

TAXONOMY

In this paper my criterion of an Iris species is a large aggregation of plants with reasonably definable similarities of structure, freely inter-breeding wherever in sufficiently close proximity, the separate colonies of which have similar ecological requirements, and the aggregation as a whole having a geographic range which can be defined in terms of physiographic features and throughout

which colonies are found in all suitable localities.¹ By this criterion I recognize only four species in the region of this study. The large majority of the forms described from the same region by Small and Alexander (1931) and innumerable others yet undescribed, I interpret in part as variants and in part as natural hybrids.

All species and hybrids recognized herein are crestless, beardless and rhizomatous and belong, therefore, to the Apogon section of the Genus *Iris*. In the majority of the local forms a minute pubescence adorns the base of the sepal blade, taking the form of a single color stripe or ridge (called herein the basal midrib), multiple colored ridges or a colored blotch. Representatives of two general subdivisions of the Apogon section are recognized here. One is the *Virginica* subsection as defined by Waller (January, 1931) [Group *Versicolores* Small and Alexander (1931)]. In this subsection the ovary is three-angled. It is represented in Louisiana by one species, *I. virginica* L. as interpreted by Anderson (1928).

The remaining three species are somewhat closely related and belong to the generally accepted *Hexagona* subsection in which the ovary is six-angled. One of these, *I. foliosa* Mackenzie and Bush is a low growing species and the other two, *I. fulva* Ker-Gawler and *I. giganteaerulea* Small are tall. Natural hybrids between the two tall species are common in certain sections.

In the keys and descriptions below, the usage of color terms follows "A Dictionary of Color" by Maerz and Paul (1930).

KEYS FOR THE IDENTIFICATION OF THE NATIVE IRIS SPECIES OF SOUTHEASTERN LOUISIANA²

I. When Flowers Are Not Available

- a. Mature leaves with a prominent thickening or midrib; normally growing in sandy acid soil (pH 4.8 to 6.8).
 - 1. *I. virginica*
- aa. Mature leaves sword-like, without a prominent midrib; normally growing in circumneutral soils (pH 6.0 to 8.0).
 - b. Mature leaves rarely over two feet in height; length of leaf less than 30 times its greatest width; normally growing

¹The destructive influence of civilized man may cause exceptions to this last general proposition.

²Since these keys have been worked out on Southeastern Louisiana plants and for Southeastern Louisiana conditions, workers in other sections must apply them with caution.

in silt of loessal origin which has been reworked by small streams. 2. *I. foliosa*

bb. Mature leaves over two feet in height; length of leaf over 30 times its greatest width.

c. Mature rhizome relatively small, averaging $\frac{5}{8}$ inch or less in diameter; distance between furcations of rhizome normally less than 5 inches; normally growing in stiff clayey soil of alluvial origin, usually along the edges of cypress sloughs and swamps. 3. *I. fulva*

cc. Mature rhizome relatively large, averaging about $\frac{7}{8}$ inch to 1 inch in diameter; distance between furcations of rhizome normally more than 5 inches; normally growing in mucky clay in or at the edge of fresh or slightly brackish water marshes and swamps near sea level. 4. *I. giganteaerulea*

ccc. Mature plants with rhizome characters intermediate in size between those described under c and cc; normally growing in deltaic sloughs or swamps in the vicinity of sea level marshes.

5. Natural hybrids;¹ *I. fulva* x *I. giganteaerulea*

II. When Flowers Are Available (FIG. 1)

- a. Ovary 3-angled; bracts normally bearing two flowers each, more rarely 1 or 3; flower stalks slender and rod-like; over fifteen inches, normally branched at each node, the branches long and carrying their flowers at nearly the same level as the terminal flowers; dominant flower color normally hyacinth violet or lavender, with prominent veins of darker purple; pure albinos rare. 1. *I. virginica*
- aa. Ovary 6-angled; all bracts except the terminal one normally bearing one flower each, these being borne at different levels on the stalk, the terminal bract normally bearing two flowers.
- b. Leaves considerably taller than the flower stalks; flower stalks relatively thick and short, less than fifteen inches, usually very zigzag, often prostrate; branches, if any, very short, the lowest flowers borne at the base of the main stalk; dominant flower color normally shades of wistaria or

¹Hybrids whose rhizome characters closely approach those of either of the parental stocks are difficult to distinguish as such by these characters and, in territory where they are likely to occur, final positive identification of hybrids, and even of parental species, cannot be risked except in the blooming season.

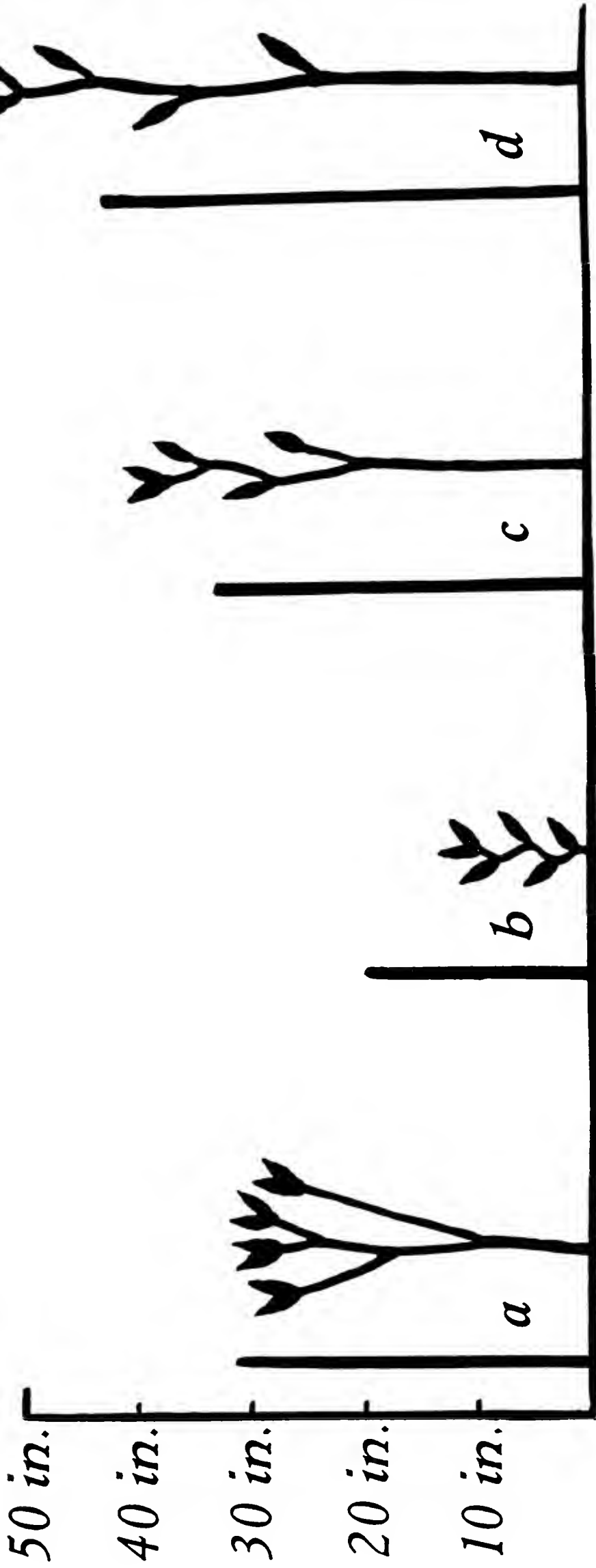


FIG. 1.—DIAGRAMMATIC ILLUSTRATION OF AVERAGE FLOWER STALKS OF SOUTHEASTERN LOUISIANA IRISES showing height, the normal number of flowers to each bract and other structural characters. The accompanying bar on the left in each case represents the average height of the straightened leaf. *a*, *virginica*; *b*, *foliosa*; *c*, *fulva*; *d*, *giganticaerulea*. Natural hybrids normally exhibit leaves and stalks between the types illustrated in *c* and *d*, but never in any case even remotely suggestive of *a* or *b*.

blue-violet, with darker blue veins; pure albinos rare.

2. *I. foliosa*

bb. Flower stalks always erect and tall, over 15 inches, and with rare exceptions¹ equalling or exceeding the leaves in height during the blooming season.

c. Sepals without a prominent basal midrib; claw short, not over 1/5 the total length of the sepal; flowers varying from dark cardinal through various shades of brick or coppery red, Indian red, henna, chinook, terra-cotta, and apricot to golden and chrome yellows, the lighter shades and especially the yellows being very rare; no albinos; anthers normally exerted.

3. *I. fulva*

cc. Sepals with a prominent pubescent ridge or midrib, normally orange-yellow, in the base of the blade; basal midrib usually accompanied by two or more shorter lateral ridges of the same color, also somewhat pubescent; claw long, over 1/3 the length of the sepal; flowers varying from columbine blue through various shades of violet to white, and yellowish white; albinos more frequent than in other species; anthers included.

4. *I. giganteaerulea*

ccc. Claw, sepal and color characters intermediate between those described under c and cc; flowers, usually some shade of purple or red purple.

5. Natural hybrids; *I. fulva* x *I. giganteaerulea*

DESCRIPTION OF SPECIES

Iris virginica L., Sp. Pl. ed. 1, 39. 1753.

Iris carolina Radius, Naturforsch. Ges. Leipzig Schrift, 1: 158, pl. 3. 1822.

Iris Shrevei Small, Addisonia 12: 13-14, pl. 391. 1927.

Leaves tall and relatively wide, strong, and with a prominent midrib when mature; length from 25 to 35 inches on mature plants; width from 1 to 1¾ inches; the length usually varying between 25 and 30 times the maximum width.

Rhizome very stout, normally ¾ to 1 inch in diameter, usually

¹The chief exceptions occur in adverse situations, such as poor or dry locations, or where choked out by competitive species such as willows whose profuse spongy roots deprive the irises of water. It is apparently a general rule that the greater the amount of water during and just prior to the blooming season, the taller the flower stalks and the greater the number of blossoms produced.

with a profusion of wrinkled roots and fine fibrous rootlets; distance between furcations on mature rhizome variable, usually from two to eight inches, sometimes longer; normally one branch only is produced on either side at each furcation.

Flower stalks slender and rod-like, medium in height, usually from 20 to 36 inches, erect, branched at the nodes (Fig. 7); the lateral branches bearing their flowers at nearly the same level as the terminal flowers; the bracts normally bearing two flowers each, more rarely 1 or 3.

Flower color. The dominant color is usually some shade of hyacinth violet or lavender with veins of darker purple; pure albinos are rare, but there are many clones¹ with a light lavender or white ground color, the dark purple venation on these giving the appearance of delicate etchings.

Sepals 2 to 3 inches (Fig. 6); the claw long and trough-like, 1 to 1½ inches, equal or nearly equal to the length of the blade, usually brassy-green with prominent longitudinal purple veins in the middle and prominent lateral veins of the same color on the wide wings; the blade ovate, 1¼ to 2 inches, recurved spreading, with a pubescent basal midrib which extends nearly one-half the length of the blade; midrib brassy-yellow or some related shade and surrounded by a zone of the same color, the whole forming a conspicuously pubescent blotch at the base of the blade; the basal blotch in turn is surrounded by a white or light lavender zone with prominent purple veins (except in pure albinos), the light zone merging into the hyacinth violet or lavender zone on the outer half of the blade.

Petals obovate-spatulate, shorter than the sepals, of the same color and with a brassy-yellow claw.

Capsules elliptic in longitudinal section, somewhat three-angled in cross section; the number of seed rows to each carpel is either one or two, but is variable, two being more frequent than one, the average of twenty measurements from a colony near Bush, Louisiana, being 1.6; variations may occur in different levels in the same carpel, in different carpels in the same capsule, and in different capsules on the same plant, in many cases the seeds overlapping

¹An iris CLONE is a group of plants which have originated from a single seedling by rhizome propagation. The term refers to a lesser aggregation than the term COLONY, which is a group of plants originating from more than one seedling and consists of two or more clones more or less isolated from other groups of plants of the same species by minor physiographic barriers.

in the carpel indicating a condition intermediate between single and double rows.

Relationships. I concur in the opinion of Anderson (1928) that all southern irises of the *virginica-versicolor* complex belong to the single Linnaean species *I. virginica*. Anderson has shown the type of *I. shrevei* Small from Farmington, Arkansas, and *I. carolina* Radius from the Carolina Coastal Plain to be synonymous with *I. virginica* L. Although I recognize that differences not discussed by Anderson may exist between the types of *shrevei* and *carolina*, it is difficult to separate these two forms in southeastern Louisiana, as the distinguishing characters pointed out by Small (1927) overlap here. It would appear from preliminary observations that in poorer acid soils the *carolina* characteristics tend to dominate, whereas adjacent to the river valleys or lake shore swamps where the soil is richer, the *shrevei* characters apparently predominate. There is, however, environmental continuity, there being no significant geographic barriers throughout their range in the region of this study. In any particular locality there is much variation, and where the habitat also varies somewhat, it is often difficult to distinguish between the hereditary characters and those caused by environmental influences.

In view of the fact that the irises of the *Virginica* subsection, as represented in southeastern Louisiana, bridge to a great extent the gap between *shrevei* of northwestern Arkansas and those of the same group found farther east in the Atlantic coastal plain (viz., *I. carolina* Radius) and further that apparently none of the three aggregations form distinct and separate ecological units confined each to a well defined phyto-geographic zone, I am forced to the conclusion that the differences at best are only of sub-specific significance. Small and Alexander (1931) are inclined to believe that specimens of *I. virginica* L. from Gloucester, Virginia, its probable type locality, differ from *I. carolina* Radius. If the southeastern and northern forms of *virginica* differ to any extent, and there is some evidence tending to indicate differences, the name *carolina* will have to be brought back into usage again, even if only as of sub-specific significance. After further study it may be found that the use of the terms *virginica*, *carolina* and *shrevei* may be convenient for distinguishing the northern, southeastern and mid-western geographic races of *virginica*.

Specimens resembling *carolina*, found in the poorer sections of

the acid coastal plain belt east of Louisiana, apparently overlap in the region of our study the range of a form with traits very suggestive of the type of *shrevei* from Farmington, Arkansas, but to what extent if any these traits may be influenced by the environmental differences remains to be determined by experiment. That there are different races I have no doubt, although the characters upon which they may be based will probably differ from those which Anderson (1928) has chosen in his admirable work. I have seen strikingly different capsule, seed and leaf characters which apparently have regional significance and I believe that further study from a phyto-geographic standpoint will show a correlation between these racial trends and the major watersheds in which they are isolated, such as those of the Red River, the Arkansas, the upper Mississippi and Ohio, and the Atlantic Coastal Plain. Because of the geographic position of southeastern Louisiana, one would expect the *I. virginica* of that region to be a mixture of all races, as seeds from all of these watersheds would have found their way eventually into southeastern Louisiana. The facts as gathered in this preliminary study seem to bear out this assumption, for here there is apparently a well crossed combination of all races with the resultant extreme variation of the species in this region. In fact, the aggregation will be found to contain quite a number of distinct horticultural varieties.

Supplementary Remarks. *Iris virginica* exhibits the most beautiful foliage of any species in southeastern Louisiana. The leaves are broad, practically evergreen, of a brilliant dark green color, and because of their stout midribs, stand erect except for a very graceful bending of the upper ends of the taller leaves. The flowers are usually large and attractive in the richer situations and the petals conspicuously large, often approaching the sepals in size. While different patches vary in height, in any particular clone the flowers are usually at about the same general level, this being a little lower than the maximum height of the gracefully bending leaves. This and the characteristic branching of the flower stalks give the plants a distinctly different aspect in woods or garden from the other irises found in this region. They begin blooming normally in late March and finish in the early part of May.

Iris virginica belongs properly to the Coastal Plain, where it subsists chiefly throughout the pine lands in acid sloughs and

swamps normally with a sandy subsoil (Figs. 7 and 8). It tolerates a higher acidity than any other southeastern Louisiana species, surviving alone when the pH remains constantly below about 6.0. Its best development, however, occurs along the borders of the richer deltas of rivers which traverse the non-calcareous portions of the Coastal Plain, such as the Pearl, the Tchefuncta and the Tangipahoa rivers and at the edge of the coastal swamps and marshes bordering this province on the south. With some breaks in the continuity it even encircles Lake Pontchartrain, although south of this lake it seems to cling closely to the rear of the strand where the muck shows an admixture of lake sand of Coastal Plain origin and develops a greater acidity than the soils bordering the deltaic ridges. The western limit of its range in our territory is immediately east of the Tickfaw River Valley.

Iris foliosa Mackenzie and Bush, Trans. Acad. Sci., St. Louis, 12: 81, 1902.

Iris flexicaulis Small, Addisonia 12: 11, pl. 390. 1927.

Iris brevipes Small, Contr. N. Y. Bot. Gard. 327. 1931.

Iris mississippiensis Alexander, Contr. N. Y. Bot. Gard. 327. 1931.

Leaves much shorter than in the other Louisiana species, relatively wide; length 15 to 25 inches on mature plants, rarely longer; width $\frac{7}{8}$ to 1 inch; the length about 25 times the greatest width; shape somewhat like a knife when mature and without a noticeable midrib, except for a thickening at the base or "handle of the knife."

Rhizome variable, $\frac{1}{2}$ to 1 inch in diameter; roots long, 10 to 14 inches, not much branched near surface of the ground, but more or less profusely branched near their extremities; distance between furcations on mature rhizome from 3 to $6\frac{1}{2}$ inches; rhizome usually profusely branched at each furcation, there being generally three branches, sometimes four or more, on either side.

Flower stalks relatively thick, shorter than in any other Louisiana species, about eight inches long, oval in section, usually very zigzag (Fig. 1), often prostrate, sometimes with very short lateral branches at the nodes; the lower bracts normally bearing one flower each, the terminal bract, two; the flowers borne from near the base of the stalk, and always down amidst the foliage.

Flower color. The dominant flower color is a wistaria or blue-

violet, with darker blue veinings which are not prominent although more noticeable in the lighter colored flowers; pure albinos are rare.

Sepals 2½ to 3 inches (Fig. 6); the claw long and narrow, about 1½ inches, a little shorter than the blade, usually pale green with darker green veins; the blade orbicular oval, 1½ to 1¾ inches, ascending spreading; the basal midrib yellow, prominently pubescent and usually about one-half the length of the blade; a white zone with blue veining usually occupies the basal third of the blade, although sometimes it extends up into the blade beyond the end of the midrib (*I. mississippiensis* Alexander); the outer portion of the blade is some shade of blue violet within the color range of the species.

Petals large, oblanceolate, only slightly shorter than the sepals, scarcely clawed, tapering gradually to the base, wistaria or blue-violet, becoming paler or white in the basal third.

Capsule ovoid or ellipsoid, hexagonal in cross section, each carpel with two sharp longitudinal ridges.

Relationships. The irises representing this species would fall within the limits of Small's Group Hexagonae (Small and Alexander, 1931), which has narrower limits than the generally accepted arrangement. It is difficult to tell, from literature on the subject, the extent to which Small and Alexander's type descriptions apply over a geographic range beyond the original clones from which their types were selected. Suffice it to say that, although not as variable as the preceding species, the representatives of this group in Louisiana present variations throughout their range, but the variants have similar ecological requirements and there is no zonal distribution peculiar to any particular form. Furthermore, they vary in several ways from a common average, with almost infinite gradations. Therefore, unhesitatingly, I express the opinion that all forms of Dr. Small's group Hexagonae described from Louisiana represent only variations of a single species.

Small's *I. flexicaulis* (1927), which he admits is related to *I. foliosa* Mackenzie and Bush from Missouri, certainly takes priority over *I. brevipes* Small and *I. mississippiensis* Alexander (Small and Alexander, 1931). Just why Small should drop the use of the term *flexicaulis* without an explanation only adds to the confusion. As *brevipes* and *mississippiensis* only differ in the amount of white at the base of the sepal blade, a very variable character, and as

the description of *flexicaulis* antedates the descriptions of these, the term *flexicaulis* for the Louisiana aggregation would have priority if further study should warrant a subspecific distinction from the type of *foliosa*. The forms *brevipes* and *mississippiensis* are only two of a number of overlapping variations.

Whether Small's Hexagonae group as a whole represents one or two separate ecological niches, I am not in a position to state at this time. Small's sub-groups "Hexagonae prostrate" and "Hexagonae erect" do suggest differences which are probably specifically distinct. Tentatively I am inclined to consider all of the prostrate forms as a single separate species which includes all of the Louisiana variants and suggest the use of the term *I. foliosa* for the entire Louisiana aggregation until a revision of this subsection of the genus is undertaken by someone with a thorough understanding of their ecology and distribution.

Supplementary Remarks. *Iris foliosa* is the smallest of the iris species found in southeastern Louisiana. Both leaves and flower stalks are shorter than in the other species of the region. The flowers are borne in profusion, and clustered as they are down amidst the foliage, the plants are easily distinguished from the other, taller types. The short flower stalks with their short internodes are normally sub-erect or prostrate, and are nearly always decidedly zigzag. The comparatively low growing foliage and the prominent pubescent basal midrib in the sepal are in a sense more suggestive of the bearded irises than any of the other southern species. *I. foliosa* is the most nearly blue flowered of the Louisiana species. The flower itself bears a resemblance to that of the tall-stalked *I. giganteaerulea*. *I. foliosa* is the latest flowering species in our range, normally flowering during the month of May.

In southeastern Louisiana *foliosa* seems to be confined to the loessal or so-called bluff deposits, where it is found in depressions with sluggish drainage and along sluggish streams (Figs. 7 and 8). Although the lime content of the soil is rather high in this region, the humus layer may be slightly acid (around pH 6.6), probably due to the decomposition of the leaves of various oaks and other trees common to the region. The range of *foliosa* in southeastern Louisiana extends from the bluff deposits just east of the Mississippi Valley eastward to and including the Tickfaw River Valley. Here it meets the range of *virginica*, the limits of the two zones being sharply defined without overlapping.



FIG. 2.—IRIS FULVA KER-GAWLER. Unique among beardless irises because of its fulvous color tones, this species is evidently the "red" ancestor of the Louisiana hybrids. Both sepals and petals are practically uniform in color, usually a brick or coppery red. The flower can also be distinguished by its practically clawless sepals and petals, and the absence of a pubescent midrib in the base of the sepal blade. Both sepals and petals usually droop shortly after opening, especially in sunny situations.

Iris fulva Ker-Gawler, Bot. Mag. *pl.* 1496. 1812.

Leaves tall, relatively narrow and sword-like; length 25 to 40 inches on mature plants; width usually about $\frac{3}{4}$ inch; the length usually varying between 35 and 50 times the maximum width, average about 40 times.

Rhizome relatively small, usually about $\frac{5}{8}$ inch in diameter on mature plants; distance between furcations on mature rhizome usually 4 to $4\frac{1}{2}$ inches; rhizome profusely branched at each furcation, the normal number of branches under favorable conditions being three on either side.

Flower stalks erect and tall, 25 to 45 inches, of medium thickness, slightly zigzag; the flowers normally borne at different levels on the stalk (Fig. 1), although rarely the basal flower may show a separate stalk as in *carolina*; the lower bracts normally bearing one flower each, the terminal bract, two; the flowers, especially the terminal ones, are borne well above the level of the leaves.

Flower color. The dominant flower color is a brick or coppery red varying toward dark cardinal on the one hand and toward chrome yellow on the other. Indian red, henna and chinook are among the more common variants, whereas more rarely one finds terra-cotta and apricot tones. Among the yellows, which are very rare, have been found copper lustre, yellow ochre, sunstone, golden glow and chrome yellow.

Sepals 2 to 3 inches; the claw very short and not sharply demarcated from the blade, usually about $1/5$ or $1/6$ the total length of the sepal and of nearly the same color as the blade except that the midportion may be yellowish, especially toward the base; the sepal is normally without a noticeable basal midrib, except for very weak twinned midribs in the claw which do not extend noticeably into the blade (for variants see discussion); the blade is nearly uniform in color, oval or nearly so, drooping more than in any other local species (Figs. 2 and 6).

Petals about $2/3$ as long as the sepals, narrowly obovate, not clawed, notably drooping, and of the same color as the sepals or nearly so.

Appendages of the style branches, barely toothed; anthers exerted.

Capsule ellipsoid to ovoid, hexagonal in cross section.

Relationships. *I. fulva* does not seem to be easily confused with any other species throughout its range. Only in the delta regions of south Louisiana are there any other irises closely resembling it. All of these the author has interpreted as natural hybrids between this species and what appears to be its nearest relative, *I. giganteaerulea*.

Supplementary Remarks. *Iris fulva*, other than for color variations, is perhaps the least variable of the species coming within our range. Its characteristically tall stalks, when in moist situations, bear the flowers well above the sword-like leaves which show a tendency to bend over. In sunny situations both sepals and petals droop rather quickly after opening, especially in hot weather, and the red color fades more or less toward afternoon. In shady situations the flowers do not droop or fade as much and present a more beautiful appearance. *I. fulva* normally begins flowering in late March, the season extending into the early part of May. The climax is reached about the middle of April.

There seem to be two color pigments in the flowers of *I. fulva*, one apparently a dark cardinal red and the other a chrome yellow, both of which, however, are usually diffused throughout the entire flower. The yellow sometimes predominates on the underside, especially near or on the claw, whereas the red sometimes shows a greater concentration on the upper side near the midvein. It is the blending of the two pigments in relatively different amounts which produces the various colors described. The yellow pigment may be almost obscured by the dark cardinal in the darkest shades of *fulva*, whereas a partial or total absence of the red produces the lighter tones or pure yellow flowers.

In some localities where *I. fulva* is found alone at the present time, there is an occasional clone with a small single midrib which extends slightly into the sepal blade (near *I. fulvaurea* Small), or with the slight double crest of the claw extending further than usual into the blade. The author believes this to be evidence of former hybridization with *giganticaerulea* which latter species has in the course of time been pushed southward as the land levels have been built up by deltaic streams. This will be discussed more fully later under natural hybrids.

The rhizome of *I. fulva* averages smaller than in any other species in this region, and is the most profusely branched with the exception of that of *foliosa*.

In southeastern Louisiana, *Iris fulva* belongs exclusively to the Mississippi floodplain, which includes the lower Amite River Valley. It is found in the stiff clayey soils characteristic of the banks of silt laden streams and the flat lands bordering the cypress swamps on the far sides of the ridges formed by deposits from such silt laden or deltaic streams. If the abandoned channel of a former deltaic stream is sufficiently shallow, *fulva* may occupy the entire stream bed. It does not occur along swamp drainage bayous,¹ as these are not of deltaic origin and, therefore, lack appreciable alluvial ridges. The top soil of such bayou banks contains a higher percentage of muck than the deltaic deposits and this is evidently not suitable for the growth of this species. *Iris fulva* follows the deltaic formations almost but not quite to sea level. When the sea level fresh water zone is reached, *fulva* is replaced by *giganticaerulea*. Under certain conditions there is an overlapping zone where hybrids between *fulva* and *giganticaerulea* may be common and where they sometimes occur in almost endless variation.

¹For definition of swamp drainage bayou see section on Ecology and Distribution.



FIG. 3.—*IRIS GIGANTICAERULEA* SMALL. This, the largest-flowered species in our range, is evidently the blue ancestor of the Louisiana hybrids. The color is usually a columbine blue, but there are many variations. The sepal claw is long and sharply demarcated from the blade. The basal midrib is strong and usually flanked by several radially spreading, pubescent lateral ridges. A white zone is usually present in the base of the sepal blade. The sepals usually spread outward and curve downward gracefully; the petals are generally sub-erect.

Iris giganteaerulea Small, *Addisonia*, 14: 5, *pl.* 451. 1929.¹

Leaves tall, relatively narrow and sword-like; length 35 to 50 inches and sometimes longer; width usually $\frac{3}{4}$ to $1\frac{3}{8}$ inches wide; the length of the leaf usually varying between 35 to 50 times its maximum width, average about 40 times.

Rhizome very large, usually $\frac{7}{8}$ to $1\frac{1}{4}$ inches in diameter on mature plants; distance between forks on mature rhizomes usually 7 to 12 inches in wet situations; number of branches at each furcation varying from 1 to 3 on either side, the average on large plants usually being between one and two on either side.

Flower stalks erect, tall, and nearly straight, usually 40 to 60 inches, sometimes longer, very stout; the flowers borne at differ-

¹A number of forms described in Small and Alexander's *Bot. Int.* 1931 will probably be referred to this species. As the synonymy has not been worked out fully as yet because of difficulties which have presented themselves, synonyms will be omitted here. A number of them will be mentioned, however, in the pages which follow.

ent levels on the stalk (Fig. 1); the lower bracts normally bearing one flower each, the terminal bract, two; the flowers, especially the terminal ones, usually borne well above the leaves, which droop somewhat.

Flower color. The dominant flower color is columbine blue, the darker shades varying toward lobelia, the lighter ones through shades of wistaria and lavender to white. Creamy and ivory toned whites (*elephantina*) are known. Albinos are more frequent than in the other species. The type form of *giganticaerulea* shows a white zone at the base of the sepal blade.

Sepals $3\frac{1}{2}$ to $4\frac{1}{2}$ inches long; the claw very long, one-third to one-half the total length of the sepal and sharply differentiated from the blade, usually greenish or creamy white with longitudinal greenish veins in the mid-portion; the blade oval or orbicular oval, descending spreading; a prominent basal midrib extends outward, usually for about half the length of the blade, this accompanied by one or more smaller but noticeable lateral ridges on either side (Figs. 3 and 6); these ridges all pubescent and normally some shade of yellow; the zone adjacent to the midrib in the base of the blade usually white, but may be yellow toned, there being variations in the latter from creamy white to chrome lemon (*citricristata*); the light color may, rarely, be absent, it may be restricted to a small area in the base of the blade or it may extend outward over as much as 50% of the blade; the outer portion of the blade is usually some shade of blue violet within the color range of the species (except of course in albinos), but may be streaked with white veinings which may extend almost to the margins.

Petals cuneate-spatulate, shorter than the sepals; the blade color nearly the same as the sepals, whitish at the base.

Appendages of the style branches deeply lacerate-toothed; anthers included.

Relationships. The probable relationship of *giganticaerulea* to other North American irises not found in Louisiana may not be fully answered in this paper. Three Floridian forms described as species by Small (1924, 1927), *kimballiae*, *savannarum*, and *albispiritis*, seem to occur in the same type of habitat in Florida that *giganticaerulea* and its variants occupy in Southeastern Louisiana and Mississippi. The differences between the types of *savannarum*, *kimballiae* and *albispiritis* are certainly not greater than those of

the different variants of *giganticaerulea* in Louisiana. Furthermore, the differences between the Florida and Louisiana aggregations as a whole do not seem to be any greater than one would expect to find in variants of any non-migratory species separated by such a distance as divides these. Therefore, pending further study, I am inclined to the opinion that *giganticaerulea* and *savannarum* are geographic races of the same species, and the other Floridian forms mentioned, merely local variants. All belong to what might be termed sub-maritime portions of the Lower Coastal Strip of the Coastal Plain. These formations consist chiefly of deltaic and lagoonal marshes and savannas practically at sea level, but preponderantly fresh. There is no essential difference in their biota in the two states, most of the differences being of subspecific significance except for an admixture of Mississippi Valley species in Louisiana. Although the term *savannarum* would take priority over *giganticaerulea* if my opinion were correct, I am using the latter term in this publication as I have not yet completed my study of the Florida plants nor observed them in their native environment.

Supplementary Remarks. The irises included in this species, as herein interpreted, are very variable as to size of the plants and also as to size, shape, color and markings of the flowers. It is sometimes difficult, however, to tell whether a size difference in a particular case is the result of hereditary or environmental influences. Plants growing in rich mucky situations invariably exhibit larger rhizomes and taller leaves and stalks than do plants in poorer or drier situations. Plants producing a tall leaf growth in the winter may not develop the usual taller flower stalks if the habitat becomes dry just prior to the flowering season. Under cultivation, such phenomena have been noted by the author in a number of cases, indicating that the height of leaves and stalks varies considerably with moisture and soil conditions. Not all variations of this nature, therefore, can be assigned to heredity by field observation alone. The depth of the lacerations of the style branches and of course the shape, color and markings of the flowers are among the hereditary variations.

Within the geographic range of the species in Louisiana, in habitats where hybridization with *fulva* is not likely to occur, there are a number of variations within the limitations of the species as defined herein which Small and Alexander (1931) have seen fit to describe as separate species. As these vary, however, in dif-

ferent directions from a common average through infinitesimal intergradations, and as the ecological requirements are similar for all forms, I am inclined to group them all as variants of *giganticaerulea*, the first of the group to be described. Most of them are color variants only. In fact, the color variations in the group as a whole are almost endless.

There seem to be only two color pigments in *giganticaerulea*. One is a columbine blue confined chiefly to the blade proper, being usually more intense toward the periphery, the other a chrome yellow confined chiefly to the pubescent ridges in the basal region. The yellow and blue zones are usually, but by no means always, separated by a white zone. In some variants the blue zone is flecked or streaked with white, in others the blue may be streaked into the white zone at the base of the blade. A significant variant worthy of separate mention because of its relative abundance (*I. citricistata* Small) differs from the type of *giganticaerulea* chiefly in the total absence of a white patch on either side of the basal midrib. This, in my opinion, is due to a greater diffusion of the blue pigment in the base of the blade. This, blending with the yellow pigment, gives the ridges and surrounding light color patch a lemon tone. Variations may also be produced in almost solid color effects by dilution of the color, producing various degrees of albinism down to pure white (*I. miraculosa* Small).

The distribution of the yellow pigment also varies. It may be confined as in the typical form to a strong central ridge and one or more radiating laterals on either side, or it may be confined to the central ridge and the zone immediately adjacent to it, producing a lance-shaped effect (group *Lancicristatae* Small and Alexander), or it may be confined to the central ridge alone. Forms with a diffusion of blue adjacent to the midrib usually have a lemon or citron crest as in *citricristata*. In one clone the blade was found to be a solid dark blue to the very edge of the midrib without any lighter zone, and the midrib in that case was a brilliant citronelle green, showing that the blue was well blended with the yellow of the midrib. On the other hand, I have seen the yellow diffused partly into the white zone, producing a yellow candle flame effect with a lighter halo. There are also albinistic forms with a total absence of blue but with a diffusion of yellow, producing yellow-toned, creamy or ivory whites (*I. elephantina*, Small), and I have found one small clone of solid chrome lemon, indicating a com-

plete diffusion of the yellow throughout the blade. As this last named form occurs in a locality where there is considerable hybridization with *fulva* taking place, it is possible that there may be some taint of *fulva* in it, although the other diagnostic characters would place it in a category with the albinos of *giganticaerulea* which are fairly common in that immediate locality and are sometimes tinged with yellow.

I have not seen all of Small and Alexander's types, but from their descriptions I am inclined to believe that a number of others described by them as species are also variants of *giganticaerulea* and not hybrids with *fulva*, although without seeing them or knowing the exact localities where they were taken an opinion may be of little value. The following forms appear to be variants of *giganticaerulea* or at most hybrids very close to the *giganticaerulea* parent: *iocyanea*, *ioleuca*, *cyanantha*, *bifurcata*, *viridis*, *iodantha*, *gentilliana*, *lancipetala*, *cyanochrysea*, *paludicola*, *alticristata*, *fluviatilis*, and *parvicaerulea*.

Iris giganticaerulea, including its Floridian relatives, is the southernmost as well as the most nearly coastal of the North American irises. It belongs to those fresh water areas which are at or very near gulf level. Their habitat, therefore, is subject to inundation by high waters caused chiefly by east winds on the Gulf (Figs. 7, 8, 9, and 10). Being the only iris belonging truly to sub-maritime portions of the Coastal and Mississippi Alluvial Plains, it is obviously tolerant of greater salinity than any other Louisiana species.

It occupies the marsh border which lies adjacent to the deltaic and Coastal Plain elevations. The soil here is usually mixed with a considerable percentage of peaty muck consisting largely of the remains of pickerel weeds, reeds, sedges, grasses and other marsh plants. It is in this mucky clay that *giganticaerulea* is found in greatest abundance. It does not matter whether the subsoil is of alluvial or coastal plain origin as long as it is rich and has a high water content. Both the soil water and the marsh water throughout the range of the species in Louisiana cover a circumneutral range (pH 6.2 to 7.6). Although *giganticaerulea* can thrive in a mildly acid environment, it can apparently tolerate a much higher alkalinity than any other species of eastern American iris. Following the streams it extends not only beyond the southerly limits of *I. fulva* or *I. virginica* as the case may be, but even beyond the

southerly limits of the cypress outposts. Although it is found to some extent in the more open cypress swamps near the coast, it is ordinarily found in more sunny situations than any other native species.

I. giganteaerulea is the earliest flowering species in our range. After a normal winter, many flowers open in the early part of March, the climax is reached early in April and the floral picture is usually passed before the first of May.

Wherever a deltaic ridge is intersected by a swamp drainage bayou within the range of the species or where small deltaic ridges penetrate the marshes without a wide border of dense cypress-tupelo swamp, the range of *fulva* encroaches upon the range of *giganticaerulea* and natural hybrids between the two may be expected.

NATURAL HYBRIDS, *I. fulva* x *I. giganteaerulea*

In addition to the four species of Iris and their variants described above, there is still a large number of forms described by Small and Alexander, as well as innumerable others as yet undescribed, which must be considered. These are all found on deltaic ridges adjacent to or in the vicinity of fresh water marshes, viz., those delta formations which lie inland just beyond the limits of the brackish marshes (Figs. 7, 8, 9 and 10). These formations are all in the zone of contact between the ranges of *fulva* and *giganticaerulea*. As this mixed aggregation is believed to be of hybrid origin between the two species named, I shall treat the entire group as a unit. On the whole they are so variable that it is difficult to find a description which fits them all, but the following general considerations may be helpful.

Leaves usually 25 to 50 inches on mature plants, relatively narrow and sword-like and not distinguishable from those of *fulva* or *giganticaerulea*; the width usually averages about an inch; the average length is between 35 and 40 times the width.

Rhizome very variable in size, but usually intermediate between that of *fulva* and *giganticaerulea*, in the majority of forms being between $\frac{3}{4}$ and $\frac{7}{8}$ of an inch in diameter, and with the distance between furcations usually between $4\frac{1}{2}$ and 7 inches. There is usually a correlation between the size of the rhizome and the flower color. Forms with flowers inclined toward fulvous tones as a rule

have much smaller rhizomes than the blue toned forms, whereas the red purples are usually intermediate.

Flower stalks always erect and tall, usually between 30 and 50 inches; the flowers borne at different levels on the stalk; the lower bracts usually bearing one flower each, the terminal bract, two; the flowers, especially the terminal ones, usually being borne well above the level of the leaves. The flowers are never in any event borne down amidst the foliage as in *foliosa* or at one general level as in *virginica*.

Flower color. The dominant flower color in a large majority of the forms included in this group is some shade of red purple or purple, the commoner shades being gloxinia, deep cygnet or other shades coming under the general designation of wine purple. There are variants, however, covering the entire range between the fulvous, coppery, or salmon shades of *fulva* and the columbine blue or wistaria shades of *giganticaerulea*. Forms with albinistic tendencies exhibit shades varying toward rose-wood, old rose, or ashes of roses on the *fulva* side and toward orchid or phlox on the *giganticaerulea* side. Forms with melanistic tendencies vary from dark ruby or raspberry on the one hand toward pontiff or imperial purple on the other.

Sepals vary in size and structure considerably, covering the entire range between those of *fulva* and those of *giganticaerulea* as shown in the accompanying illustrations (Figs. 4, 5, and 6). The claws vary considerably in length, the average being about an inch. The blades generally vary in length between one and three-quarters of an inch and two and one-quarter inches. There is usually a correlation between the relative claw and blade lengths and their colors, those with fulvous tones such as *fulvaurea* (Fig. 6b) having a much shorter claw than those such as *chrysophoenicia* (Fig. 6d), which are some shade of purple and closer in their color characters to the *giganticaerulea* parent. On the other hand, the red purple forms such as *vinicolor* (Fig. 6c) usually have a blade and claw structure intermediate between those of the two parental stocks. The size of the flower also is usually correlated with the structure, but not necessarily so.

The characteristics of the basal midrib and its laterals, described as "crest" characters by Small and Alexander (1931) are also extremely variable. Ridges may be absent or insignificant in those

forms very close to the *fulva* parent. These fall usually in the groups Ecristatae, Bicristatae and Unicristatae proposed by Small and Alexander and the majority of them are inclined toward the fulvous and orange-red tones. On the other hand, there are many with strong yellow or orange midribs, which may or may not carry prominent lateral ridges of the same color. These are inclined toward the *giganticaerulea* parent and their flowers are for the most part some shade of purple or blue purple. They fall mostly within Small and Alexander's groups Unicristatae, Lancicristatae and Tricristatae. The red purple forms, which are largely intermediate in structure between the two parents, fall mostly in the Unicristatae, Lancicristatae, Tricristatae and Coronicristatae groups.

According to my interpretation, Small and Alexander's groupings appear for the most part to be of little significance in showing parental relationships. Furthermore, their terms are so relative that it is not only difficult to classify plants as belonging to one or another of their proposed "species," but it is sometimes difficult to decide to which of their major groups they belong. Some of their groups cover a very wide range of color forms. For instance, in the Unicristatae there are fulvous flowered forms in which there is a small claw of the *fulva* type, but the single ridge is insignificant and does not extend materially into the blade. In the same group there are forms such as *vinicolor* and other red purple types in which the ridge is fairly strong and intermediate between the two possible extremes (Fig. 4). These in turn vary through almost insensible intergradations into extremely stout-ridged blue purple forms such as *violipurpurea*, which are nearer *giganticaerulea* than *fulva*.

In the majority of the hybrids, the length and strength of the basal midrib is rather intermediate between that of *fulva* and that of *giganticaerulea*. The sepals spread outward more or less as in Fig. 4 or may curve downward gracefully as in Fig. 5. Seldom, however, do they droop sharply from near the base as in *fulva* (Fig. 2). In some they may be gracefully recurved toward the tips.

After a very careful consideration of Small and Alexander's so-called "crest" characters, it seems to me that the form and color assumed by this pubescence are of comparatively little significance in classification except for the few general relationships to parental stocks already mentioned. The fact that they are conspicuous does not increase their importance except from a horticultural stand-



FIG. 4.—HYBRID, IRIS FULVA X IRIS GIGANTICAERULEA (near *Iris vinicolor* Small). Hybrids of the *vinicolor* type, probably in the main first generation offspring of *fulva* X *giganticaerulea*, present a number of variations. When the midrib is long and strong as in the flower illustrated, the sepals spread outward and may be recurved toward the tips of the outer margins. If the midrib is shorter and weaker, the sepal may bend gracefully downward as in the next illustration. The petals are usually large and are generally curved upward. The color of the majority of the intermediates is gloxinia or deep cygnet except for the yellow midrib in the base (for variants among the hybrids see text).

point. In order to throw more light on the probable relationships of the hybrids, I have endeavored to find characters more fundamental than the color or structure of the pubescent ridges in the base of the blade. Fig. 6 is the result of such a preliminary study of the four native species and three of the forms which I believe to be the result of natural hybridization between *fulva* and *giganticaerulea*. Direct contact prints of sun-bleached pressed sepals were made on photographic paper and enlarged photostatic copies made therefrom. Drawings with black pencil were made directly over these enlargements to emphasize the veins and white ink was used to obliterate the unnecessary details and defects and these were again photostated. Both negatives and positives were retouched and the photoengraving made from the final copy.

It can be seen from Fig. 6 that each of the forms I regard as



FIG. 5.—HYBRID, IRIS FULVA X IRIS GIGANTICAERULEA (near *Iris chrysophoenia* Small). This particular hybrid represents one of the more unusual forms, possibly illustrating a recombination of characters resulting from recrossings of hybrids among themselves or with parental stocks. The twinned midrib is apparently inherited from the *fulva* stock, the radial pattern from the *giganticaerulea* parent. Flowers of this general type, although comparatively rare, may exist in a wide color range, usually some shade of purple or red purple. In the specimen shown, the color is a deep garnet and the shape assumed is suggestive of the bearded irises. This particular flower presents an excellent example of the rarity of the more unique hybrids. There were only one bloom stalk and two rhizome branches in the original clone. Such rarity adds to the evidence that this form is of hybrid origin. Fortunately the entire plant in this instance was brought under cultivation as the locality was destroyed by highway construction a few days later.

species (*fulva* (a), *giganticaerulea* (e), *foliosa* (f), and *virginica* (g)) have distinct and characteristic venation, claw and blade structures. The vein patterns, while difficult to describe in words are graphically illustrated. A study of the patterns will clearly show that the forms believed to be hybrids (*fulvaurea* (b), a form of *vinicolor* (c), and a form of *chrysophoenicia* (d)) stand between *fulva* and *giganticaerulea* in the order named and further confirm

the other evidence of the occurrence of hybridization. In general, the sepal characters of the hybrids, viz., color, size, shape of blade, relative length of claw, strength of pubescent ridge, and venation pattern tend to be correlated in a series between *fulva* and *giganticaerulea*, but this is not uniformly so.

The series selected in Fig. 8 was chosen for the purpose of showing the relationships in plants with differences as wide as possible in the patterns of the pubescent ridges. According to Small and Alexander's classification sepal *a* would be placed in group Fulvae, sepals *b* and *c* in Unicristatae, *d* in Coronicristatae, and *e* in Radiicristatae. Sepals *a* and *d* exhibit the twinned sepal "crest" pattern, inconspicuous in *a* and showing its highest development in *d*. The other three exhibits have central ridges, there being no laterals in *b*, rudimentary laterals in *c* and prominent laterals in *e*. A study of the venation patterns will reveal that the conspicuous superficial structures in the hybrids are not reflected in the underlying structures.

Petals in the hybrids likewise run the range of intermediates between those of *fulva* and those of *giganticaerulea*, but are usually erect in contrast to the down-curved sepals. Many of the hybrids, therefore, have an artistic aspect not found in either parent, the petals bending gracefully upward and the sepals gracefully downward (Fig. 5). In hybrids, the appendages may or may not be lacerate-toothed, and the anthers are generally included.

Supplementary Remarks. This study has revealed that there is a large group of very variable irises with structural and color characteristics running the entire gamut of intermediates between the extremes presented by *fulva* and *giganticaerulea*, and never beyond these limitations except as a result of combining characteristics of both species. For instance, the blue and white tones of *giganticaerulea* when combined with the red and yellow tones of *fulva* give rise to more brilliant reds and truer pinks than is possible within the color range of *fulva* alone. Again the normally twinned midrib character of *fulva*, although weak in that species, when combined with the strongly ridged character of *giganticaerulea* gives rise to the striking phenomena found in the midribs of Small and Alexander's group Bieristatae and in such beautiful forms as *chrysaëola*, *chrysophoenicia*, and *callilopha* of their group Coronicristatae. Such characteristics are not possible in either of the

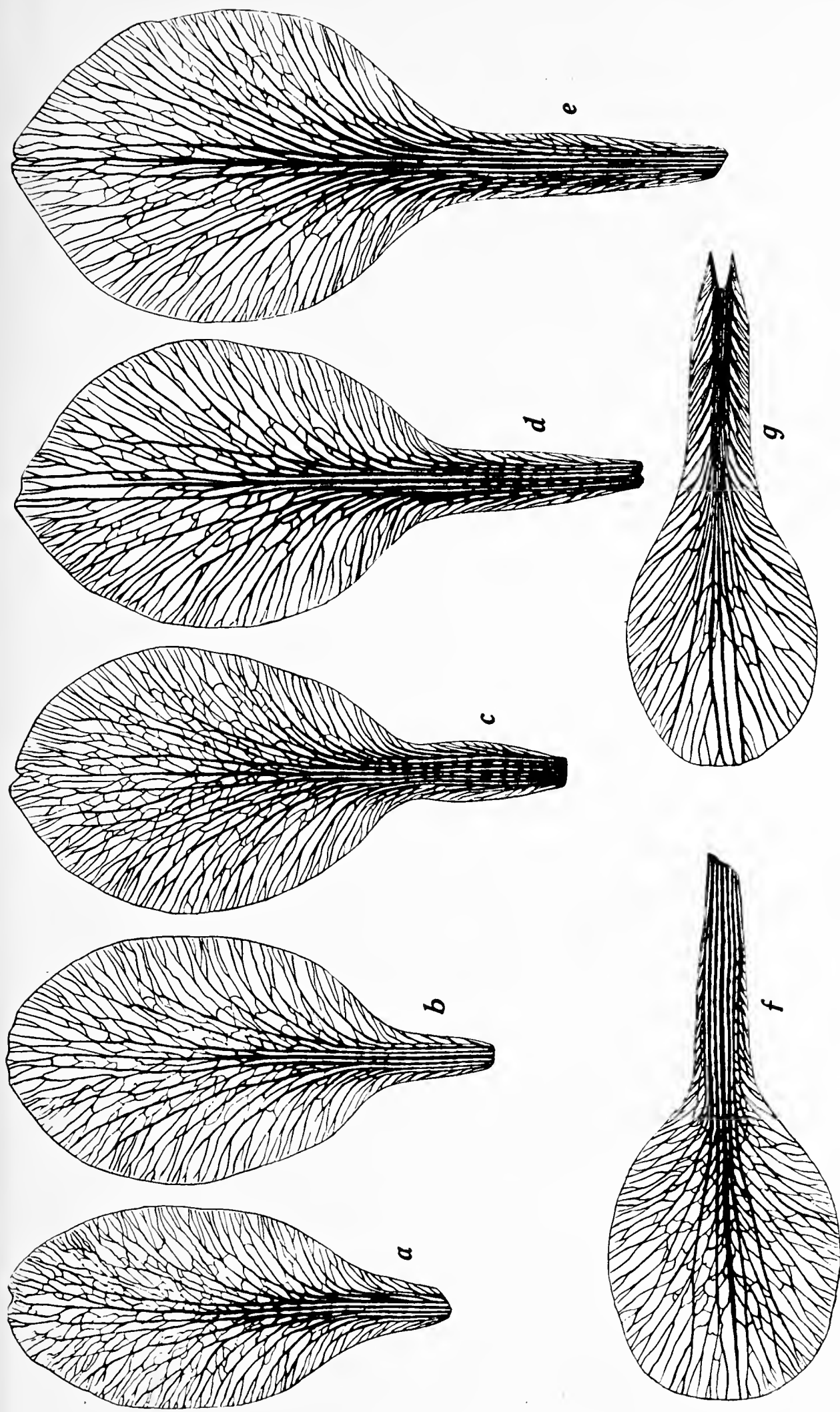


FIG. 6.—SEPALS OF THE FOUR SPECIES OF SOUTHEASTERN LOUISIANA IRIS AND THREE NATURAL I. FULVA X I. GIGANTICARULEA HYBRIDS showing shape, relative as well as actual claw and blade lengths, and venation patterns. Actual size is of the pressed dried sepals, shrinkage, if any, not being compensated for. *a*, *fulva*; *b*, *X fulvaurea*; *c*, *X virgicolor*; *d*, *X chrysophoenicea*; *e*, *giganticaerulea*; *f*, *foliosa*; *virginica*.

parental stocks. While they are exceptions to the rule of correlation, it is these exceptions which produce most of the striking horticultural types.

There are also other characteristics exhibited by various hybrids which are the result of various combinations of parental traits. Notable among these is a degree of tolerance which permits some of them to survive in nature in places which are no longer suitable to either of the parental stocks. Such forms of course are more susceptible to garden culture under a greater variety of conditions than either of the parental forms.

Although the above evidence that natural hybridization of two species is taking place on a grand scale in southeastern Louisiana is based largely on structural and physiological characters, a study of the distribution of the species here also throws some light on the subject. A glance at the accompanying distribution map (Fig. 8) shows that the ranges of the four species of Louisiana Irises recognized herein come into rather close proximity. This is especially noticeable just northwest of Lake Maurepas. It is only in the zone where the ranges of *fulva* and *giganticaerulea* meet and overlap, however, that we find that large group of variable plants which one would suspect from the structural evidence as being of hybrid origin. In this diverse aggregation is found not only the great majority of the forms recently described by Small and Alexander as separate species, but also many other forms which have not been described.

Whether or not all four species herein recognized can be hybridized promiscuously in captivity remains to be seen. Certainly in nature, environmental factors and, in the case of *foliosa*, a later flowering season tend to keep them apart. The only notable exception to this comparative isolation of species in spite of contact or overlapping of ranges is found where the deltaic ridges penetrate the fresh water marsh land zone. It is here only that *fulva* is brought into direct contact with *giganticaerulea* (Figs. 7, 8, 9, and 10). Even then, in many cases, hybrids are absent and in such cases colonies of pure *fulva* give way to colonies of pure *giganticaerulea* without any intermediates when the deltaic bayous approach sea level.

This is the case especially where the land at the point of contact is well wooded as on the Lafitte ridge south of New Orleans. *Giganticaerulea* does not thrive in well wooded places and in such loca-

tions evidently does not penetrate the *fulva* zone in sufficient quantity to permit the development or long survival of hybrids. On the other hand, if at the point of contact the land has been cleared of timber, especially if cattle are numerous enough to thin out the shrubbery and smaller competitors of the irises, *giganticaerulea* in great numbers will penetrate well into the *fulva* zone, especially along the shallow sloughs in the beds of former deltaic streams. Clearing of drainage channels evidently assists in the distribution of the seed and permits those of *giganticaerulea* to be carried inland by wind blown high waters from adjacent lakes. Even at these points of contact, *fulva* is found in its favored habitat along the clayey banks of the deltaic streams, whereas *giganticaerulea* is usually found in the more mucky depressions of the sloughs or stream beds. Often, however, both species in these situations are within a few inches of each other.

Cattle do not feed on irises when other food is available, whereas they thin out the chief competitors of these plants, and, since cow manure is an excellent fertilizer for them, both *fulva* and *giganticaerulea* usually become numerous where cattle are present. In such localities the chances for cross pollination are greatly enhanced, since great numbers of bumble bees are usually attracted to such iris fields. Furthermore, the hoofs of cattle act as prong cultivators in the damp or wet soil, stimulating rhizome propagation and increasing the chances of iris seed finding a favorable spot for germination.

Although plants which I would class as hybrids are found occasionally at less favorable points of contact of the two species in question, and although hybridization doubtless has occurred here and there in nature without the influence of civilization, nevertheless I am firmly convinced that it is only when all of the favorable conditions, both natural and artificial, are combined, that great fields of hybrids result. The great diversity in the perianths of irises in the larger fields would indicate that second generation hybrids and recrossings between hybrids and parental stocks are being produced there.

Optimum conditions for wholesale hybridization seem to be as follows: (1) a very favorable point of contact between the two parental species, preferably a swamp drainage bayou at sea level crossing a former deltaic stream (Fig. 10); (2) a fairly dense rural population which brings about clearing of the forest and the cut-

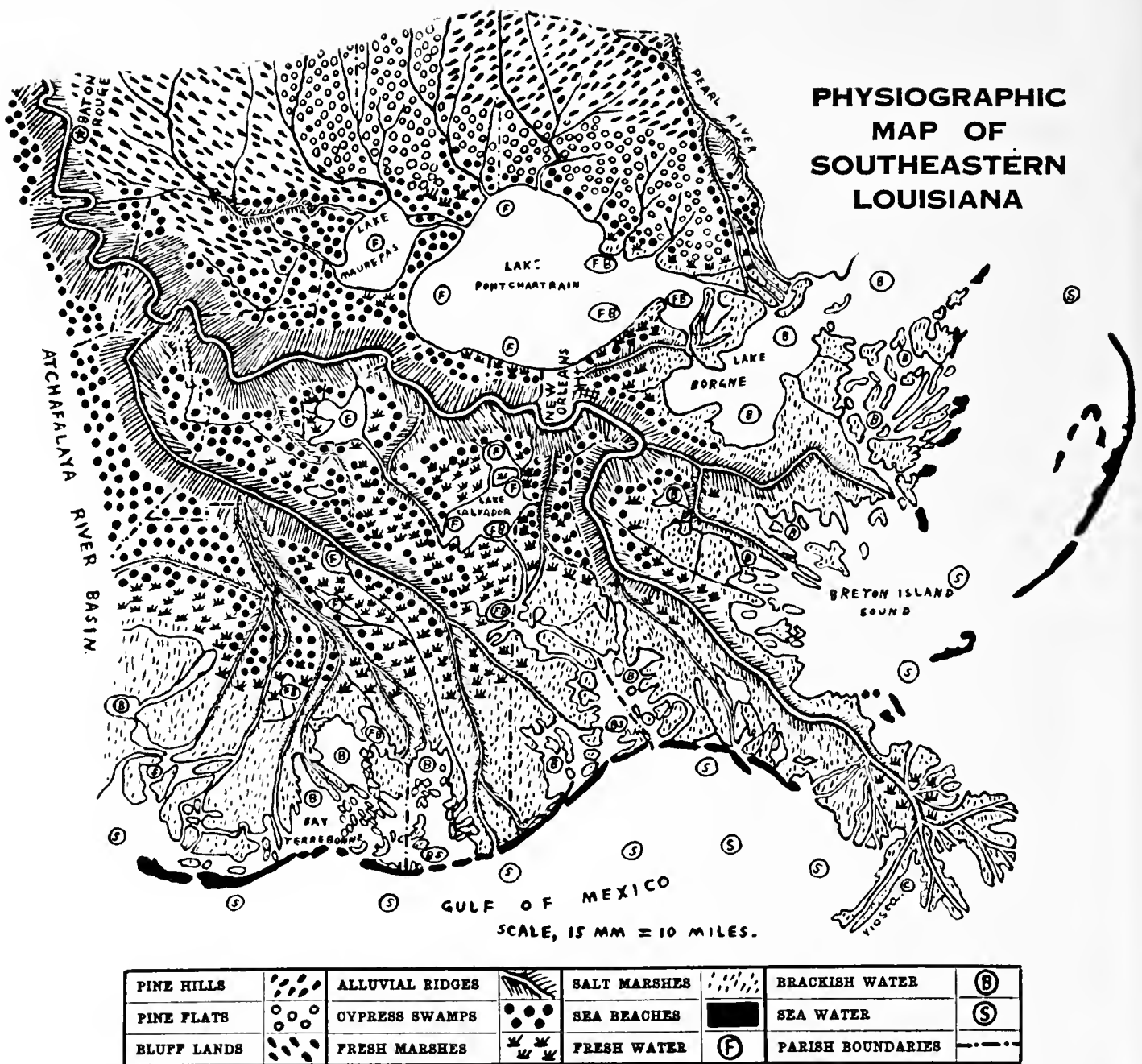


FIG. 7.—PHYSIOGRAPHIC MAP OF SOUTHEASTERN LOUISIANA. Because of the small scale of the map, minor detail was sacrificed where necessary for the sake of clarity and only sufficient political features included to permit comparison with political or road maps.

ting of drainage channels, causing a greater than normal water level fluctuation which favors the irises rather than their competitors, and permits the mass introduction of *giganticaerulea* into localities where they would not ordinarily be found in abundance; (3) the presence of cattle, which act as cultivators and provide an abundance of the required fertilizing elements, at the same time reducing the number of competitors.

Perhaps the best example of such an environment is along "Bayou" Sauvage, the deltaic slough along the Gentilly Ridge just east-northeast of New Orleans. This ridge, which is geologically a continuation of the Metairie Ridge, is traversed by Bayou St. John (a swamp drainage bayou) located in the City of New Orleans. It

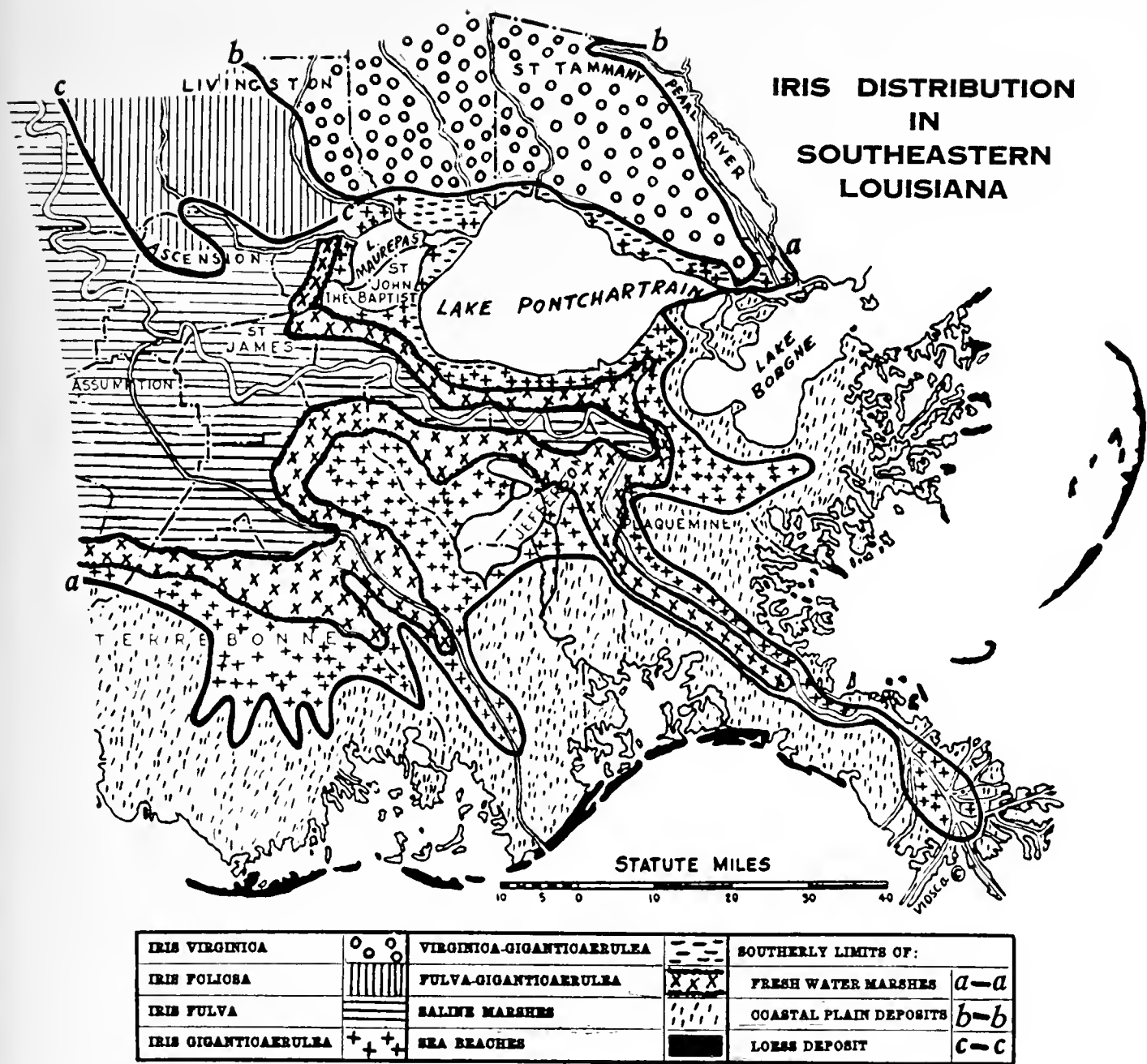


FIG. 8.—ZONAL DISTRIBUTION OF THE GENUS IRIS IN SOUTHEASTERN LOUISIANA.—As in the preceding figure, detail was sacrificed for the sake of clarity and only a minimum number of political features included. It must be understood that irises are not universally distributed throughout the zones illustrated, but only in suitable localities. In the overlapping zones, the species are not promiscuously intermingled, but there is an orderly distribution. Furthermore, in the *fulva-giganticaerulea* overlap zone, hybrids do not occur over the entire zone, but only at some of the more favorable points of contact. They do not occur naturally anywhere outside of that zone, however. This fact alone precludes the possibility of either *foliosa* or *virginica* being one of the parental species.

is along the Gentilly section of this ridge that Small and Alexander found a large percentage of the forms which they recently described.

After formulating my hybridization theory, I believed that other areas of this kind could be predicted with only a physiographic map of Louisiana as a guide. As was expected, field observations have proven that the location of such areas is definitely predict-

able, but a profusion of hybrids was found only where all of the favorable conditions as outlined above were found to occur.

Furthermore, it is apparent that the probable age of a field can be determined by the character of the plants. For instance, the fields of hybrids in the Bayou Lafourche area near the town of Cut Off are probably old, for the clones are few in number and quite large in size, some of them fully occupying the depressions in which they lie. Furthermore, they are inclined to the more intermediate types such as *vinicolor* and *fourchiana*, which are more hardy than either parent. I attribute this to a survival of only the most hardy hybrids after the lowering of the water table due to the artificial disconnecting of Bayou LaFourche from the Mississippi River about thirty years ago and the dredging of the bayou channel for navigation purposes. A similar situation occurs on Metairie Ridge just west of New Orleans, probably brought about in that instance by the construction of the New Basin Canal with its levees and the completion of the New Orleans drainage system, thus divorcing Metairie Bayou (a deltaic slough) from its former connection with Bayou St. John and the subsequent lowering of the water table in that locality.

On the other hand, the situation on the Gentilly Ridge indicates an intermediate stage in the development of hybrids, as there are large clones of intermediate types (*vinicolor*, *fourchiana*, *viridivinea*) and numerous clones, for the most part small, intermediate between these forms and the *fulva* parent on the one hand and the *giganticaerulea* parent on the other.

Other localities such as the Point aux Chien Ridge near Houma and a number of others illustrate, apparently, an early stage in the development of hybrids, the hybrid clones being generally small whereas the parental stocks of both *fulva* and *giganticaerulea* are numerous. One isolated locality I have under observation seems to have developed within the past ten years. The parental stocks to my personal knowledge certainly were not as abundant in that location ten years ago and the present size of the largest isolated clones of hybrids indicates that they are not more than a few years old. Furthermore, leading residents whom I have known for years, and who have always furnished me with reliable information, state that prior to a few years ago they had never seen irises other than the common blues and reds, yet the hybridization is taking place today in great profusion right in their own yards. The answer, I

believe, lies largely in the rather recent ditching, cutting of trees, and bringing in of cattle.

Another important point favoring this hybridization theory is that most forms described by Small and Alexander have no ecological significance or bio-geographic values as separate units. Furthermore, the group of variants found in a given locality does not correspond to the group in any other locality. Many hybrids not seen or described by Small and Alexander are impossible of ready classification by the use of their keys and descriptions. In one case, in a locality not visited by them, where there are numerous albinos of *giganticaerulea* and a few yellow toned variations of *fulva* in the parental stocks, a whole new series of unclassifiable hybrids has sprung up. Thus, theoretically, the number of possibilities is infinite, and one could just as well describe 500 or a thousand as a hundred species.

A profusion of closely related plants in a limited area with infinitesimal differences not readily classifiable, presenting phenomena not repeated in exactly the same form wherever the same bio-geographic conditions recur, certainly do not suggest themselves as distinct species in the ordinarily accepted sense of the term. In my opinion an isolated clone does not constitute a species unless it is the last of a dying race; yet many of Dr. Small's types were described from small clones and have the earmarks of new creations, and should not be entitled to the rank of species for many milleniums if then they shall have survived the tests which nature has in store for them.

In addition to the above evidence there should be considered some scant but very significant experimental evidence. About three years ago I discussed my hybridization theory with Martin Burkenroad, a local biologist. He told me of an experience he had in bringing the common red iris and the common blue (doubtless *fulva* and *giganticaerulea*), along with other wild plants, under cultivation in his backyard in New Orleans. Both species produced blooms which he cross-pollinated. The seeds of these were planted in the same bed with the parents, and the next flowers that appeared about two years later were handsome wine-red forms differing from both parents, which by that time had disappeared completely. In the spring of 1932, I cross-pollinated a form of *giganticaerulea* with *fulva*. Two of the offspring bloomed in April, 1934, both nearly typical *vinicolor*, thus fur-

nishing an important link in the chain of experimental evidence.

Miss Caroline Dormon of Chestnut in Northwestern Louisiana has told me of several new hybrids which have developed naturally in her gardens from mixed parental stock collected in South Louisiana. Her original collection consisted of *giganticaerulea*, *fulva* and some wild hybrids such as *vinicolor* and *violipurpurea*. Albinos of *giganticaerulea* are numerous in her collection and, as could be predicted, her hybrids tend toward pink and rosy shades. An illustration of one of these light colored garden hybrids has been published recently (Dormon, 1934).

It is also interesting to note in this connection that Dykes', Williamson's, and Reed's crosses between *fulva* and *foliosa* (Reed, 1931) possess characters intermediate between those of the parents and, except for the more zig-zag flower stalks, are very suggestive of the *vinicolor* type. Furthermore, seedlings of Williamson's cross (DOROTHY K. WILLIAMSON) produced by pollinating with the same variety, developed a series of flowers whose shape, size and color range corresponds strikingly with those of the natural hybrids of *fulva* and *giganticaerulea*. Since the flower of *foliosa* superficially resembles that of *giganticaerulea*, it is not surprising to find the stepsisters of *fulva-foliosa* and *fulva-giganticaerulea* origin resembling each other. Further evidence of even a more direct nature is that of Berry in California, who has produced hardy hybrids between *fulva* and *savannarum*, the latter being essentially like *giganticaerulea* of Louisiana and probably the same species.

There is also some evidence tending to show that the Louisiana hybrids are at least partially sterile, but this evidence is not yet conclusive as this paper goes to press.

ECOLOGY AND DISTRIBUTION

Although there is comparatively little variation in the elevation of the part of Louisiana under discussion, the highest point being about sixty feet above sea level, the soil characteristics in the area are highly diversified (Fig. 7). South of Baton Rouge the Mississippi Alluvial Plain swings toward the southeast in a broad belt over 100 miles in width. In the vicinity of Baton Rouge, these alluvial lands are bordered on the east by a belt known as the Bluff Lands, a loessal formation about thirty miles in width which extends eastward as far as the Tickfaw River. The bluff lands are bordered on the east by the terraced Coastal Plain in its diverse

manifestations, the terraces here being the successive former coast lines of this portion of the continent.

South of the present limits of the Coastal Plain, the southern limit of which lies near the north shore of Lake Pontchartrain, the Mississippi has built and is still building, upon the floor of the Gulf, its broad delta. The varying topography of the flood plain of the Mississippi is the result of uneven deposition of sediments and not of upheaval and erosion. Along the main river and its outlets or distributary streams are the so-called natural levees. These alluvial ridges are composed of coarse sediments on and near their crests and shade off gradually into flats of lower elevation and finer texture. Swamps occur on either side wherever the level of the land dips below the mean water table. These vary from shallow transition areas, characterized by a variety of hardwoods, to the deeper, more permanent swamps in which cypress, *Taxodium distichum*,¹ and tupelo gum *Nyssa aquatica*, are the predominant species.

The swamps are in reality large catch basins and, since they are at a lower level than the Mississippi River or its distributaries, the water gathered in them cannot drain back into the river, but must seek new outlets to the sea. Such outlets might be termed swamp drainage bayous and, not being of deltaic origin, they differ from those bayous which were formerly outlets of the river. Those of the former type are swamp bordered, their banks being comparatively insignificant, whereas the latter are bordered on either side by broad ridges of alluvial soil.

Near the coast, the wooded swamps give way to fresh water areas of treeless marsh relieved by many lakes and lagoons. These bodies of water, which are practically at sea level, have resulted from the fact that arms of the sea have been almost entirely hemmed in by deltaic ridges, but not completely filled with alluvial sediments. Drainage of these lakes and marshes is effected for the most part by marsh-bordered sloughs and drainage bayous, these also without significant bordering ridges. In the coastal region proper, the marshes are generally saline or have at least some degree of brackishness, the transition to truly fresh water areas usually being very gradual.

Thus we see that a multiplicity of factors has resulted in the

¹Nomenclature used herein, except for irises, follows "Manual of the Southeastern Flora" by John K. Small, New York, 1933.

very diverse soil conditions found in this comparatively level region. These major soil divisions and the relationships they bear to the distribution of the irises of the region will be discussed in the following paragraphs.

THE ACID COASTAL PLAIN BELT

The Coastal Plain is geologically very young in the region immediately north of Lake Pontchartrain and as it is near sea level there has been little or no erosion. This portion of the plain, for the most part sandy, but with occasional clay ridges, is known as the Longleaf Pine Flats. North of this the plain is terraced and more mature, having been dissected into hills and valleys. This section is known as the Longleaf Pine Hills. Taken together, both flat and hilly areas in this region represent the most westerly extension of the East Gulf Coastal Plain which is a continuation, without serious interruptions or barriers to plant life distribution, of the Atlantic Coastal Plain.

The pine flats near the coast are dominated largely by loblolly pines, *Pinus taeda*, except in St. Tammany Parish, where slash or Cuban pine, *Pinus caribaea*, is abundant. Wherever the land rises slightly above the general level, longleaf pine, *Pinus palustris*, occurs if the soil is sufficiently dry. There are also numerous depressions, most of which are at only a slightly lower level than the flats. In many of these water stands for the greater part of the year. Here water gum, *Nyssa biflora*, pond cypress, *Taxodium ascendens*, swamp bay, *Magnolia virginiana*, and mayhaw, *Crataegus aestivalis*, occur. Various species of pitcher plants, ferns, ground orchids, sphagnum, and other bog plants are found in suitable locations either under the trees or in open bogs. Natural drainage is generally by means of sluggish bayous or rivers, with swampy or marshy valleys. There are a few swift streams traversing this region. These originate in the hills to the north and their inhabitants belong in part to the higher sections.

In the Longleaf Pine Hills, the soils are for the most part sand or red clay and the region, because of its comparatively high elevation, has been dissected during the recent geological era into rolling hills, giving it a well-drained surface. In such places the longleaf pine is the dominant species. In the gullies and along the streams, swamp trees characteristic of the Coastal Plain are found.

Although the pine hills are characterized by swifter streams than the flats, many of the gullies have sluggish drainage and are kept moist even during dry seasons by ground water seepage and small springs oozing out of the clay hills where the water table is at a higher level. In such places we find the same bog plants which characterize the depressions in the pine flats.

The surface soils and the water in this region, that is, in both the hills and flats, are all acid, usually decidedly so (pH 6.8 to 4.0). *Iris virginica* is found throughout this entire acid coastal plain region of eastern Louisiana wherever its favored habitat occurs (Fig. 8), being more abundant in the flats than in the hills, possibly because there is more shallow water standing there. Although it will grow in the sun, it is normally a species of shaded woodlands, being found wherever the pines give way to water gum, swamp bay and mayhaw. Here it is seen along the edges of the wet depressions and swamps, and out in the middle of the shallower sloughs which frequently go dry in the summer.

The grandest development of this species occurs at the southern extremity of its range, particularly bordering the richer swamps near the mouths of such streams as the Pearl and Tchefuncta Rivers. Throughout its range it is not associated with any other iris species except along the southern border, where it contacts the range of *giganticaerulea*. This association will be discussed later.

THE BLUFF LANDS

Between the Coastal Plain proper and the Mississippi Valley, in the Bluff Lands, the surface soils are composed for the most part of a fine, powdery silt-like loam of loessal origin. It was blown up from the Mississippi Valley over a long period of time and deposited on top of the sands and clays of the adjacent marine formations of the Coastal Plain. This superficial loessal deposit immediately adjacent to the Mississippi Valley may be from 50 to 100 feet in thickness, but it thins down rapidly as we go eastward. The Amite River and its tributary, the Comite, cut through it, their beds being in the underlying sands and gravel.

The section of the Bluff Lands lying west of the Amite River is fairly well drained because of its higher level. There are, however, some depressions and sloughs with comparatively sluggish drainage. Along the borders of the deeper ones, and out in the middle of those which dry up in the summer, we find a fairly rich growth of *Iris foliosa*.

The eastern extension of the Bluff Lands, east of the Amite River, is decidedly flat and often swampy. Here *Iris foliosa* is more widespread. A heavy rain will frequently flood great areas in this section instead of merely the sloughs, the fine silt being carried in suspension and laid down again as the water subsides. The hardwood forests here are dense and the ground generally moist. As a consequence there is comparatively little movement of the silt by wind action once it has been laid down. The loess here is for the most part re-worked by water and carried eastward. Some of it reaches the Tickfaw River Valley but, being moved by water only, does not get beyond that valley. It is not surprising, therefore, to find that *Iris foliosa* is the species found in that portion of the Tickfaw Valley traversing the Bluff Lands. In the first slough east of the Tickfaw Valley, however, sometimes not over a thousand feet distant, an abundant unmixed stand of *virginica* will be found. The ranges of the two species thus virtually meet, but no overlapping whatsoever nor any natural hybridization have yet been found.

Likewise throughout the Bluff Lands the pines give way to oaks and other hardwoods, the water gum to tupelo-gum, the swamp bay to southern magnolia, *Magnolia grandiflora*. The transition, however, is sometimes more gradual than in the case of the irises. Although the calcium content of the silt-like soil is rather high, the surface water in the depressions is slightly acid, probably due to the decomposition of leaves of the oaks and other trees mentioned above. While *foliosa* will grow in sun or shade, in its natural state it is usually found beneath deciduous trees, receiving winter sun and summer shade.

THE DELTAIC RIDGE LANDS

That portion of the Mississippi Valley which runs through Southeastern Louisiana is the youngest geological formation on our continent. The silt and clays of this region have been deposited, during the recent geological era, layer upon layer under the waters of an arm of the Gulf of Mexico that extended at one time as far north as Cairo, Illinois.

The deposition of alluvial soils and the filling in of this arm of the sea was a process similar to what we see going on at the mouths of the Mississippi and Atchafalaya Rivers today. Here the land-building process is still going on rapidly. The deposits at first form tidal flats and marshes at sea level, and then build up deltaic

ridges which spread fanwise throughout the flatter areas. This fan-shaped feature is due to the fact that the lateral streams carry the water, with its burden of silt, away from instead of into the main streams. Hence they are distributaries instead of tributaries. Since the crests of these alluvial ridges are adjacent to the distributary streams, the natural drainage in this region is away from the rivers and finds its way through systems of sloughs, lagoons, bayous, lakes and passes into the gulf.

Wherever these alluvial lands are built up sufficiently above sea level so that neither the deltaic sloughs or bayous that traverse them nor the adjacent cypress swamps are affected by salt water even during very severe storms, *Iris fulva* is found (Fig. 9, upper transect). This species occurs in the clayey soil along the banks of the abandoned deltaic streams and, where the sloughs are very shallow, may cover the entire depression. Because of the disturbance of natural conditions along the Mississippi and other active deltaic streams with artificial levees, *fulva* may no longer occur near the banks of such streams although formerly reported there. Wherever deltaic ridges are bordered by cypress swamps, *fulva* will also be found along the shallower edges of the swamps and in ditches and depressions in the damp clayey soil of the transition zone.

As can be seen from the distribution map (Fig. 8), the range of *fulva* does not contact the range of *virginica* in this territory. In the northwestern part of the area these two species are separated by the Bluff Lands. Where the Bluff Lands border the Mississippi Valley there is a rather sharp line of demarcation, an escarpment at the base of which is a swampy slough roughly tracing the outer edge of the valley and receiving the drainage water therefrom. Along the edges of this slough we find *fulva*, whereas on the tops of the bluffs in the first slough with sluggish drainage it is entirely replaced by *foliosa*, the species characteristic of the loessal deposits. South and west of Lake Pontchartrain *fulva* is separated from *virginica* by a narrow zone in which only *giganticaerulea* is found.

The alluvial soils throughout the region where *fulva* is found are usually rather high in lime content. The surface and ground water on the ridges is usually alkaline, but in the sloughs and at the edges of the cypress swamps where *fulva* grows, the water is more nearly neutral (generally pH 6.6 to 7.2), although a mild acidity may develop wherever there are accumulations of organic matter.

Iris fulva is essentially a shade-loving species. Although it will grow in the sun, the flowers droop and fade rapidly in such situations. In its favored habitat where the swamp trees are mostly deciduous, it receives a goodly portion of winter sunshine, but the water oak, *Quercus nigra*, wax myrtle, *Certhamnus ceriferus*, buckbrush, *Baccharis halimifolia*, occasionally the live oak, *Quercus virginiana*, and even the leafless deciduous trees, many of which are draped with Spanish moss, *Dendropogon usneoides*, give it at least partial shade during that season.

Fulva does not seem to withstand any appreciable amount of salinity and even at the points of contact with *giganticaerulea* (Fig. 9, middle transect), it is found more toward the edges of the deltaic sloughs and swamps, where its roots are imbedded in the stiff, almost impervious clay. Thus the surface water, which is sometimes back water from the sea level drainage bayous and may, therefore, be more alkaline or brackish than the ground water, does not seem to make contact with the root systems of *fulva* even during those temporary periods of high water.

THE FRESH WATER MARSH AREAS

Iris giganticaerulea belongs both to deltaic and lagoonal marsh areas which are fresh or at most only slightly brackish. In the deltaic region, it is found chiefly along the borders of the natural drainage channels and along the outer edges of the small delta fingers which extend out fan-wise in the general direction of the coast line (Fig. 9, middle and lower transect, and Fig. 10). Although there may be a small fringe of cypress bordering some of these delta fingers, the cypress swamps are not extensive within the range of this species. It seems to thrive best in sunny situations and is not found in dense swamp forests.

The clayey soil of the deltaic region is generally soft and mucky in the habitat of *giganticaerulea* and there is usually a fluctuating water level. Although this is controlled largely by the sea level, it is not a tide in the ordinary sense of the word, but is caused by winds. These winds are generally the normal, more or less periodic, cyclonic disturbances, the east winds usually causing the highest "tides." Sometimes, however, the location of large shallow lakes is an important factor and a strong wind will back up the water into the bayous and marshes on one side of a lake while lowering it on those on the opposite side. Thus, although it may at first thought

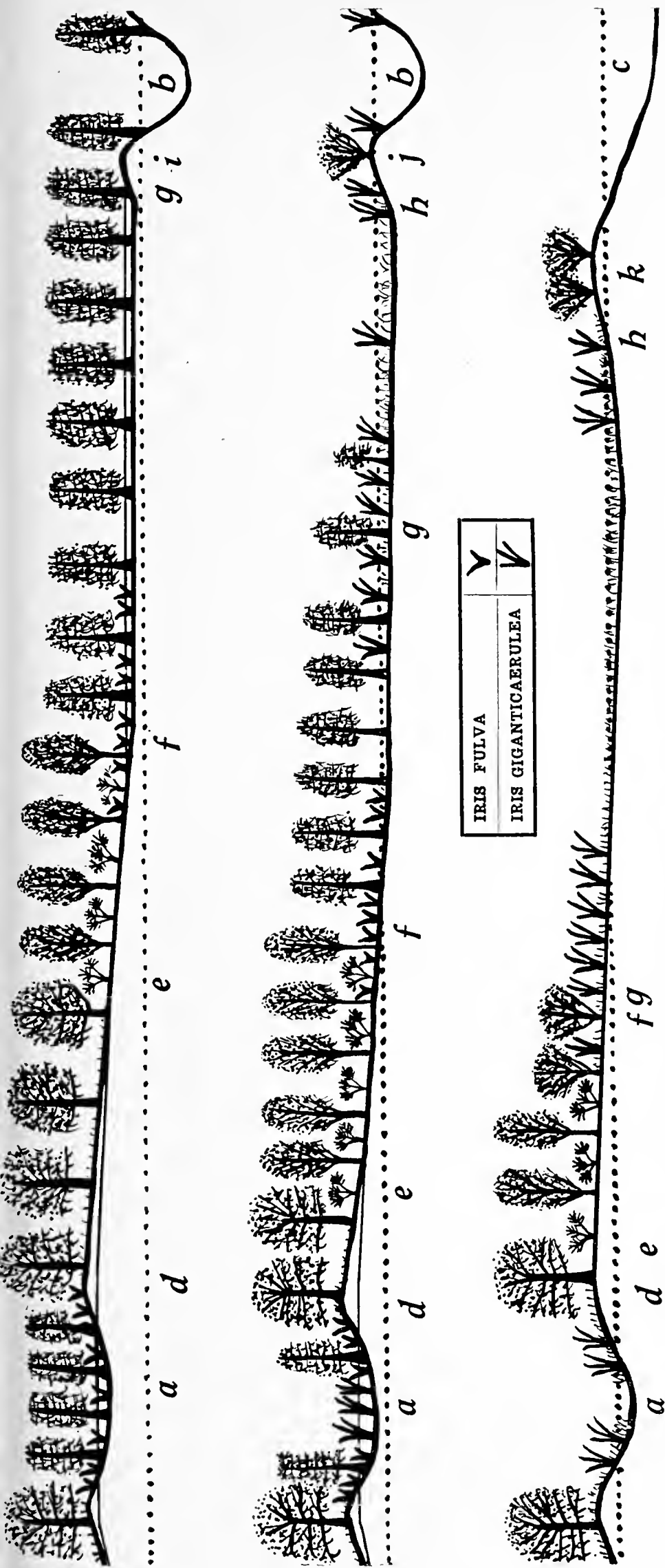


FIG. 9.—DIAGRAMMATIC ILLUSTRATION OF THREE TRANSECTS OF A DELTA FINGER AND ADJACENT LOWLANDS AT DIFFERENT ELEVATIONS ABOVE SEA LEVEL.

Legend: Heavy line, soil contour; fine line, ground water table; dotted line, lake or sea level; *b*, trough of deltaic slough; *b*, swamp drainage bayou; *c*, lake or pass; *d*, crest of deltaic ridge; *d e*, live oak forest community; *e f*, transition zone or red gum, dwarf palmetto community; *f g*, cypress swamp community; *g h*, fresh water marsh community; *i*, swamp bordered bayou bank; *j*, marsh bordered bayou bank—buck brush, wax myrtle community; *k*, lake shore with same community as *j*.

In the upper transect it will be noted that the *fulva* zone covers the entire width of the shallow deltaic slough where it is associated with plants of the cypress swamp community. On the swamp side of the ridge, *fulva* usually clings to the shallower edge of the swamp, whereas the swamp trees can stand deeper water and extend to the swamp drainage bayou in rear. The swamp here is above gulf level and not influenced by brackish water invasions.

In the middle transect, the influence of wind "tides" and occasional brackish water invasions has restricted the cypress growth somewhat and a new zone of treeless marsh is seen. *I. giganticaerulea* has pushed its way up the deltaic slough to this point and has also crossed the marsh to the outer fringe of the swamp and may contact the *fulva* zone in both places. It is in this transect that natural hybrids may be found at favorable points of contact.

In the lower transect the ridge is so near sea level that relatively frequent brackish water invasions have prevented entirely the growth of cypress. A shrubby zone (buck brush, wax myrtle community), may be found along the outer fringe of the transition belt. In this transect, *fulva* is replaced entirely by *giganticaerulea* and marsh vegetation is found both in the deltaic slough and along the outer edge of the ridge. The slough here may have a "tidal" channel too deep for *giganticaerulea*.

appear surprising, the marshes where *giganticaerulea* finds its greatest development, although usually circumneutral, are sometimes notably alkaline (pH 6.2 to pH 7.6, but sometimes higher). The species apparently seldom if ever occurs in the wild state beyond the inner edge of the zone of this "wind tide" influence (called herein the sub-maritime life zone), or in water or soil of a permanently acid nature, the soil water no doubt being influenced by marine alkalinity brought inland during the high water periods.

The range of *giganticaerulea* makes contact both with the range of *fulva* and with the range of *virginica*, but not with *foliosa* except for a close approach in the lower Tickfaw River section. The conditions at the points of contact between *fulva* and *giganticaerulea* have already been discussed in the section on hybrids (Fig. 9, middle transect, and Fig. 10). In the natural state, where the land is more wooded and cattle are not present, and where there are natural obstructions in the bayous and sloughs and an absence of artificial channels, neither *giganticaerulea* nor *fulva* are very common at the points of contact of the two species. Hence the chances of natural hybridization occurring are comparatively slight and, even if it did occur, the chances would be against long continued survival.

We see from the distribution map that *giganticaerulea* contacts the range of *virginica* over a rather large front. There are no natural hybrids between these two species, however. The "tidal" marsh here is largely of lagoonal origin and where the coastal plain contacts the marsh, *virginica* invariably fringes the edge of the coastal plain and here produces a profusion of fibrous rootlets which penetrate the sandy subsoil and evidently secure their nutriment from the acid ground water. *I. giganticaerulea* on the other hand tends to grow in greatest abundance beyond the *virginica* zone, where both the muck and the water are deeper, and even where the two are in contact we do not find in *giganticaerulea* the profusion of fibrous rootlets penetrating deeply into the subsoil as noted in *virginica*. The surface water in these marshes, as was the case in the deltaic region, usually varies also over a circumneutral range (pH 6.2 to 7.6) and it appears that the roots of *giganticaerulea* are confined largely to the muck layer where the water is sometimes moderately alkaline.

The reason for the narrow fringe of scattered patches of *virginica* found south of Lake Pontchartrain is not yet clearly understood in

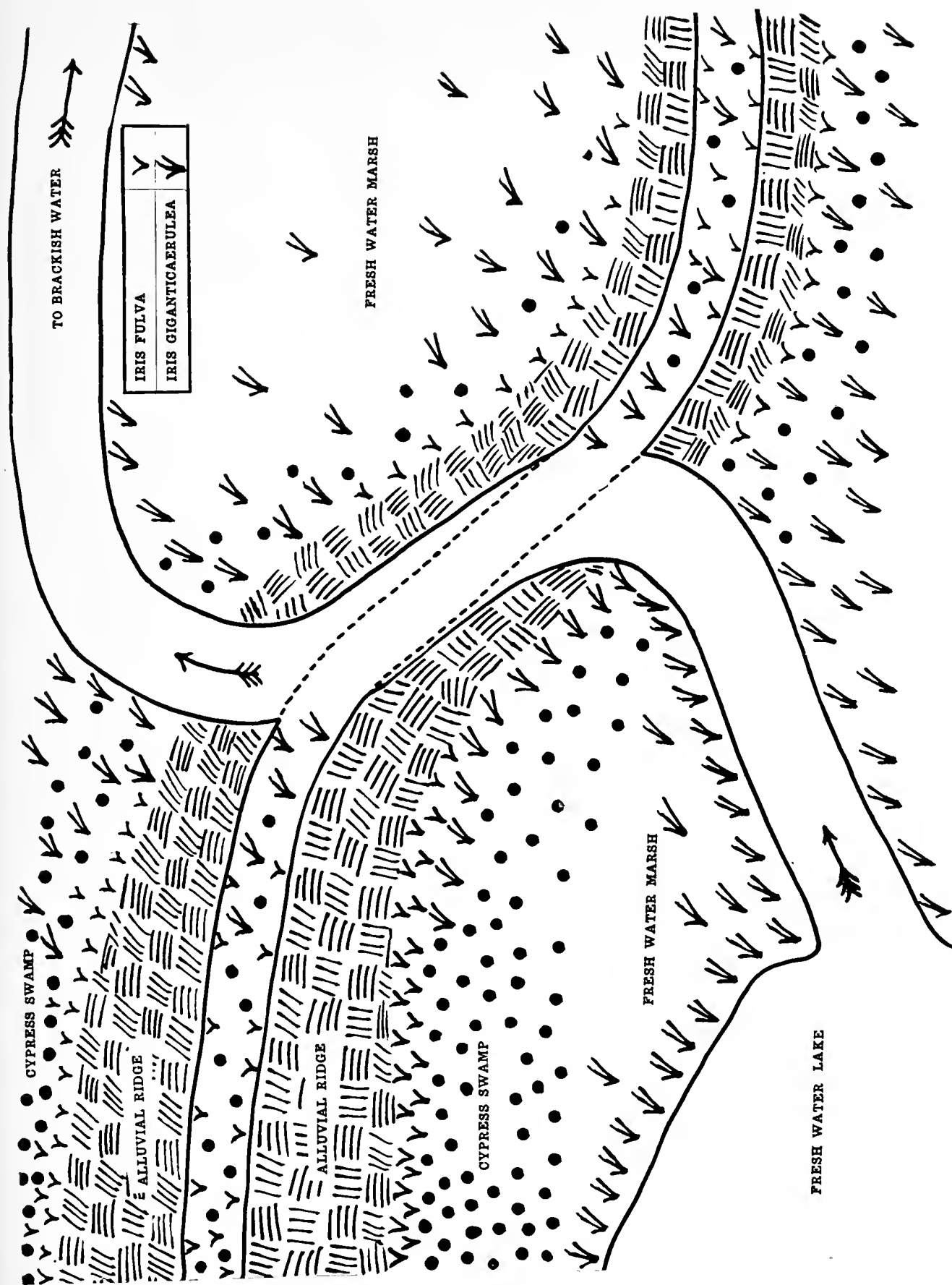


FIG. 10.—DIAGRAM ILLUSTRATING ZONAL DISTRIBUTION OF *IRIS FULVA* AND *IRIS GIGANTICAERULEA* AT A VERY FAVORABLE POINT OF CONTACT BETWEEN THE TWO SPECIES. Between the two broad alluvial ridges of the delta finger which extends diagonally from the upper left hand corner to the lower right hand corner, is the shallow deltaic slough in which cypress (blade dots) and its associates are found. This slough represents the abandoned channel of an old distributary of the Mississippi River. The fanwise development of other delta fingers in the vicinity has impeded the natural drainage and forced the lake and swamp water thereby impounded in the basin at the lower left to develop a crevasse through the ridges of the delta finger and find an outlet to some other lake, bay or pass near the upper right hand corner. Thus, a new swamp drainage bayou has been formed by usurping part of the old deltaic channel (dotted lines), having widened and deepened this as much as necessary to accommodate its maximum flow in times of heavy rainfall. Whereas the drainage water flows toward the coast (direction of arrows), there is a frequent reversal of current in the bayou due to shifting winds. This not only permits freely the dispersal of *giganticaerulea* across the ridge, but up the two open ends of the bisected slough. It is usually in such sloughs that *fulva* makes its most intimate contact with *giganticaerulea*, fields of hybrids often resulting. Hybrids are sometimes found along the outer edges of the ridges bordering the cypress swamp, but not as frequently as in the bed of the slough.

its entirety. The sandy strand belt along parts of the lake shore is certainly of coastal plain origin. There are buried islands of this material, vast in extent, along the southeastern and possibly along the southwestern shores of the lake. Certainly this species clings closely to the rear of the strand and possibly also to outcroppings of this ancient sea island sand. The recent drainage of marshes and development of the city of New Orleans toward the shore of Lake Pontchartrain has obliterated most of the irises formerly found there, thus making difficult a study of their natural distribution. Drainage excavations in that section have revealed the unsuspected presence of this sea island sand, in some places barely covered with a layer of muck. As both the muck and the sand sometimes show a decided acid reaction, I believe the problem of *virginica* distribution south of the lake is on the way to a solution. There is also the possibility that railroad embankments in this section are made up in part at least of coastal plain soils brought in from across the lake.

It is south of Lake Pontchartrain that the ranges of *fulva* and *virginica* approach nearest one another, but actual contact is usually prevented by a mucky marsh zone¹ lying between the sandy lake shore ridge and the Gentilly-Metairie alluvial ridge. In this mucky zone, *giganticaerulea* alone is present. Even the hybrids between *giganticaerulea* and *fulva*, so common along this alluvial ridge, do not penetrate the mucky zone.

A CRITIQUE OF DR. JOHN K. SMALL'S PUBLICATIONS ON EASTERN AMERICAN IRIS

A discussion of Small's work on Louisiana irises seems necessary because my conclusions are to a large extent diametrically opposed to his and because many of his statements have confused iris students. The only hint I can find in Small's publications that many Louisiana irises might possibly be of hybrid origin appears on pages 182 and 183 of his paper "Salvaging the Native American Irises" (1931 b). I do not agree with him in regard to the color range ascribed to *fulva* in that publication, for violet shades do not occur in colonies of *fulva* in habitats free from *giganticaerulea* and his interpretation of the Louisiana *fulva* may include a number of hybrids. Furthermore, I do not agree with his suggestion that

¹Much of this near the City of New Orleans has been drained artificially.

the plants of possible hybrid origin are "now fixed and geographically well established species."

It is the sense of Small's publication that the remote ancestors of our present-day American irises existed on two continental plant reservoirs during the submergences of the continent and during the glacial periods. These reservoirs were the Laurentian Upland in eastern Canada and the Appalachian Highlands in eastern United States. In his paper, "Altitudinal Distribution of Eastern American Iris," Small (1931 a) makes this statement: "The various primeval species of iris migrated southward chiefly through the highlands, as the lowlands emerged from the sea only gradually during the Tertiary period. After the present approximate elevations of the continent were permanently established, the present species of iris or their immediate ancestors spread out from the Blue Ridge-Piedmont reservoir eastward, southward, and westward."

I cannot see why the Iris species should move southward through the highlands simply because the emergence was gradual. Then why should they spread eastward, southward and westward only after the emergence was completed? If any species were adapted at all to lowland conditions, why could not the movement have been as gradual as the emergence, and even fluctuate back and forth along with it? Certainly large colonies of irises are at this day periodically destroyed by natural enemies, droughts, the meanderings and floods of rivers and salt water invasions. They are re-established again, however, during favorable periods. Why could they not have "migrated" back and forth during those very much more gradual and, as far as individual colonies were concerned, far less drastic changes occasioned by the rise and subsidence of the Coastal Plain and Interior Lowlands?

Some of the bog plants and some of the salamander species of the East Gulf Coastal Plain, often found within a few inches of the sea level, are identical with species living in the Tennessee-North Carolina mountains today. When the sea washed the edges of the mountains, certainly some of the mountain bogs were very near sea level, fed by springs from higher altitudes. As land emerged or the sea subsided with the formation of larger polar caps, new springs and bogs were formed on the land near sea level. This new land was largely made by erosion of the materials from the mountains, consequently the basic materials in these bogs are

essentially the same whether in the coastal plain near sea level or at the bases of or even in the mountains. The ecological niche is practically the same. Therefore, I do not see why it should have been necessary for the bog plants and animals to wait for the present lines of the continent to establish themselves before beginning their eastward, southward or westward movement. The same statement should be applicable at least to *Iris virginica*, which belongs to the same community referred to.

In several places in the above mentioned publication, Small states that certain species of *Iris* "descended" from the highlands. If they can exist near sea level today, they or their immediate ancestors most probably could have existed near sea level then. He further states that some of these such as *Iris hookeri* "descended" to within a stone's throw of the sea, and were "unable to regain any of the ground they lost in descending from the highlands." Although I believe that movements from highlands to lowlands could have occurred, I do not see why there need have been any change whatsoever in relative altitude.

Why could not a particular species have existed at or near sea level even while the greater part of the continent was submerged? Certainly during that period there were suitable habitats in the deltas formed by the mountain streams, in mountainside bogs at low elevations, on the landward side of gravel and sand ridges thrown up by the ocean and on benches cut into the cliffs. I do not deny that evolution has been taking place among the irises since they were maintained on the original continental reservoirs; I only question the statement that "primeval altitude" was necessary during that period any more than it is today.

Of course a number of forms such as those of the *versicolor-virginica* complex probably did then and still do maintain considerable altitudinal distribution. Small refers, however, to a half dozen groups of "lost tribes" which in descending from the highlands have left no trace behind. These apparently died out in the rear as they migrated from the highlands. He sums up his conclusions in the following paragraph:

"There are evidences of primeval changes and destruction in and about the ancient highlands. But it is when we consider the remarkable iris development in the lower Mississippi River Delta that the ancient wholesale destruction is emphasized. Where did these many species come from? They or their ancestors moved of neces-

sity down from the highlands, though not a trace of them remains there. Nature has completely obliterated the course of their migration.”

It is particularly in the *hookeri-tripetala* complex and in the Hexagona group, as herein interpreted, that the theory of a necessarily higher altitudinal distribution during pre-glacial times seems unwarranted. I am inclined to believe they existed at comparatively low elevations in suitable habitats, and without changing their ecological requirements or their altitude appreciably advanced and retreated (not upward and downward) as often as was necessary while the continent was gradually assuming its present outline and proportions. The movements of the continent which Small speaks of as being unstable, we must note took many millenniums, and as far as iris migration was concerned were probably not any more drastic than continental movements are, for example, in Japan today. Certainly they were less drastic than the floods, droughts, tropical storms and natural enemy invasions which these plants can and sometimes do withstand several times yearly at the present time. If they had waited until the continent became stable to move across the Coastal Plain to the sea, is it reasonable to assume that they could have crossed an area in which it is impossible for them to live today? Is it necessary to assume that a group of acidophilous mountain plants changed their mode of living suddenly upon arrival in an alkaline environment or, if they were partial to lime-bearing soils during the submergence, that they become acidophilous only for the period of the migration and lost their newly acquired mode of living after traversing the acid belt?

My interpretation of the iris development in the Mississippi River Delta, viz., the existence there of not more than two species and their hybrids, does not need a theory of drastic primeval changes and destruction, new adaptations and re-adaptations, the evidence of which is not at all satisfactory.

In their “Botanical Interpretation,” Small and Alexander (1931) give notes on the distribution of their various “species” which are extremely confusing. For instance, under *I. versicolor* the range is given as “Ga. to Miss., Man., Ont., and Newf.” Under *I. virginica* is the statement, “This species replaces *I. versicolor* in the southeastern coastal plain.” Since it is very generally understood that the region “from Georgia to Mississippi” is in the southeastern Coastal Plain, the two statements are contradictory.

In the same publication mentioned above, *I. shreveii* is reported as living in non-acid soils and replacing *I. versicolor* in the Mississippi Valley. Whereas *shreveii* (*virginica* as used herein) does replace *versicolor* throughout its range, neither species occurs in the non-acid Mississippi Alluvial Plain which extends from a little north of Cairo, Ill., to the Gulf of Mexico. On a recent trip (August, September, 1934) through northwestern Louisiana, Arkansas, Missouri, Illinois, Indiana and the western portions of Kentucky, Tennessee and Mississippi, the absence of *virginica* varieties from the non-acid soils of the Mississippi Valley and its almost universal occurrence in suitable localities in the acid soils bordering that region was definitely verified. It was not only completely absent from the valleys of the lower Mississippi and its non-acid tributaries such as the Red and Ohio, but also from the calcium-bearing soils of the bluff lands bordering those valleys. The taxonomist should think more in terms of physiographic divisions than political boundaries in writing up his distribution notes or stick to structure alone and leave distribution to the bio-geographer.

In view of the findings herein reported, as incomplete as they may be, obscure statements such as made by Small and Alexander regarding the habitats of the various forms described, e. g., "swamps, marshes, ditches, and stream banks," are entirely meaningless. These habitats in themselves are almost as diversified as the physiographic divisions in which they occur.

The definition of a species given by Small and Alexander (1931) is rather presumptuous. The statement reads, "Our usual criterion for assigning the status of species is an isolated colony or colonies, the plants persisting through propagation by rootstocks and by an annual accretion of seedlings without showing variation in the characters of the perianth." In the first place the words "isolated colony" are used in too small a sense. All species, even in the broadest sense of the term, are isolated even if they spread over a continent or more, but to apply the term species to a clone with two or three flower stalks, or to a clone of any size whatsoever, is shrinking the usually accepted definition to the vanishing point.

Furthermore, I object to the assumption that the "colonies" referred to propagate by the annual accretion of seedlings without showing variation in the perianth. My observations point to the conclusion that many of Small and Alexander's "colonies" are

single clones which have increased solely by rhizome propagation from single seedlings. The chance for an iris seed to successfully germinate and develop into a mature plant in nature seems to be one in hundreds and to develop within the confines of the parental clone perhaps one in thousands. The rhizomes usually mat the soil and prevent partial burial of the seed so that within the area of a clone, ants, rodents, or other enemies are apt to destroy it before germination. If not destroyed, the seeds will lie exposed until high water carries them off to a more suitable spot for germination. In nature such spots are sometimes few and far between. Although I have not gathered sufficient evidence to prove these assertions conclusively, I believe the burden of proof rests with Small and Alexander, who have not put forth any evidence that their innumerable species all reproduce by the accretion of seedlings without variation in the characters of the perianth. Small (1930 c), in another publication, admits that there is a paucity of seeds in some localities due to the activity of rats, rabbits and other animals.

A few comments on the keys and descriptions furnished by Small and Alexander (1931) may not be out of order, as their publication has given no end of trouble to students of irises of this region. Whereas keys planned for an entire continent are often difficult to use in a given locality, the species (in the Linnaean sense) of a limited region are usually definable with comparatively simple keys and descriptions. In using Small and Alexander's "Botanical Interpretation" just the opposite seems to be the case. Unless one knows the identical clone from which a type specimen was taken, he will experience difficulties in identification. This is partly because of the large number of relative terms used and partly because new natural hybrids are developing every year. The terms used are often indefinite and, in some cases, even inconsistent and species are not easily checked even when the type clone is known.

Take a case in point. *Iris vinicolor* Small is rather common, being as I believe a hybrid between typical parental stocks of *fulva* and *giganticaerulea*. The usual form has small lateral ridges on either side of the basal midrib. If these "crests" are recognized as such, the "species" would fall either under *Lancieristatae* or *Tricristatae*, for in the *Unicristatae*, where *vinicolor* is placed, the statement in the key reads, "Crest simple, a single ridge in the sepal blade." Yet under *Unicristatae*, we find listed both *violipurpurea* and *vinicolor* with rudimentary laterals. Must it be left to the

judgment of the iris student as to whether or not a lateral "crest" is too rudimentary to be recognized at all when reading one sentence in the key, and yet important enough to distinguish a species in a later sentence?

If the lateral "crest" is totally absent, a "species" of the same color as *vinicolor* would become *viridivinea* under the key. In reading the description of *viridivinea*, we find the color of the sepal to be "red violet" or "vinaceous." In the description of *vinicolor* we find the sepal "vinaceous purple," and in the key, "wine red." If there are recognizable differences between red violet, vinaceous, vinaceous purple, and wine red, the colors should be defined or reference made to some standard. Does vinaceous refer to any vinous shade or to Ridgeway's definition?

Now if the shade of a sepal with other *vinicolor* characters is "violet-purple or rose," according to the key it should be *violipurpurea* instead of *vinicolor*, although there is no mention of a rose-colored form in the description of the former. Thus, *violipurpurea*, according to the key, has two color forms, whereas *vinicolor* has only one, a vinaceous purple. This would seem to fall midway between the two colors given for *violipurpurea*. Thus, the two extremes are the same species, the intermediate, a different species. What student is bound to accept such an incomprehensible and arbitrary classification? In the key, *violipurpurea* has a blade "fully three times as long as the claw." Under the description the blade is "about twice as long as the claw." The latter measurement is the same as in *vinicolor*, yet the length of the blade in relation to the claw is given as one of the key distinctions from *vinicolor*.

In many other instances in the same publication, color terms are equally indefinite and sometimes meaningless. For instance, the term rose, as used for *violipurpurea* and others, is indefinite in character. Rose, as generally used, refers to a pure light red. A rose-colored iris could be any one of the variable shades of rose red or pink. However, a pure red or pink, and consequently a rose color, does not exist in Louisiana irises. *Fulvaurea* is described in the key as being red or orange-red, in the description as crimson-scarlet. Crimson means a red of bluish tone, scarlet, a red of orange tone. The two blended together would produce a brownish red, neither a crimson nor a scarlet. The "crest" of *fulvaurea* is given in the key as clear yellow, in the description bright yellow to red orange. How can one reconcile these differences?

Even when one knows the type clones, difficulties are encountered. *I. fourchiana* from the type locality has one to three narrow indistinct laterals, but is placed in the Lancicristatae. *I. violi-purpurea* has rudimentary laterals, but is placed in the Unicristatae. What significant difference is there between a narrow indistinct lateral and a rudimentary lateral to warrant the classification of these two irises not only as different species but as belonging to different major groups?

I have seen some hybrids with "crest" characters so indeterminate that it was impossible to decide which of the following four groups to place them in: Unicristatae, Lancicristatae, Tricristatae or Coronicristatae. I have seen others with the "crest" split on one sepal and acute or acuminate on the others. I have seen twinned sepals, partly divided sepals, sometimes the flowers having four, sometimes five sepals. In these the twinned sepals are invariably Unicristatae or Lancicristatae, the unpaired sepals on the same flower, Bicristatae or Coronicristatae. In one instance the terminal flower had a peculiar bicolor effect, the right half of each sepal, raspberry, the left half, ruby. This was not the case in the other flowers on the same stalk, which exhibited the bicolor in part, usually on one sepal only. Such phenomena not only make identification very difficult under Small and Alexander's classification, but are very suggestive of the effects of hybridization.

Finally, the keys and classification referred to are insufficient, because whole series of forms exist, especially in localities not seen by Small and Alexander, which cannot be classified by their use. Instead of trying to find our way through this apparently hopeless maze, is it not simpler and more logical to assume that no essentially different ecological conditions have developed south of the Appalachians since the tertiary era, except tropical Florida, and that no drastic biotic changes have taken place in the region, but that the profusion of forms found among the irises of the Mississippi River Delta are developing today as natural hybrids of two closely related lowland species, meeting through an environmental coincidence, and hybridizing largely due to the influence of man-made factors?

THE FUTURE OF LOUISIANA IRIS

It is the sense of Small's publications (1931 b and c) that the iris fields in southeastern Louisiana are being wrecked by man-

made factors and many "species" destroyed. This of course is only too true where civilization is encroaching upon the former swamp lands. On the other hand, contrary factors are at work. I have shown that man-made factors such as ditching, deforestation, and cattle grazing under certain conditions, not only increase parental stocks, but encourage natural hybridization. If the innumerable forms exhibited by the irises of this region represent distinct species, the last living representatives of "lost tribes," then of course most of them are doomed, for any unique plant is soon removed by some garden enthusiast and if not of hardy stock may soon perish. If, on the other hand, all but the four widespread species recognized herein are natural hybrids, then of course there is nothing to prevent new hybrid seedlings from developing annually in places where the parental stocks of *fulva* and *giganticaerulea* are still numerous. My observations strongly favor this latter view.

If this view is correct, as the scant but rather conclusive experimental evidence also tends to prove, then these irises have a bright rather than a gloomy future, since they are already being sought after by flower lovers and horticulturists because of their striking beauty. With the assistance nature has already given them, hybridizers, within a few years, will be able to produce many hardy garden varieties with undreamed of horticultural qualities. It should be the aim of the hybridizer to combine the color influences of *fulva* with the flower structure of *giganticaerulea*, more particularly with those forms of *giganticaerulea* which show striking features and colors in the basal midrib and adjacent area. Any flowers with outstanding horticultural qualities developed should be re-crossed with hardy hybrids in order to produce good garden varieties.

In this connection, I predict also a bright future for these irises in the study of biology. Anderson's admirable study (1928) of the less variable northern blue flags points strongly in that direction. I do not believe that there is any other group of living plants so well adapted for the study of experimental evolution as the North American irises. They are accessible both for field and laboratory studies, they are hardy in almost any climate, they are large and conspicuous and have a wide color range. Furthermore, they will propagate indefinitely through branching of the rhizome, they can easily be hand pollinated, and fertile hybrids can be produced between some of the more important species.

SUMMARY

Four species of native *Iris* are recognized in this publication as occurring in Southeastern Louisiana, one, *I. virginica*, belonging to the Virginia subsection of the genus and three, *I. foliosa*, *I. fulva* and *I. giganteaerulea*, belonging to Hexagona subsection. The first is partial to acid soils, the others to circumneutral soils, *giganticaerulea* tolerating greater alkalinity than any of the others.

I. virginica is confined largely to depressions in the sandy marine formations in the Coastal Plain, *I. foliosa* to sloughs and swamps in the loessal formation or Bluff Lands, *I. fulva* to stiff clay soils bordering alluvial swamps and sloughs, and *I. giganteaerulea* to mucky clays fringing sub-maritime marshes preponderantly fresh.

In the zone where *fulva* overlaps the range of *giganticaerulea*, natural hybrids are likely to occur and in some places are found in great profusion. These are intermediate in character between the parental stocks, but sometimes present striking phenomena as a result of combining characters of both parents.

Small and Alexander's interpretation is too artificial, insufficient to explain the evidence, and has no ecological or biogeographic foundation.

Whereas some serious destruction of iris fields has occurred and perhaps many natural hybrids have been lost, the forms recognized herein as species are by no means on the verge of extermination and new natural hybrids are being developed annually, probably on an increasing scale.

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IRIS OBSERVATIONS AND COMMENTS FROM THE SOUTH

SAM. GRAHAM, GEORGIA

■ While earlier than normal the past season of iris bloom was of unusually high quality. I cannot recall having seen them with a higher standard of bloom. In practically all gardens I have visited the same conditions existed. In the South this is nearly always true when our winters are either normal or colder than normal. Warm winters start premature growth and when followed by spring freezes play havoc with Southern iris. Yet even then many varieties come through and bloom well. The tenderer kinds are the ones most affected. Those of *mesopotamica*, *Ricardi*, and *cypriana* parentage are the ones that need careful attention when such conditions arise. When growth is begun in January or February it is always safest to take no chance but cover well with straw or similar litter; then you need not worry about what March weather may bring. Precaution is far better than taking the risk when such conditions arise.

I was quite fortunate in being able to visit a number of Southern gardens the past season and was impressed not only with the quality of bloom but of plant vigor and appearance. Of course, we in Georgia as well as our other Southern states must for the present "take our hats off" to Tennessee. There are probably not only more but better grown iris in that one state than all other Southern states combined; however, some of the others have had cases of "Iris Fever" and it might be well for Tennessee to look out for her future laurels.

Mr. Clint McDade, of Chattanooga, Tenn., has without question the best collection of iris in the South, not only of American originations, but foreign as well. His collection of fall-blooming iris are the finest in the world. His own originations are of the very finest quality. It is a wonderful sight to see them during October. Not only in iris, but his collection of peonies, roses, gladiolus and all kinds of rare plants and shrubbery is wonderful. And aside from having them he knows how to produce perfect growth. To Mrs. McDade I feel sure a great deal of his success is due. She is a most enthusiastic garden lover and knows everything in the garden by name. Of course, everyone in the iris world knows of Nashville where more iris

are grown than any city of its size in the entire world and how fine they are grown. Chancellor Kirkland, Mr. Washington, Connell, Williams, Stahlman, and numerous others have wonderful gardens. Some of our finest productions have come from these gardens and many other excellent ones are yet to be introduced.

In Kentucky Dr. Grant of Louisville has a very fine collection as has Mr. Fishburn of Roanoke, Va., Mrs. McColl, Bennettsville, S. C., and numerous others. In Georgia there are fine collections in Atlanta, Athens, Augusta, Marietta, and other "iris mad" cities. So it might be well for some other sections of our country to guard closely or the South may yet wrest from them their present day iris supremacy.

In looking back over the past season there are many new and comparatively new varieties that to me were quite outstanding. Probably the greatest improvement was most noticeable in yellows. Happy Days, Lady Paramount, Alice Harding, Eclador, California Gold, and Alta California are all wonderful iris. A newcomer is Golden Hind an English introduction. As I saw it in McDade's garden it was quite outstanding especially its color; the best I have seen in any yellow. Had it better form and taller stalk I could conceive of nothing finer in the deep yellows. It is one iris I must have. Lucretia Bori, an introduction of Mr. Schreiner, is very, very fine as is also Jasmania, an Ayres origination. Mr. T. A. Washington had one of the finest yellows I saw during the past season and Chancellor Kirkland also had an excellent one. I was told Mr. Washington's contained no Dykes influence.

Some blues of varying shades I thought most outstanding were Shining Waters, Sierra Blue, Blue Triumph, Indigo Bunting and Missouri. The latter, while a bicolor, was in my opinion one of, if not, the best. A splendid grower with beautifully formed blooms of remarkable substance. It does not fade and blooms over a long period of time. The only fault I can find with Blue Triumph is its tendency to fade; otherwise it is wonderful. I would not be without it. Sierra Blue and Shining Waters have yet to prove their hardiness in the South. Provided they do they will rate high up in the nineties.

The best things I saw in pinks and pink shades were Ethelwyn Dubuar, Pink Satin, Dog Rose, Eros, Imperial Blush, Airy

Dream, and Ambrosia. There is still plenty of room for improvement in the pinks.

Gudrun, Easter Morn, Parthenon, Venus de Milo, and Joyance were the most impressive whites. In my garden a large clump of Selene was very fine. Gudrun carries the largest bloom of all, has splendid substance and proven quite hardy. Erratic performance is my only objection to Easter Morn; when it blooms well nothing can equal it. Venus de Milo when well grown and in a large clump holds its own with any of them. Dr. Kirkland has a splendid new white and a new one of Mr. J. Sass under name of "Crystal Beauty" is said to be most outstanding. I have never seen it.

In red-toned varieties Cheerio and Burning Bronze were the best I saw and are truly very fine. Ethel Peckham, Joycette, Indian Chief and Dauntless I also saw in wonderful bloom. All are great iris.

Of the various shades of tan I still like Jean Cayeux although Tint O'Tan and Byzantium are very fine. I hope to have both of them. Great things are claimed for Brown Betty but for me it failed to bloom the past season.

In other colors and color combinations there are too many fine ones to comment upon. Copper Lustre, Junaluska, Neon, Directeur Pinelle, Rosy Wings, El Tovar, Vision, Spokane, War Eagle, K. V. Ayers, Itaska, Trail's End, Maluska, Shirvan, Mary Geddes, Natividad, Blue Velvet, Blue Monarch, At Dawning, Persia, and Evolution are a galaxy of stars I would not want to be without. They by no means comprise all the "blue bloods"; are just some I happen to recall that were in exceptionally fine bloom. I forgot to mention a seeding of J. Sass I saw growing in Mr. McDade's garden under No. 33-8. While a plicata it was far superior to any I have ever seen. Cut it as I could I gave it a rating of 96. The bloom was large, of perfect form, and splendid substance. The stalk was tall and beautifully branched. When introduced I feel sure to those who like this type of bloom their enthusiasm will be equal to mine.

In conclusion I wish to commend Mrs. Douglas Pattison's "Foreword" remarks in her 1935 Catalogue. I refer especially to her comments as they relate to Iris Ratings. A-B-C-D classifications certainly do not convey definite idea of iris value. Why should the lines of demarcation be fixed at 90-85-80 and 70?

Of those rating 90 and above, some are certainly more meritorious than others. Take yellows for example—my “A” ratings ran 90 to 96 and so on throughout the list; with other colors I found like variations. Yet everything was grouped into four classifications and covering a range of thirty points. I certainly did not think those I rated 85 as good as the ones I rated 89 yet in giving all “B” classification they were supposed to be equal in merit. Individual ratings are much more interesting and certainly convey better ideas of value to the general public whose purchases are guided to a great extent by the Society’s rating.

This recalls what I have so often advocated that ratings should be based on a fixed standard of value. Color apparently enters so largely in one’s appraisal of an iris that in many cases ratings of really fine variety are ruined because the particular judge in rating it does not like its color. I recall in the 1933 ratings the following comment appeared in the BULLETIN: “Variegatas were severely cut for color, indicating their particular type seemed to be unpopular with the judges.” A great many people like the variegatas much better than these judges who ruined their ratings and probably gave high value to other colors they happened to fancy and which those partial to variegatas might care little for.

As to everything excepting color one standard of value would be sufficient. For example let any high class iris be given a definite rating for every component that the judge is to be guided by in compiling his rating. Then the variety for judging should be judged in each particular by comparing with these set standards. As to *color* this same variety should be judged by comparing it with the fixed color standard in its particular color. Let variegatas be judged by a variegata, Vision for example, with value of say 23 for color. This would compel the judge to rate all variegatas in comparison with Vision regardless of whether he personally liked the color or not. And so on through the various color classifications. Let each subject be judged by comparison with a standard for the particular group its color suggests. In this way color preference would be eliminated and real information furnished to those seeking it. This, of course, would entail more time but what of that if the Society can attain what it really is seeking and the general public most assuredly desire “True Iris Values.”

VARIETAL NOTES, 1935

SHERMAN R. DUFFY, ILLINOIS

■ An amazing array of new irises was shown this year in Mrs. Douglas Pattison's Quality Gardens in Freeport, amazing not only in number, some 200 odd new candidates for popular garden favor, but amazing in their uniformly high and desirable quality.

When it comes to the soft yellows and red bicolors it seemed as if you couldn't turn around without running into a new one and if I were forced to make a choice I believe shaking dice or cutting cards or putting the names into a hat and drawing one out would be as good a way as any to make a decision. One thing is certain, they cannot all possibly be absorbed by the iris buying public.

After what amounted to a year's iris moratorium in the Middle West because of the devastating drought and extreme heat last year, this extremely wet season has brought a lush growth of foliage and length of stem we have never before seen. In many gardens the drought was not broken last fall until so late that the irises made practically no growth and formed no buds and consequently there was very little iris bloom in many gardens this spring. Freeport, however, happened to be in a belt, which had good rains in August, stretching across Iowa in a northwesterly direction while those of us above and below it kept on sizzling and parching.

Never was there such a production of iris "spinach" in this district. Mr. O. E. Herd, Jr., of Freeport claimed the prize with a seedling decorating the curbing beside his home which had foliage nearly six inches across.

Freeport gardens had a marvelous wealth of iris bloom but it was, taken by and large, a season the like of which was never known before in this part of the country and is not likely to be again encountered. The late J. C. Vaughan often asserted that there was no such thing as a normal season as in all his long life he had never encountered one. But so far as normalism goes, we have rather definite successions of bloom which recur quite consistently.

This year we had *Narcissus poeticus recurvus* in fine form,

tulips at the height of their glory, the lilacs in amazing abundance and enormous trusses, crabs, thorns, primroses of April time, and other subjects all blooming as we seldom see them with the tall bearded irises. Intermediate irises in many cases didn't start blooming until well after the tall bearded and we had them with us also.

We had more things to see and admire at Freeport than is often the good fortune of any gardener to encounter besides the irises.

I have no doubt that as a result there will be many plantings of the beautiful pink parrot tulip Fantasy with *Anchusa myosotidiflora* at the base of a white lilac. I shall do that myself, as I don't know how it could be bettered.

There will be a great Johnny-jump-up revival because of two of the big beds in Mrs. Pattison's formal garden which were a solid mass of one variety of this pert little viola, sheets of bloom above which the amazing new irises flaunted their beauty. And everybody wanted the Johnnies. They seemed to fit an iris of any color.

Aside from the irises one can never visit Mrs. Pattison's garden with an observant eye without gathering some valuable gardening idea as the owner of this huge iris nursery is a master gardener.

The peonies, of which there is a fine collection in the garden, behaved themselves this year and kept their buds tight closed. They are one of Mrs. Pattison's predicaments; for some years they have bloomed with the iris and stolen the show when they weren't desired.

An appraisal of the new irises this year is a most difficult task but it is not at all difficult to name the headliners, irises so outstanding that there could be no mistake about it.

Of these I should place at the top Hans Sass' wonderful new white, Snow King, which on the single stalk as it bloomed at Freeport, I think can be safely hailed as the finest white yet produced and I have seen all the highly praised and rated whites except Polar King. I do not believe there is any such thing as a hundred per cent iris but for the life of me I could not pick any place in that iris to apply a discount so I should have to do so on general principles.

It was the largest white in the garden with a magnificent shoulder high Purissima in competition. Of faultless form, the big blooms, two being open at once, were so faultlessly placed on the stem that they did not touch and stood out distinctly, a clear unmarred white with flaring falls and a pale yellow beard. And the blooms stood through an all night pelting rain and then a day of steaming hot sun without a tremor. It was 3 feet tall, a one year root.

Before Snow King opened, Gudrun had ruled the garden as the great white and it is so distinct from Snow King with its unusually long and wide drooping falls and different style of growth that they do not compete. Gudrun was the finest white I had seen until Snow King appeared and I do not discount the quality of Gudrun because of Snow King. It is an entirely different type. Mrs. Pattison had several good sized groups of it that commanded great admiration.

Still another highly superior white was unfolded in Jacob Sass' Crystal Beauty, the whitest white of them all and of still different form and style from either Snow King or Gudrun, not quite as large as either and a handsome white as one could ask.

Near them was a magnificent stalk of Easter Morn with four open flowers and this is a superfine white. And then another white of great excellence and as fine an all around white as any one could well ask was Venus de Milo. There seems little left in the white class for development.

And in passing I can't omit mention of that handsome and dainty white ruffled gem, Columbine, not big but a beauty. And Snow White and Micheline Charraire still looked well to say nothing of Shasta, always a great white.

Second in the high lights was Wasatch which all accredited judges who saw it did not hesitate to declare the finest of the large flowered plicatas yet produced. This is a production of Mr. Herman Thorup of Salt Lake City, Utah. It was a headliner last year but this year we saw it in quantity and in various locations. It is a truly remarkable iris. The suffusion of color in the standards and marking of the falls make it less spotty than most plicatas. Jacob Sass showed another fine big plicata, blue-trimmed, in May Hall.

The iris that struck me as the most unusual and which I found myself a solo largely in hailing as great was also from

Mr. Thorup, Deseret. This is the largest and tallest pure variegata type I have ever seen and, so far as I can learn, that has yet been produced. By pure variegata, I mean one with clear unclouded yellow standards and darker falls. All of the so-called large flowered variegatas I have inspected have more or less clouded standards. Even Vision, finest of the type we have had lately, has decidedly brown tinted standards when it first opens which fade to clear yellow but Deseret is yellow from start to finish, the beautiful clear carrying yellow we find in the standards of Rialgar which I have always admired. The falls are heavily veined mahogany on a yellow ground, the veining covering the fall leaving a thin edge of yellow. It is a big flower on a three foot well branched stalk. I can visualize it rising majestically above Hemerocallis Orangeman or Gold Dust with a brown-toned iris such as Grace Sturtevant as companion piece. Being one of the very few who really like variegatas, it was discouraging to lead visitors to see this fine new one only to have them say, "You can have it." To which I would say, "I'd be glad to."

Another high light that struck everybody's eye was California Gold, at last a big, tall, real, deep rich yellow, the kind that Dr. Everett would call an "honest yellow, not one of those near white things." It made a full 3 feet, which is taller than usual for this iris.

There was great interest in Lady Paramount which everyone wanted to see. On its showing at Freeport, I am inclined to believe its introduction was premature, if not a mistake, and that its chief value is for bleeding purposes. Mr. White in Lady Paramount has given us a W. R. Dykes with stems more than forty inches tall but in doing so something of the quality of W. R. Dykes has been sacrificed both in substance and texture. The blooms of the two are so close that it offers nothing in the way of novelty in color or form. The falls seemed slightly paler than those of Dykes compared with a nearby bloom of the latter.

Mrs. Pattison had a finely grown two year old clump that gave four stalks of bloom which, were they straight, would have been around 44 inches tall. No discount could be applied for lack of establishment as it couldn't be better or more healthily grown even in its native California. Only one of the

stalks had led an upright life but this one had not opened any buds so it was open to suspicion when the other three, all crooks, were considered. They were sinuous and floppy and had to be staked. Nearby was a block of Aurifero, one of Lady Paramount's parents, a writhing mess, and the lady apparently has inherited the snakes in this climate.

If this unfortunate weakness of stem persists it will be quite useless. The only circumstance to be considered before forming final judgment is that in this exceptionally wet and cool season the extremely sappy growth has exaggerated weakness of stem in all irises at all prone to go over and some of the strongly standing ones showed a tendency to bend at the blooming tops. We shall have to wait for another season to see if the stems have strength to stand alone. If they do, it will easily displace W. R. Dykes and should be a magnificent pale yellow. It showed few fleckings at Mrs. Pattison's but the substance was not as good as that of Dykes and the handsome crepy texture of the standards of Dykes was somewhat lacking. If the stems do not stiffen up, and it gave little promise of this as it grew at Freeport, Dykes is the better iris although not so tall.

To take the yellows in the order of their yellowness, we must begin with the richest and finest yellow yet shown in any iris I have ever sighted, Hans Sass' intermediate, Golden Bow. I had not believed that a more brilliant yellow was possible or likely in an iris than that of Crysoro but Golden Bow is richer and more glowing and with a remarkable heavy, velvety substance. A slight undertone of brown was detected by some observers which they believed gave it its richness of color. This is a stunning bit of color.

Next in intensity came California Gold and then Dr. Loomis' new things, his J 20 which we had previously seen, now being named Eilah, a fine rich yellow only slightly lighter in tone than California Gold, but neither so large nor so tall, an iris of fine form and substance, of beautiful color and a valuable addition to the list of yellows that are yellow.

Another fine yellow whose beautiful color tone was finely shown by a clever planting against a background of peony foliage was an un-introduced Loomis seedling that looked plenty good enough to me to make its bow in first class iris company, only a little lighter than Eilah and not quite so large

but of fine quality. This was K 8, about 3 feet tall, nicely branched with slight olive veining and a fine yellow beard. It would be a welcome addition to anybody's garden.

A free blooming low growing deep brilliant yellow from Dr. Loomis was also a glowing spot and a bit of fine garden value. This was L 17. The falls were rather heavily veined brown.

The tallest of Dr. Loomis' yellows was L 14, of medium depth, a beautiful soft yellow with a suggestion of Dykes texture and parentage about it. It was of fine size and a nice stalk and had excellent carrying quality. He is reported to have some still finer yellows yet to be shown.

His white intermediate, first noted two years ago, has made a fine clump and remains the clearest white of the intermediates. Its wide almost horizontal falls suggest Dominion ancestry. Its substance is unusual and it has an icy clarity of color most unusual in the intermediate type, a fine iris.

The cool, wet spring was made to order for Desert Gold which for the first time in this climate had a real claim to the Gold part of its name. It made three foot stalks with huge soft yellow blooms which in hotter seasons were more nearly white and was one of the outstanding yellows on display. With the extra length of stem brought on by copious moisture, the bunching which was a bad fault in previous seasons was not so strongly shown although the blooms at the top of the stalk were badly crowded. The yellow tone, compared with previous seasons, was surprisingly fine.

Alice Harding was outstanding among the soft yellows and when better established undoubtedly will stand high up in the list as it was blooming on late planted divisions and had not, evidently, made full height although producing good stalks of fine quality as to branching. The blooms are of beautiful clean cut finish and fine color with an unusual buff tone to the yellow, rendering it quite distinct from other soft yellows. It is a real beauty.

F. E. Reibold sent a fascinating lot of seedlings for trial and showed one of the bloomingest yellows of the long list of beautiful soft yellows. This is Welcome and anybody would say "yes" to that. It was one of the tallest and best branched of the lighter yellows and a remarkably prolific bloomer as seemed all of his seedlings. This looks like one of the finest of the new

yellows. It is of medium depth, very soft in quality with flowers of good size and fine form.

Bob Schreiner had a yellow of good color in the lighter tones and Mrs. Pattison who has been quietly amusing herself by raising seedlings in one of her outlying reserve gardens had a good yellow which was tagged "Keep" and it looked promising, being a little different with a brown tone in the falls making it distinctive in coloring, something after the style of Alta California but with brighter standards. The latter under the influence of the cool, wet spring showed more brown than usual and still remained one of the tallest.

Son Robert apparently was not in his best form as he bloomed low and bunched, a fine bright color but with the falls heavily veined and streaked.

Coming to the betwixt and between yellows and whites, the ivories and the bicolors of white standards and yellow or yellowish falls and yellow standards and white falls, we find some exceptionally fine and delicately beautiful irises. Of these Col. Nicholls has a fine thing in Sun Mist which was much admired, a large flower of medium height with creamy standards and falls and veined over the greater part of the blade with olive and yellow, giving a delicate yellow glow to the bloom. The blooms are well placed and it is a most attractive and unusually colored iris.

Most imposing of the creamy and ivory tinted novelties was Dr. Kleinsorge's Kalinga, distinguished for its symmetrical, low branched stalk which seemed to set each of three big blooms open at once equally distant on the stalk. It is a beautiful creamy white of 40 inch stature with ruffling to add to its attraction.

Sweet Alibi showed a beautiful ivory toned bloom but did not make a typically developed stalk. It indicated from the single bloom and descriptions of others who have grown it that it is at the top of the creamy irises.

Euclid Snow's Attye Hall, a big creamy white with deeper falls of fine form and substance, was much admired. The brilliant gold and olive veinings at the throat and striking beard add to its attractions.

Dr. Ayres had the skyscraper of this type, a four footer with yellow standards and white falls that made a striking appear-

ance but with the blooms all too much at the top of the stalk. A foot lower and far finer was another seedling with deeper standards and whiter falls, a big flower that looks like a winner. It was a bit too crowded to show its real effect and overshadowed by its taller companion.

Nothing shows so plainly the brightening of the general iris color scale as the irises we used to consider good reds. How purple they now look beside the present day crop of reds. We grew leg-weary trudging from new iris to new iris and viewing new reds and there were some beauties.

The introduction by Hans Sass of King Tut marked a most remarkable stride in putting brilliancy into the tall bearded irises. No seed parent seems to be more strongly dominant in transmitting color and the strange part of it is that a King Tut seedling always has larger flowers and a taller stem than the King himself. This is a brown red and gets us away from the purple reds which are, for the most part, rather dull and need full sunlight illumination to bring out the red tones.

The row of Red Wing x King Tut seedlings I saw just coming into bloom on Jacob Sass' farm three years ago still stands out as the most blazing aggregation of irises I ever saw. These irises still blaze. Spokane was named of this series and gave a fine bloom at Freeport in glowing brown red, a variant of King Tut in deeper color. The un-introduced 30-40 of this series which some of us treasure through the kindness of Mr. Sass is the reddest and most brilliantly colored of the lot but its standards are fickle, so much so that Mr. Sass, quite properly, did not introduce it although it makes a hit through its color. Sometimes the standards stand erect and far apart. At other times they cave in. As I have grown it for three years I am never certain what they will do.

I am inclined to put Junaluska at the top of the red brigade for the time being for general all around excellence with Cheerio right alongside and with redder tones in the falls but Junaluska is of finer quality otherwise. Mrs. Pattison says she would include it in any present day selection of ten best irises. Robert Schreiner has a seedling of this same type that stacks in quality right up along with Cheerio and Junaluska. All three are gorgeous.

Mr. Grinter had a red seedling of great brilliance, a bicolor that may belong in this class.

While the falls of these red toned irises are much the same in their velvety dark reds, we find the chief variations in the varying tones of the standard which move from very close to variegata yellow to red tones with a strong yellow undertone such as we find in Cheerio. There were several clumps of seedlings of this general type, not identified, in the formal garden that gave a fine flash of color.

There are some exquisite tones in the standards of these red irises and Dr. Loomis had a seedling on trial that was particularly striking in this respect. He had sent it because of the beautiful coloring of the standards which approach shrimp pink and salmon in tone.

Jacob Sass' showy Golden Helmet approached the variegata end of the scale, a handsome iris that will stand out anywhere with strikingly colored standards that carry well above its rich red velvety falls.

Mrs. Pattison had a seedling of her own raising towards the variegata type of unusual character because of the wide yellow margin of the falls. The standards are glowing tan flushed with red, the falls a glowing deep red with the wide margin of the tan of the standards. A seedling sister was larger and duller of the same type, more purple and most striking.

Junaluska, Cheerio, Spokane and Golden Helmet seemed to cover the best in the color range of reds with yellow and brown rather than blue and purple in their composition, a dazzlingly brilliant quartet.

In the rosy tones, the purples with a great deal of red in them, there were some beautiful new ones. Col. Nicholls' Oxheart I thought a beautiful bit of color, a rather deep rose toned self of excellent form and substance. It was quite unlike any of the other red purples and in this range it is difficult to convey any idea of the color it is such a wide field. It had a distinct rose effect. While the plants were not well developed or established and did not show typical stem or growth, the beauty of this iris was manifest.

Coralie would fall in these rose and pink tones and a mass of it was a grand sight this year, attracting the admiration of everyone. It is a fine free blooming iris and I have wondered

how it got its reputation for frailty as it has never shown any such symptoms in my garden nor in Mrs. Pattison's.

A beauty which I had not seen before was Primat, somewhat on the Coralie order but darker in both standards and falls and rosier, a much larger bloom and of somewhat different form. It is of only medium height as Mrs. Pattison grew it as is Coralie but I have an idea Primat will make better height when established. Mrs. Pattison had only the one plant of it which she bought on the recommendation of Countess Senni of Rome who had thought it one of the finest of the newer Cayeux irises. It looks like one of the really great ones on the showing of one stalk which is, perhaps, not enough for sound judgment but I believe this will prove an outstanding beauty.

Countess Senni's namesake was present in a large clump covered with a mass of its huge blooms. It is something on the order of a softer colored Elizabeth Egelberg or Frieda Mohr with a trifle more blue in the standards but a huge flower with more drooping falls than these. The general effect was a rosy mass that was much admired. I did not particularly like the color as an individual stalk but the effect was undeniably fine in mass. It is high branched and somewhat bunched on the stalk which resulted in covering the clump with bloom so the leaves were hardly visible, unusually free blooming for so huge an iris.

Sidney B. Mitchell might be more appropriately named Barkis it is so willing, a handsome rich red purple of unusual quality with less blue than most but it had bloomed on single fans so freely that Mrs. Pattison has far less stock of it than she planted last year. This is a grand iris if it does not develop the trick of blooming itself to death. But it may have been the peculiar season that did such funny things to the iris. It brought out the blue in the pinks and muddied a lot of them that ordinarily are beautifully clear. It also brought out the purple stripes on a lot of yellows that had not shown them previously, the handsome intermediate Ambera among them, that had never before appeared in motley for me.

Dr. Kirkland's Cyrus the Great, reported to be an early bloomer with Desert Gold, came along with the midseason ones this year as did also Desert Gold. It is a strikingly handsome big flower on a tall, well branched stalk, redder in tone than

Blackamoor and between this and Baldwin in depth. There is an intensity in the blue glint in this iris that makes it outstanding. It is illuminated with a fine orange beard. A group of this, I believe, would be most striking in the garden. There seemed to be a black undertone of peculiar quality that brought out its coloring.

W. H. Norton of Mt. Vernon, Ia., had a fine purple crimson, Crimson Petal of fine color, dark and handsome, a self of fine substance and good stalk, 40 inches when at its best.

Mr. Shuber, another Iowan, from Clinton, has obtained a fine break in tall dark violets ranging through a good blue, larger than Sensation and of much the same character and color, to some fairly good lilac pinks of fine height. A dark one of great size had the most intensely blue tones I have seen in so dark an iris. Another was Harmony, but in larger size on a tall stem, blue beard and all. A very tall one, tallest of the series, was close to Violet Crown in color. Violet Crown was in beautiful form, an extra fine iris.

Coming to the blue irises, so called, and they are approaching true blue, I found no reason to change my mind about Missouri having the finest blue tones of any of them, a superlative iris with its two tones, the falls slightly darker than the standards of medium and intense blue. I still stick for Missouri as a top-notch and I'm from that well known state when it comes to a better one—I've got to be shown.

In very dark blues, Mr. Thorup's Bannock is a fine thing, almost a self, a redder blue purple than Blue Velvet with a better stem.

Mr. Grinter's Blue Triumph, as fine a light blue as could be asked, and Jacob Sass' Blue Monarch, deeper in color, stand the test of time excellently, both fine with plenty of buds to a stalk, enduring substance and a long season of bloom.

What factor Mr. Reibold has put into his seedlings to produce so much bloom I don't know. Again it may have been this peculiar season that did it. Whether it is a fixed habit remains to be demonstrated. He has in Meribleu the finest new blue, shown this year for the first time at Freeport, of medium depth, clean color, large flowered, with blooms from the top of its 40 inch stem to the ground. The one stalk had two branches from an inch above ground three quarters of the height of the

main branch. I never saw so much branching on an iris before and wonder if this plant does it regularly.

Paulette was strikingly fine, a single stalk making a bouquet in itself of medium blue.

Wambliska came a palest of blue self this year with the stunning Gloriole a little deeper and the peer of all the palest blues, a wonderful iris. I should like to see Gloriole and Snow King growing side by side for an imposing display.

Dr. Kirkland's Blue Marble attracted much attention and admiration,—a strange iris and different from all the others in its corrugated pointed standards, blue bubbles glistening in the sun in effect, the falls straight hanging and a clear light blue flecked with dark blue and a strong yellow beard. The unusual texture is its chief charm. It is of medium height and excellent proportions. This is such a distinct and unusual type it should be worth introducing.

A fairly distinct class of brown irises has developed in the last few years beginning with the introduction of Jean Cayeux, Gilead, and Rusty Gold and a beautiful lot they are, planting so well with the medium and lighter blues, the lighter toned pinks and the soft yellows.

They range from soft golden tans to the red brilliance of Copper Lustre. Summer Tan was the most appealing of those new to me, neither large nor tall, about 30 inches, with golden tan standards and deeper brown toned falls with a slight ruddy tone. This attracted more admiration than the more glowing and showy Copper Lustre. I think I should like it with the blue of Wedgewood, that old timer that will take so much beating as a good blue, and the soft yellow of Phebus, which doesn't have to take any back seat for the newer yellows.

Rusty Gold was at its brownest and best this year, an unappreciated beauty eclipsed by its larger garden mate, Gilead, but of even finer brown tones.

Copper Lustre is brilliant in color but it seemed to lack substance which Summer Tan does not. The standards sunk under the warmest sun we had and that not so very hot and the falls seemed inclined to curl and pinch a bit. The color, however, is its strong point and it is a glowing beauty in the sun. The two irises are hardly comparable in color except that both are brown.

Byzantium is at once suggestive of Ophelia, done in browner tones and on a taller stem. It has the flush of blue at the end of the beard and is an attractive iris. It holds its beautiful brown tones with a glint of gold in them well.

Gilead in its lighter and more glowing bronzy tones remains one of the very fine things.

Crown Jewel, represented as an improvement on Clara Noyes, I regard as a libel on that beautiful bit of color. Darker and less glowing and with heavier and darker veinings on the falls that curl under badly, I could not give this iris anything in the way of praise.

Speaking of Clara Noyes, when you saw a glowing, brilliant patch in the commercial garden at Mrs. Pattison's it was either Clara Noyes, King Midas, Mary Geddes, Trail's End or Lux. The general effect of any of these irises in a good sized group was strikingly beautiful. Trail's End is an iris of superlatively beautiful coloring and the more you see of it and the larger the group, the finer it seems. I think I prefer it of all this group. Lux furnishes the element of height and is lighter toned than the others, a fine garden plant that needs to be seen in a sizeable group to bring out its full beauty.

Aubade with its pink toned falls made a grand showing, the best it ever displayed, and has not been appreciated at its full value in the past.

Mr. Reibold displayed two of the Aubade type, which is as nearly as they can be approximated, one of extra fine quality. Its name, if I read the label right, is Marikina. A tall, big flower and being a Reibold production, again lots of them with handsome ivory standards and pinkish mauve pale falls. It is a flower of fine form and substance. A smaller, heavily ruffled edition that would make a fine garden clump is Calinda. It is of softer color than Marikina but nothing like its imposing size.

Two beautiful blends in a group of seedlings from the garden of the late N. E. Thomas of Utah were extra good, one in blue tones, light standards with deeper falls of fine size and height, and his Number 6 which gives Genevieve Serouge a close race for the finest blend of the type. It is one of those blends of which Evolution may be taken as the original type but not very much like it. The standards are, as nearly as I can describe them, drab with blue tints and an undertone of rose. The

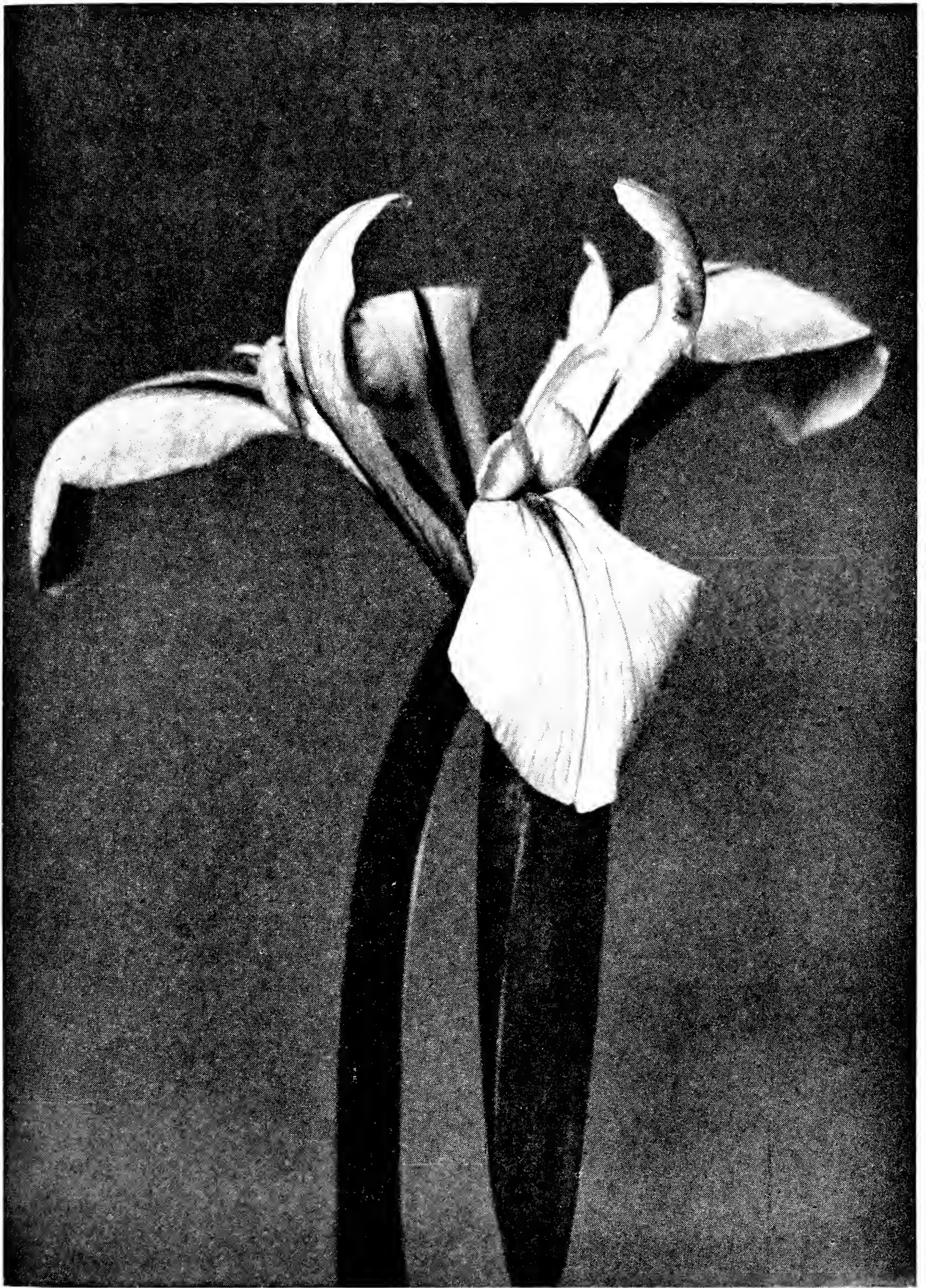
falls have a deep intense blue flash in the center paling to the color of the standards at the margins with a vivid and heavy yellow beard. It was 48 inches tall. It would be handsomely placed with a tall soft yellow like Chromylla. It looked like the best of this type of blend.

Pinks seem still to resist the efforts of hybridizers to produce clearer tones. I had the pleasure of going over the irises with Mr. E. G. Lapham of Elkhart, Ind., who is working diligently for better pinks and already has some fine ones. He expressed the belief that better pinks will be a matter of selection rather than of trying to breed out the blue by direct crosses.

He had a seedling on view that struck me as of fine garden value,—a tone popularly known as crushed raspberry that should be even more effective with the purple reds such as Dauntless and Indian Chief than Hermene which seems, like Midgard, to be made to order for their company. It is a Midgard x Aphrodite cross.

It has definite pink tones and is a striking color. It was a four footer in Freeport and Mr. Lapham says it has made even greater height. The stalk is in good balance.

Eros is another pink newcomer of beautiful coloring but otherwise it is an iris of such poor quality that I do not think it should have been introduced. The substance is flimsy and the stalk close and high branched with a great length of naked leg above the foliage. It is very close to the color of the standards of Mary Gibson, a self, and there can be no question of the great beauty of its color. It looks as if it might be a seedling of Mary as it has all her faults. Speaking of Mary Gibson and illustrative of what great beauty may be obtained from irises individually inferior but with fine color value, a big block of Mary Gibson, a solid mass of bloom, was one of the finest bits of color in Mrs. Pattison's commercial garden. It is an iris for massing and Eros might conceal its weakness by the same treatment.



Lilian A. Guernsey

Iris giganteacrulea alba

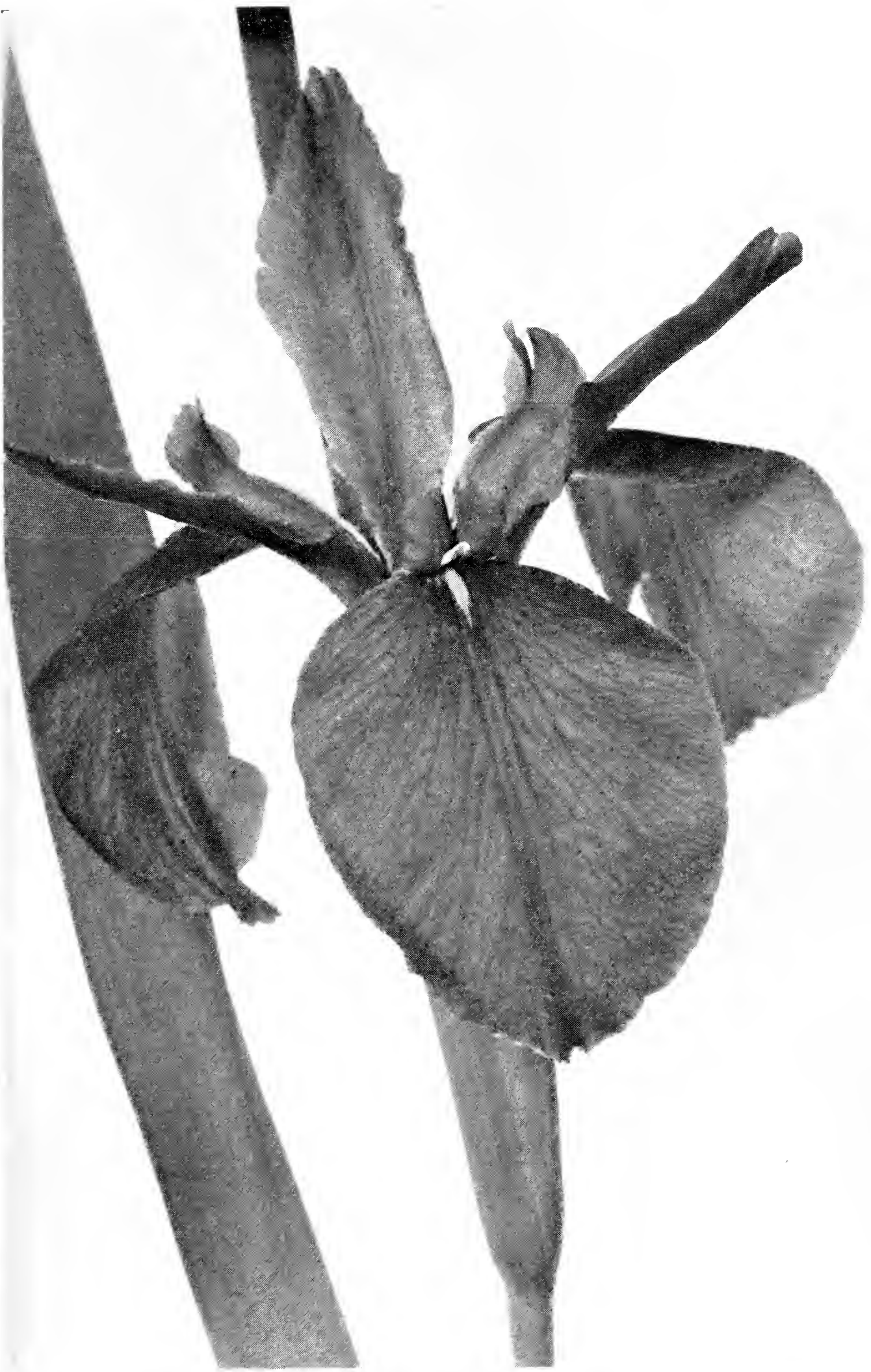
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Lilian A. Guernsey

Iris vinicolor

[76]



Lilian A. Guernsey

Iris regalis



Lilian A. Guernsey

Iris deWinkleri

VARIETAL NOTES, 1934

M. E. DOUGLAS, NEW JERSEY

■ *Alcina*, in spite of a stem weak at the neck, is beloved for its colors.

Alice Horsfall, whose falls seemed to roll under at the edges less this year than last, bears color resemblance to *Black Watch* (*Nic.*).

Anne Marie Cayeux, a good multiplier.

Alta California, for stem deficiency as I saw it, seemed less desirable than *Blazing Star* (*Nic.*).

Angkhor Vat (*Nic.*) in the color range of *Dune Sprite*, *Phosphor*, etc.,—(Kashmir White and Dominion).

Beau Sabreur as seen *en masse* at Mrs. Kellogg's, for pleasing "rememberability" was one of the outstanding effects seen in any garden in 1934.

Bellorio (*M-M*), lovely, novel, and an easy doer with me. I have seen it elsewhere only at Mr. Schreiner's. It deserves wider distribution.

Black Midget has edges far more deeply fimbriated than any other variety known to me. A suggestion to breeders of unconventional types. Visitors do inquire about it.

Black Watch (*Nic.*): I couldn't resist buying this black, red-purple, brown, low-grower to combine with another dwarf of *Al-lure's* general colors, but with less yellow at the center. Both 22 inches to 25.

Blazing Star (*Nic.*), a medium yellow self with wide haft, dainty golden reticulations, heavy beard, shape more elongated than *Primrose*, 4 x 5 inches—34½ inches tall.

Balroudour (*J. Sass*), to me seemed preferable to *Blue Topaz* for form and color reasons. Both superior to *Mme. Savouillan* in their color range, I believe.

Blue Monarch's color is close to *Corrida's* and a more metallic blue. I saw it up to 37 inches, 4 stalks, up to 7 buds per stalk, all segments smooth and all showing the silvery sparkles. Slight fragrance.

Black Warrior: Conic-domed, overlapping; falls flaring with a fillip at the tips. 5¾ x 5 inches. Widely and well branched. In the *Nimbus* color range.

Blue Marble: Pale blue, creped texture, medium fragrance.

Councilman Morris (Dan.): Seen as a cut flower—a red yellow bicolor.

Crown Jewel resembled Clara Noyes perhaps more nearly than any other variety—darker, broad hafts on circular falls. Fine placement—medium fragrance.

Cherry Rust reminded me of King Tut's colors. I had no opportunity actually to compare them.

Cyrus the Great seemed at least as dark as Blue Velvet or The Black Douglas. Fragrance negligible or none.

Debussy resembles Wild Rose in color, and with me is a better grower. Inner Light is in this color range. For the front of the border.

Deise: The plant sent to me bore blooms of color identical with Baldwin or practically so. Have I the true Cayeux variety?

Douglas (J. Sass) was in its second year, 9 inches taller than the first with me; "grayish heliotrope with a purple flush below the beard," as J. C. Nicholls, Jr., says. Prolific. Klamath's colors suggest it. Named for the county in Nebraska.

Dakota (Hardee) as I saw it was a large, tall, free-flowering, deep blue of garden value better than its rating suggests.

Dresden (Richer) was seen at Mrs. Kellogg's as a very low grower—pink and white dominant, dainty, a little beauty just for color.

Dune Sprite of regal ancestry looks the part. 10 for form. Color competitions, Moon Magic, Phosphor, etc. Splendid branching and poise.

Easter Morn I saw in magnificent size, height and shape, but on a stem that was none too good. My one rhizome planted early in July of this year in a specially prepared and elevated bed, *underdrained*, was twice attacked by root rot this summer.

El Tovar: Once you see this one you will have no trouble in remembering its qualities until it blooms next year. When I saw it two years ago in Nebraska, I wanted it. After seeing it again this year, I bought it.

Eppo: I was delighted to see Mrs. Hire's commendation of it. I have been growing and praising it for three or four years.

Fireflash at Mrs. Kellogg's was a deeper Gold Stream yellow of good carrying power; very free, 36 inches, some petals bleaching in intense light. Good landscaper.

Fortunio has large rounded standards, wavy on broad lines. Its falls are held horizontally in perfect style for that form. Color as Mrs. Pattison describes it. Apparently of slow growth—yet my plant made 33 inches its first year.

Fromentin's standards color is close to those of Tuscan Gold as is the falls color, but with distinctive finely etched reticulations the length of the blade—more brown than buff. Conspicuous orange beard. The falls open trowel-formed—the tips up-curving, with age flaring to drooping.

Garnet has good color but the plant lacks proportion. Shifted to my roadside planting.

Flambeau to follow it for the same reason.

Golden Light opened its first bloom at Mrs. Kellogg's on May 30th. I liked everything about it.

Gold Wing might be called a *Pluie d'Or* from the Emerald Isle—a solid iridescent color; well and widely branched; narrow haft, slight fragrance, 36 inches, size $4\frac{1}{4}$ x $3\frac{3}{4}$ inches.

Gentius showed in violet-purple with white streaks or blotches; 24 inches tall, not large, slight fragrance.

Giant King, as I saw it, interested me not at all.

Golden West was as clear and pure as *Nymph* and darker. Fine flaring falls, branched above center, smooth texture, somewhat crowded.

Gold Top's color reminded me of *Adobe*.

Grand Monarch I noted as big, fine, dark.

Hearthstone Copper, while neither large nor tall made a strong color appeal, its falls color suggesting those of *Fulgore*—a comparison I hope actually to make next year.

Henry F. Michell as grown by Mr. L. B. Moffet, Jr., had blooms as large as *El Capitan's*, whose color it resembles. There seems to be no question of its hardiness.

Heloise is a solid dark violet purple self, almost veinless in appearance; even the haft veining is unpronounced. Broad segments. Branched above center. Smooth texture. Good substance. Spathes flushed red. An intermediate.

Hermene is a lovely pinkish color. Its deficiencies are in form and placement, and perhaps in substance.

Hamese, mentioned in an earlier BULLETIN, was presumably a misspelling of *Rameses*.

Helen of Troy has pronounced fragrance. To me it seemed to be handicapped by its flower form and stalk.

Imperial Blush, when I first saw it two years ago, I thought better than Pink Satin. I checked it for fragrance this year and gave it the credit. Next year, I hope to bloom them both in the same bed.

Indian Chief certainly gives Dauntless a good race for the place in my garden.

Inner Light (Scott) resembles Debussy in color, is over 30 inches tall, smooth texture, and a good grower. I hope some grower will eventually introduce it.

Ivory and Gold, I noticed years ago in someone's garden as "a luminous soft yellow, with a bold beard, tall, small, of good garden effect—not a high-rater." It has since been a lost iris to me—I've looked for it without finding it again. Possibly it would not look as good to me now.

Jean Cayeux's performance in my garden justifies all the praise it has received.

Jolly Roger, dark, in Blue Velvet's color group—measured 5 x 5 inches, had fragrance—looked promising.

Jeb Stuart has shiny black buds, deep coffee on creamy brown standards, and falls solid blackish brown. Handsome. Foliage has reddish basal tinge. Vigorous grower. I want to observe its substance and stalk habit again.

Kenwood: Olive brown buds. Standards, buffy yellow; falls, rosy red-purple margined yellowish. 35 inches on a one year plant. Branched above center. Two stalks, up to 6 buds each.

Khalasa is a rich blue-purple of horizontal falls, with heavy substance.

Kilsoquah, as I saw it, seemed deficient in several characters, but they may be good on a better established plant.

King Junior, as I saw it, seemed lacking in color form and quality.

Lenz-Schnee, for all-around good garden quality—under my conditions is certainly outstanding among whites. Needs no coddling, free-flowering, 36 inches tall, 4½ x 44 inches in size, sturdy, healthy, good multiplier. Deserves wider distribution.

Lillian Toedt in color, perhaps most nearly resembles Troost. The glow in its standards gives carrying quality.

Louise Bonnewitz, in color and quality, seemed without interest for me. It has fragrance.

Lux was in bloom on June 1 at Mr. Wister's. A lovely blend, yellow predominating, with pink or rose. Medium fragrance.

Luzianna's color seemed near to Gold Crest's. Slight fragrant.

Marquita, I have seen in one garden each year for three successive years, that is, three different and widely separated gardens, and each time on a one year plant. I consider its color most distinctive and rememberable.

Mary Geddes with me made two inches more in height than *Coralie* attained (each as one year plants). My *Coralie* plant made 4 good divisions when two years old. I have given them a new location to try for better height. President Pilkington writes that its constitution seems weak in England.

Matilda and many others remind me of Mr. Morrison's comment, that freeness to him, means in part, a plant that blooms ANNUALLY, so that one year after replanting, the foliage is not more conspicuous than the flower.

Mirasol, as I have seen it, is high-branched, up to 29 inches tall, placement rather close, scanty foliage. The standards were short, showing the styles. The falls were much longer, or looked so, perhaps because their trowel-formed edges gave an impression of narrowness, which measurement would not bear out.

Mary Noble, of pleasing color, substance, texture and placement, I have discarded for poor proportions of stalk in relation to other parts.

Mme. de Beaumarchais: Countess Senni writes that this dark rose red seems to have substance more solid than *Ambassadeur's*.

Mme. Serouge has seemed to me to be less desirable than either *Blackamoor* or *Winnesheik*.

Moon Magic has the same good substance and finish found in *Dune Sprite* and is of similar color.

Mozambique is a dark violet, with orange beard tipped blue. Thirty-five inches tall, size 4 x 5 inches, splendidly branched at and above center—excellent spacing. Standards conical in outline. Falls very long, circular at ends, flaring to drooping. Substance and texture seemed good.

Mrs. Hamilton Rowan was of little interest to me.

Mme. Savouillan has color resembling Balroudour and in a way, Rhadi. It is hardy but lacks substance.

Monsieur Steichen has distinctive color, but is a poor grower and difficult to transplant.

Mme. Recamier: Standards light buffy yellow faintly flushed lavender, falls light lavender, margined buff—resembling Allure's colors. Standards open, falls flaring to drooping. Smooth iridescent segments. Sweet fragrance. Foliage has reddish basal tinge. Good placement.

Nepenthe's standards are a little yellowed than Quaker Lady's, and are slightly more bluish than Alcina's; the falls are duller and nearer the pink side than Alcina's. Short branched above center. Rather close placement. Foliage has reddish basal tinge. Excellent substance.

Ningal is a lovely reversed Bicolor Blend of tan and lavender. Medium fragrance. It may need supporting with stakes, but so does Asia some seasons. Both are worth it.

No-we-ta: Standards, creamy yellow, flushed pinkish violet; falls creamy buffed, ground veined pinkish violet bleeding off the margins. Twenty-four inches tall at Mr. Wister's. Slight fragrance. Almost unbranched as I saw it. Placement crowded.

Nordic, as I saw the one year plant, had color resembling Magnifica's. It was unusually large—the stem too short for the bloom size due possibly to winter injury. I had many varieties of generally uniform height; came variable in height this year.

Oxheart shows more red than Germaine Perthuis—Standards red violet, falls strawberry red purple. Wide flaring falls, with a "fillip" at the tips. Large size. (No. 1056 x Cardinal.) Medium fragrance.

Osprey, I saw in New England in 1934, in splendid form with many blooms in a considerable planting in the open garden. The grower assured me it had no winter protection. Previously in the East, I had seen it only as wintered under glass. Paler than Blue Gown.

Palaemon Wallace, a one year plant, made 28½ inches in height, bloom size 4½ x 6½ inches wide. Very dark blue purple, with orange beard tipped blue. Standards over-arched or domed. Falls flaring. Velvety texture. Heavy substance. Short branched.

Paulette: I had to move the clump in the summer of 1933. Did

not bloom in 1934. Possibly not an "annual" bloomer in this sense.

Phoebus Cayeux is another that did not bloom the first year for me. I find it a vigorous grower of rapid increase.

Pink Opal is pinker than Rose Valley—bud color, old rose; hidden orange beard, with exposed whitish tips. I saw a considerable block of it with 25 stalks up to 39 inches tall, size 4 x 4 $\frac{1}{4}$ inches. Darker than Pink Satin. Short branched above center. Vigorous, fragrant; smooth segments. Standards near globular in outline.

Pastel Shades on a one year plant was 18 inches tall, size 4 x 4 inches, short branched above center, placement crowded; standards arching, falls drooping; standards white suffused pale purplish pink; falls white, margins sanded pale purplish pink. Dull orange beard.

Peaches is perhaps of color closer to Crown Jewel than to Clara Noyes.

Perces Prim seemed of no interest unless for color, but it was, I think, a one year plant.

Pink Lass, a one year plant, was 23 inches tall, size 4 $\frac{1}{2}$ x 4 inches, standard "open"; falls, wedge shaped, flaring; foliage scanty; crowded placement; short branched above center; growth, moderate to weak—this following a winter of 30 to 40 degrees below zero.

Pink Mist—a soft light pastel shade of pink, flushed on all segments, white beard. About 36 inches—size 3 $\frac{1}{2}$ x 4 $\frac{1}{2}$ inches. Smooth texture with silvery sheen. Good substance. Fragrance negligible.

Precious Jade as a one year plant, following the severe New England winter, showed deficiencies in color and quality.

Purple Eve is a bicolor. I would rate it in the higher seventies.

Quivera or *Quevera*, spellings used interchangeably in the BULLETIN. If the allusion is to the mythical city sought by Coronado, *Quivera* is correct.

Ragusa is more red violet than tulip Louis XIV at maturity and is less purple than tulip Bacchus. Perhaps George J. Tribolet's color is nearest it in iris. standards as a whole "open"; placement crowded; stalk short branched. Dull orange beard set in a brown base.

Ramona with me is of substance about as weak as any known to me.

Rayo de Sol—clear solid yellow standards and falls—approximately Pluie d'Or's color; golden reticulations on cream haft. Inconspicuous yellow beard; 28 inches tall, size $4\frac{1}{4}$ x $3\frac{1}{4}$ inches; well branched just above center. Foliage lax; placement good—less close than Chalice's.

Rhadi's colors suggest Mme. Savouillan. Standards much paler than Summer Cloud's. Falls blended delicate bronze brown. Twenty-five inches with one on a two year plant, size 4 x 5 inches. Moderate grower; short branched at the center; slightly creped iridescent standards. Substance and placement, good.

Rhapsody in Blue: Standards clear solid blue, very slightly bluer than standards of Ballerine. Falls much bluer than Ballerine's, with faint lavender tinge. Effect, a slightly deeper Mary Barnett, with whitish area near the beard. Size 4 x $5\frac{3}{4}$ inches, the most elongated form that I know in or near its color. Its standards stood *erect* in heat in 1934, when dozens of Crusader's and Ballerine's were *down*.

Rose of Cuba's color is slightly paler and more delicate than Fragonard's, and less pale than Dogrose's. Growth moderate; stem short branched; foliage scanty; plant small; increase slow. Placement good. Duration moderate to short blooming period.

Red Beauty's color suggested Red Flare's to me; 24 inches tall as I saw it, size $4\frac{1}{4}$ x $4\frac{1}{4}$ inches. Standards firm; falls heavy, but badly spotted by rain and sun; stalk high branched above center. Placement very crowded. Haft, narrow; slightly fragrant.

Ronda: Standards red-violet; falls red purple. Very high branched above center. Placement, crowded. Falls drooping and reflexed. Substance, firm; not tall. Size 4 x $4\frac{1}{2}$ inches.

Rose Valley (Scott): White flushed appleblossom pink—slightly heaviest on Fall margin around central white area. 36 inches tall; size $4\frac{1}{4}$ x 4 inches. Vigorous grower; ample sweet fragrance; short branched; good placement; all segments iridescent. Slightly darker and pinker than Pink Opal.

Royal Beauty's colors seemed to resemble Swazi's; 36 inches tall; size 5 x 5 inches.

Sea Dawn: Standards an apricot yellow blend; falls slightly more apricot than the standards; haft, brown-olive on yellow;

orange beard; size 4 x 4 inches. Standards rather "open" form; falls, drooping. High branched above center. Placement, crowded. Silky texture. The color bleaches a bit in the sun.

Sound Money (J. Sass): The name reminds me of a feeling of surprise that no enterprising grower has registered an NRA, FERA, or other alphabetical "experimental" name of that numerous progeny. They ought to be popular since, as Al Smith says, "Nobody shoots Santa Claus," or does something about them suggest the Russian OGPU?

Shogun is a very dark brown red, with blackish sheen in Montour's color range. Heavy substance; finely flaring falls—almost a self, with a truly negligible haft pattern.

Spokan is a brown red with silken sheen—a large haft area of brown reticulations on cream—dull beard. In the ? King Midas color line; very large segments, slight fragrance, size 5½ x 5 inches. (What happened to the final "e"?)

Starsong: Standards yellow with faint pinkish cinnamon flush; falls yellow, faintly flushed pinkish mauve—all lovely soft tints; short and high branched; close placement. A somewhat "open" form with flaring falls; smooth texture; 28 inches tall at Mr. Wister's; size 4 x 4 inches.

Sunlight seemed to me to be less desirable than Gold Stream.

Sunmist (Nic.): Omitting all details I will simply say that of all novelties seen for the first time at Mrs. Hire's in 1934, this is the one I most coveted for my own garden.

Sunol will win high esteem in the East if its Argentina-Mesopotamica blood will permit easy adaptation to our growing conditions.

St. Cecilia, for distance effects *only*, is an exceptionally free-flowering tall white in effect, with pink markings. It had every appearance of being hardy and dependable at Mrs. Kellogg's after the severe winter.

The Black Douglas (J. Sass): Standards solid dark violet-blue purple; falls blackish blue purple. Slender stalk, branched at center. Size 4 x 5 inches. Opened June 4, 1934, at Ithaca—one-year plant. Col. Nicholls told me he was all set to register this name for one of his darks, but Mr. Sass beat him to it. And, the Colonel is of *Scotch ancestry*, too!

Tokay's color should combine well with Red Robe's. Size 3½ x 4¾ inches. Moderately fragrant.

Trail's End: Standards translucent yellow flushed coppery pink; falls verging on Coralie's but duller—venation bleeding off all the margins; bud color, rosy red. Foliage has reddish basal tinge. Widely branched down to 3 inches from the ground. Fine placement. Standards creped on "dimpled." Rampant growth. Negligible fragrance. 32½ inches tall. Size 4¼ x 4¼ inches. Would be better with larger and less reflexed falls.

Valor made 42 inches for me in 1934 on a one-year plant. Standards color nearest to Swazi's—falls nearest to Sir Michael's. A longer Swazi. Stems fine and straight and well branched. No bleaching observed. Fine for the back of a border.

W. R. Dykes: I grew three plants in the open garden protected only by small wooden boxes. No bloom stalks made in 1933, but in 1934 it made 8 bloom stalks, two of which showed winter injury. The other six stalks made 32 inches in height, with up to 8 buds per stalk. I could find no fleckings on any of the petals. Mrs. Mechling of Riverton, N. J., also bloomed it without fleckings in 1933.

What Cheer is a very tall large-flowered bicolor blend of splendid rampant growth.

Zaharoon: My two 1933 plants, one year each, made one poor weak bloom stalk; in 1934, one fair stalk with 10 buds. At Mr. Wister's in 1933, 5 plants made 7 stalks up to 9 buds per stalk. It is apparently excellent in all but growing habit here.

Zuni as a one-year plant made 29 inches for me in 1934. (It was 35 inches tall at Mr. Wister's in 1933.) Widely branched 6 inches from the ground. Larger than King Midas, darker brown, better placement, more "open" form. Vigorous grower.

THE BIRTHPLACE OF BERTRAND H. FARR

■ On page 2 of the BULLETIN of the American Iris Society for February, 1935 (No. 55), occurs the following somewhat astonishing statement:

“Iowa, heart of the Middle West, became the birthplace of American iris as we now have it because it was the birthplace of Bertrand H. Farr, the man who made American gardeners iris conscious.”

In the BULLETIN of the American Iris Society for January, 1925 (No. 14), p. 3, there was published a short autobiography of Bertrand H. Farr, from which the following two paragraphs are quoted:

“I was born in Windham, Vermont, up in the mountains twenty-five miles from Brattleboro, and, when five years of age, my parents moved west, going first to Wisconsin, where for three years we spent part of the time at Lake Geneva and a part in the little seminary town of Rochester near Milwaukee. Here I saw my first peony, one of the early flowering, old-fashioned red varieties it was, but I thought it mighty fine and was very glad to accept my aunt's proposal to give me one of the blooms if I would go to the pasture and bring the cow home. This led to further negotiations by which I agreed to go after the cow for a week in consideration of her giving me a “piney toe” and so it was I came possessed of my first peony.

“When I was eight years of age, we went to Iowa, where my father established a cattle farm on the prairie, which in those days was wild enough but it was beautiful, a literal carpet of the wild flowers.”

At the age of twenty, Mr. Farr went to Boston to study music. In 1896 he bought a plot of land in Wyomissing, Pa., erected a house on it, married, and began collecting irises and peonies. About 1900, he appears to have abandoned his musical activities to devote his whole time to his growing nursery business. It is of interest to note that one of Mr. Farr's varieties of iris was named *Windham*, evidently in remembrance of his native town in Vermont.

MARSHALL A. HOWE.

EXPERIENCES WITH THE RETICULATA GROUP AT LONDON, ONTARIO

E. M. S. DALE

■ My interest in the small, early flowering, bulbous irises was aroused by seeing them in a friend's garden, and, as an experiment, I ordered from the Dutch grower from whom we were in the habit of purchasing our bulbs, one *Histrioides* and two *Reticulata Krelagi*, at 10c each, which I planted in the fall of 1911.

Histrioides bloomed the following spring, a beautiful little flower, bright blue in color, two or three inches in height, and so early that it seemed hard to believe that it really was an iris. It apparently was not very happy, and, if my recollection serves me aright, it did not live more than a year or two. I have bought it on different occasions since with the same result. Sometimes, in fact, it has failed to flower even once. In the autumn of 1931, however, one was given to me by the above-mentioned friend from the patch in his garden, which he in turn had received from a brother in Clinton, N. Y. This I duly planted together with some half dozen little bulblets that were attached thereto. The next spring a lot of single grass-like leaves came up but there were no flowers and I resolved that would be the last attempt to grow this capricious beauty. I forgot all about them and when in the spring of 1933 I saw two fat buds pushing through the soil, I thought they must be *reticulata*, some of which I knew were planted nearby. When they opened, a week ahead of the earliest *reticulata*, much to my delight they proved to be *histrioides*. I hope they have at last found congenial surroundings and that they will continue to increase and delight me year by year with their most charming flowers.

My experience with *reticulata* has been rather more encouraging. As already mentioned I first tried var. *Krelagi*, a reddish purple, which increased nicely year by year both by offsets and also by self-sown seedlings, *reticulata* setting seed freely in my garden. The situation where they were planted, however, eventually became too heavily shaded by nearby trees and also was kept rather too moist by a sprinkler system that had been installed especially for ferns, primulas and other moisture-loving plants. The result was they went back badly and I therefore dug up the remnants

and replanted them where they would get more sunshine and less water. They have done well ever since.

I next tried the type, a rich violet blue, which has also a delightful violet odor. It also does well and is the latest of the series to bloom. Meantime I had read a lot about a variety named Cantab, described as a beautiful Cambridge blue color. They were rather expensive, but in 1928 I purchased one from an English grower at a cost of 3/6, plus duty, etc. This bulb gave two flowers in the spring of 1929 and has since continued to increase until, in 1933, there were eleven flowers as well as a number of single leaves that gave promise of still greater beauty in succeeding years. The next variety to be purchased was *Cyanea*, a darker blue than Cantab, and then, on several occasions since, I have bought in Holland a mixture called "collected bulbs from Persia" which usually contains the standard colors as well as other shades and varieties which are very interesting. I was hoping I might sometime be fortunate enough to get a white one, and, sure enough, when the 1931 importation bloomed in the spring of 1932, the long-looked-for was there. The white was faintly tinged with blue but when seen with the other varieties this was not noticeable. These collected bulbs are not as satisfactory as nursery grown stock and sometimes fail to come up a second year. The white one, fortunately, was a good strong bulb, but although it came up in 1933 it did not flower. The foliage looked healthy, however, and I am looking forward to seeing it in flower again in 1934.

Members of the American Iris Society are no doubt familiar with the appearance of these irises and a detailed description will, therefore, not be necessary. With me *histrioides* is the earliest to bloom, opening the first flowers about March 27th, *reticulata* var. *Krelagi* being next in line. The type of *reticulata* is the latest to flower, the whole group lasting two or three weeks. The flowers, of course, appear before the leaves, and, in the case of *histrioides*, the segments are broader and of greater substance. The flowers of *histrioides*, as already mentioned, stand about two or three inches high while *reticulata* is some five or six. As the flowers fade they are followed by long linear leaves which attain a length of 12 to 18 inches and that arch gracefully like waving grass. About the middle of July the leaves wither and disappear.

The soil in my garden is a sandy loam and in it *reticulata*

seems to thrive while *histrioides* is very difficult. In the garden in Clinton, N. Y., however, where the soil is heavy clay, I understand *histrioides* grows like a weed while *reticulata* is the problem. These species are natives of Western Asia where the summers are hot and dry which thoroughly ripens the bulbs. With this in mind some growers lift them annually, a practice I myself follow with *Regelio-cyclus* iris and some of the tulip species, but as *reticulata* seems to get along nicely without this extra care I just leave them where they are thinning out occasionally if they appear to be getting overcrowded, keeping in mind, however, the fact that they appear to do better in the open than in situations that are too moist or shady.

Most of the varieties, including even Cantab, may now be purchased from growers in Great Britain or Holland for a few dollars a hundred. Unfortunately importation into the United States is not so easy and the prices I saw in the catalogue of one large American nurseryman made me glad I lived where plant restrictions were less severe.

GARDEN NOTE

■ Among the nice companion plants for iris, why do we so seldom see mentioned the Meadow Sage, *Salvia pratensis*? Blossoming at exactly the same time, its branching stems of dark bluish-purple make a pleasant contrast to the stiff and perpendicular foliage of the iris and its color harmonizes with most of the iris shades. There is surely no difficulty in growing the salvia. It sows itself after one planting and wanders off into the fields if allowed, living up well to its name of Meadow Sage. If planted fairly thickly through a border of iris the effect is more or less of a purple haze and as with us it commences to bloom before the late tulips and the lilacs are gone it is not difficult to conjure up most charming combinations. We have used it in a simple planting something like this—in a narrow border overhung with lilacs of different shades are growing such iris as Crusader, Seminole, Afterglow, Wild Rose, Georgia and Souvenir de Mme. Gaudichau; among them are groups of late tulips, Raphael, Dream, Sir Harry, Melicette, Euterpe and Ronald Gunn; tucked in where there is room are plants of the salvia. A little more pale yellow and pale pink in tulips or iris would improve the effect but it is surprising how much the addition of the salvia has lightened the stiffness of the planting. By no means a plant of extraordinary charm it is none the less well worth trying.

ELEANOR P. JONES, Mass.

SPECIES NOTES

Iris hauranensis Dinsm.

■ Standards—ground is Pallid Mouse Gray almost entirely obscured by the veining and sanding of Dark Perilla Purple. $2\frac{1}{2}$ x 2 inches.

Falls—ground Pale Drab-Gray even more obscured by the pattern which here is so nearly confluent that this color seems to be Warm Blackish Brown dotted with the ground color. The large central blotch on the falls appears almost black but with a warm undertone of purplish brown. Under surface greenish. 2 x $1\frac{1}{4}$ inches.

The style branches have the same colors as the falls, but the spotting and freckling of the over color is so fine that the ground color shows through—Inner hairs white, purple tipped. Pollen white.

Very faint scent reminiscent of *Rosa multiflora*.

Sheaths—tending toward being yellowish, faintly red tinged on margins.

The standards have the curious effect of a glossy surface, which is less apparent in the falls on account of the central blotch. A somewhat oil-cloth appearance in reflected light—not noticeable in transmitted light.

Iris imbricata Lindl.

Under the names of *Iris sulphurea* and *Iris Talischii* this plant has been received from the Triflis Botanic Garden and although there is some difference in the coloring of the several seedlings in each lot, there is hardly enough to warrant even garden separation, although the seedlings in the lot labelled *I. sulphurea* are a very decent pale yellow color and there is little of the reddish markings on the inside of the hafts. Dykes (The Genus *Iris*, p. 180) mentions the fact that under some conditions the falls are often marred by “dull, diffuse, irregular purple veins and blotches.” Our plants have shown no blotches but some faint veins particularly in the area about the beard. There was a marked difference in the carriage of the falls, most of which would not please the fancier of bearded iris.

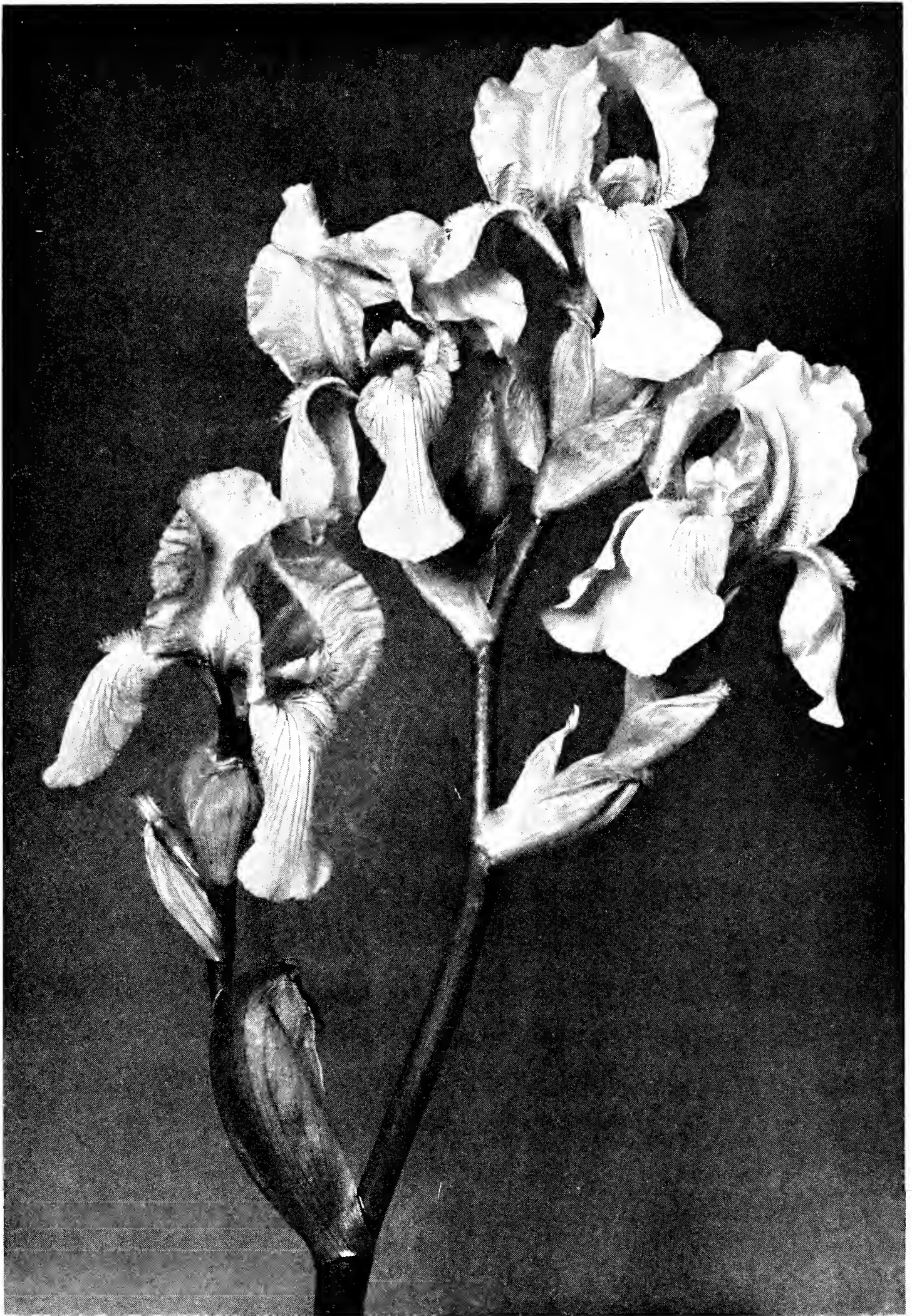
Dykes (ibid.) notes that this iris is difficult to distinguish from the yellow-flowered form of *Iris Albertii*, but of the latter plant we have no comparative material.



Lilian A. Guernsey

Iris hauranensis

[95]



Lilian A. Guernsey

Iris imbricata
Received as Iris sulphurea



Lilian A. Guernsey

Iris imbricata
Received as Iris talischii

The illustration of this species in Botanical Register XXXI, pl. 35 (1845) is well drawn, but has more green coloring than any specimen seen here. The text is less valuable.

The figure in Curtis Botanical Magazine Tab. No. 1 (1900) is less characteristic and the text valuable chiefly for the note concerning the introduction by the "late Lieutenant-Colonel Henry Lake Wells in the year 1895, in the province of Mazanderan, on the south of the Caspian Sea. Colonel Wells describes this province as a "lovely country, full of beautiful flowers, and amongst others I found a yellow Iris, growing beside the streams at an elevation of about seven thousand feet above sea-level."

In a time when all the breeders of tall bearded iris are striving for tall yellows of the best types, it is hardly to be expected that anyone would be keen about this plant that fails so far in their floristic standards.

Iris setosa Pallas

This species and one other, *Iris tripetala*, Dykes made into a separate section of the Beardless irises, and gives a color plate of this species which portrays a much more handsome form than any I have chanced to see, with wider falls and a richer redder purple color. Various efforts were made to get true *Iris setosa*, all first resulting in various other beardless iris, but while latter correspondence brought in the true species as did also some collections made in the Hokkaido, all of these forms have proved to be much alike and essentially blue purple rather than red purple.

From the garden point of view, a fine clump of this species, seen from a little distance would suggest *Iris virginica*, although closer inspection shows the diminutive standards and various other differences. Here it is usually much more floriferous. A little later in the season when the inflated or rather thin-walled seed pods have developed and later still when the loosened seeds begin to shake about in the pods, no one could mistake it.

The tall growing type seems to be less often in cultivation than a plant once distributed as *Iris setosa Hookeri* or *Iris Hookeri* and later as *Iris tricuspis*. This is a dwarf form that is rather showy with much lighter more lavender blue colored flowers that make a rather nice plant for the front of the border. It has apparently nothing to do with *Iris tripetala*, which is a very distinct and different sort of plant.



Lilian A. Guernsey

Iris setosa

[99]

Iris ensata Thunb. (See page 2)

It is very difficult to know just what to say about this Asiatic iris that will suggest the proper middle ground of attention. Certainly it does not merit a description that would commend it as one of the beauties of the genus and on the other hand, it must not be cast out with too faint praise.

As a beardless iris of great hardiness to cold, heat and drought, it has long been known and variously introduced. It is easily raised from seed and the seedlings themselves offer no particular difficulty in transplanting in the garden. It has been my experience, however, that it does not always behave as well when older plants are moved and even less well when they are shipped from nurseries at any distance.

The plant makes a constantly increasing, tussock-like mass of very narrow, grey-green, tough foliage, that persists well into the fall, but is not evergreen in this climate. The leaf fans start into growth promptly in the spring, but show a great variation in their rate of growth. The flower stalks push up through the leaves and appear hidden or free, depending more or less on the rate of growth of the leaves. Obviously those that grow slowly allow the greatest display of the flowers which though slight are beautifully made and quite charming when cut. In the many seedlings raised here from various sources the prevailing colors have been from a creamy white ground, showing chiefly on the falls, to delicate lavenders on bluish side rather than lilac side of that color. In no case have we been so lucky as to get seedlings showing on the falls the variation "to dark blue, or red purple" mentioned by Dykes (*The Genus Iris*, p. 87) but one quails before the task of raising more seedlings of this sort, which take up valuable space for some years before flowering, in the hope that such a color may be found.

Dykes (*ibid.*) mentions that this is used as a fodder plant in Kashmir and in an old Chinese encyclopedia there is an interesting article describing the plant mostly from the point of view of the herbalist who once found virtues in most plants, but mentioning that it was used to make brushes, by cleaning the masses of roots. It is hoped that in time at least an abstract of this article may be given in the BULLETIN.

Washington, D. C.

THE AMERICAN HORTICULTURAL SOCIETY

Made an important departure in its program this season by
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THE AMERICAN DAFFODIL YEAR BOOK

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THE AMERICAN IRIS SOCIETY

ALTHOUGH all readers of the BULLETIN are supposed to know that the annual dues of the Society are three dollars payable by the calendar year, it has been called to our attention that there is a chance that someone who is not a member may read your copy and wonder how he too may become a subscriber. If you happen to be such a reader, let us assure you that the Society welcomes to membership all persons who are interested in iris who feel that special knowledge of iris would be welcome in their gardening.

Make your check or money order payable to the American Iris Society and send to Mr. B. Y. Morrison, Secretary, 821 Washington Loan & Trust Bldg., Washington, D. C. Please follow this instruction. It will help us all in the record keeping.



BULLETIN
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JULY, 1935

NO. 58

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THE AMERICAN IRIS SOCIETY

FOREWORD

■ The active gardener comes to the end of any flowering season with rather mixed emotions, pleasurable as they relate to the season just passed, and as to the season to come, and perhaps a bit dubious as they relate to the labors before him that are the inevitable prelude to the season in anticipation.

This time of year might be looked upon almost as a New Year season for the iris grower and, as such, a period for resolutions. Perhaps as a member of the American Iris Society you will make a few that will relate to the work you may do that will contribute toward the BULLETIN next year? Can you stretch your budget to buy some bulbous iris, so that you can report their behavior, not only for 1936, but for the years that follow? Will you add to your collection of Siberian iris for similar report? Will you choose twelve roots of some one common variety, say Pallida Dalmatica, divide them into two lots, and plant one in strongly limed soil and one in acid soil for future report? Will you do the same thing, planting one lot deeply, and the other "like a duck sitting on the water?" Will you hunt for Iris arenaria and report on its behavior in your garden? Will you report on such fall-blooming iris as you may have or may buy this season? Your report may seem unimportant to you, but if it becomes one of two hundred or more, it is valuable.

B. Y. MORRISON, *Secretary.*

OVER-THE-GARDEN-WALL

WM. J. MEKKEE

■ The Annual Meeting of the American Iris Society will be held at West Hartford, Connecticut, during the iris season in 1936. Plans are under way to make the 1936 Annual Meeting and the Over-the-Garden-Wall Show most interesting.

Over-the-Garden-Wall garden of the Kelloggs (Mrs. Kellogg and her son Willard) is located in West Hartford. The garden covers several acres and Tall Bearded Iris occupy the major portion of the garden. There are also fine collections of Early Dwarfs, Intermediates, Siberian and Japanese Irises, also collections of Peonies, Poppies, Hemerocalis and Rock Plants. Members who have not visited the Kellogg garden and who are planning to do so in 1936, may be interested in the following brief description of this garden, written by Miss Eleanor Jones, a member of the American Iris Society from Haverhill, Massachusetts.

“It is but a step through the hospitably low garden wall (an old-fashioned New England stone wall), into the delightful garden itself. And the glimpses through openings in the hedges to other gardens beyond give credence to the sentence on the sign,—‘There’s more than meets the eye.’ Around about the whole place is the dignity that only fine old trees can give.

The first garden, if one may separate them into such, is more or less informal. We who only visit it in Iris time, wish we could have seen in bloom the fine lilac hedge that forms the wall between it and the next more formal garden. From the street and over the low wall the center of the stage is held by a pool of good size and natural lines, displaying admirably the lovely Siberian Iris, the yellow *pseudacorus* and a paler yellow of the same, not to mention many of the other interesting species. The Japanese Iris not yet in bloom can easily be visualized here in its perfect setting.

Backed by the low wall and next to the street as one enters between yews is a rather narrow bed planted with choice evergreens and rock plants, a place to be studied at one’s leisure. With the lilac hedge as a background are large beds of iris planted

with hemerocallis, Oriental poppies, bleeding heart and columbine, all fine companion plants for the iris.

Passing into the next more formal garden through the lilac hedge, the opening is flanked by crabs and arborvitæ. Here the eye is caught immediately and held by an unusual Rugosa Rose, Agnes. Agnes outlines the entrance into the Iris gardens beyond and makes a flaming portal indeed. A valuable rose to use with tall bearded and Siberian iris, particularly the blues and yellows, and stepping back of the hedge to ground a bit lower, a charming color scheme was glimpsed through the blues of the Siberians to the pinks of some tall bearded iris beyond, with the yellow of the lovely rose above it on the right and a big splash of yellow Iris to one side. All these are fine suggestions for plantings in our borders. Mrs. Kellogg uses *Hugonis* to bloom with her intermediate iris and some of the other species which also must have gone by.

This second garden has as its center an amusing little round bed of succulents and the four dirt paths that divide the garden round out to make room for the little circle. Masses of fine siberian iris in all shades of blue, from a cloudy gray blue through the deeper shades to the purple of Emperor rise a little above the bearded Iris and give a sense of lightness to the whole planting. The buds of the oriental poppies, as decorative as their great blooms, make a lovely contrast to the varied colors of the iris. Rounding the iris border as one passes under the yellow rose is a nice edging of *Hemerocallis Middendorffii*. These fine day-lilies make one want to stop and sing their praises. Gone are the days when their blooming was past in the early summer. Now with selection we may have their charming flowers from June to September. In this second garden with the predominating drifts of siberian iris are clumps of the Tall Bearded which would certainly astound a visitor who has not followed the trend of modern iris.

And as we leave this formal iris garden and step into the third and largest portion of the garden where the real business of the day begins, we find in long narrow beds on either side of a wide path, one of the most complete collections of the newer iris waiting to be compared with those awarded the palms in previous years. Before turning to these fine specimens however, we note beyond and below them beds of rock plants, both common and

rare varieties, and stretching away still farther to the green of woods in the distance are masses of Iris as varied in hue and as full of beauty as the true meaning of the word 'iris' implies."

The above description of the Kellogg garden was made during the 1935 iris blooming season. In passing through the well arranged beds of the newer iris, I was impressed with the growth and vigor of the California originations which almost without exception, appear to do splendidly in the light sandy loam soil of the Kellogg garden. Here are Los Angeles, San Francisco, Sierra Blue, California Gold, Sunol, Alta California, China Lantern, Pale Moonlight, Easter Morn, Blue and Gold, Pacific and others, all producing fine bloom specimens. Lady Paramount, one of the California originations made a grand showing in our cold New England climate. It is a very outstanding iris, large pure yellow, good form and substance, well placed on 45-inch well branched stalks.

Shining Waters, another California origination, was very attractive. A large light blue that is exceptionally clear and strong in color. From a color standpoint this iris should certainly make a bid for the highest honors in the light blue class.

Copper Piece, a new Kellogg seedling, was one of the interesting new things in the garden, an Iris in the copper shades that has a bright copper tone with a golden center. The name "Copper Penny" was considered for this Iris and would have been a very appropriate one.

Near the entrance of the garden there is a mass planting of the iris Red Radiance. This fine red has splendid carrying qualities and the large mass planting was one of the high lights of the garden. Another very attractive planting was the siberian iris Gatineau, a blue siberian iris that is very outstanding, 50-inch stalks with flowers that measure 4 inches across, the largest and most attractive siberian in a fine collection of that species. Still another mass planting that was impressive, was the Iris Ashtoreth, a fine clear, lustrous yellow good form and substance, a profuse bloomer and in a group planting has exceptional carrying qualities and great garden value. The performance of Missouri attracted a great deal of attention. This is one of Mr. Grinter's fine blues which has size, extra fine substance, good color and a fine stalk, which when all combined in an iris make it a most outstanding one in the medium blue class.

There were many other new things which my notes reported exceptionally fine. Blithesome, Connell's tall white with a golden tone. Golden Helmet, a Sass introduction of the King Tut type, but larger and richer quality. Nordic, Kirkland's large striking variegata with golden tan standards and violet red falls. Golden Light, a Sass introduction of a gold cinnamon combination. Eros, Mr. Mead's fine new pink blend. Blue Triumph, one of Mr. Grinter's fine blues. Eleanor Blue, a Salbach introduction which is a new tone of blues. Rubio, a large Mitchell, rose maroon combination. Eclat, a Gage orange yellow which is very effective. Yosemite Falls, an Essig introduction with remarkably long falls in the hyacinth-violet tones. Shirvan, a Loomis rich red brown with velvety falls. Robert, an Ayres' amber blue blend. In the pink tones for massing effect, Miss Sturtevant's Airy Dream was most effective.

FAILURE AND ITS LESSONS

R. E. S. SPENDER

“*In man there's failure only since he left the lower and unconscious form of life.*”—BROWNING.

■ There are few persons, I imagine, more acutely conscious of that profound, if evident, piece of truth than the iris breeder.

What a list of failures he has to reckon up, when having taken that first fatal peep through the ivory gate of his dreams he sets out to create out of what is that which he desired to be! How scant the progress—how tantalizing the setback! How innumerable the blind alleys that end in nothing! It is as though when man sets out to improve on the likeness of life nature lent the whole weight of her imponderable *vis inertiae* against the door of his dreams, and bade him learn that this was her business and not his. “*Natura,*” says Bacon in that memorable conclusion, “*non facit saltum.*”

That, of course, is the great discovery—or one of them—which Darwin made some two and a half centuries later. And, like all great discoveries it has, of course, been disputed, not without some basis of fact. The experiments made by De Vries, though carried out in a remarkably narrow field, went to show that nature could leap when she tried, and that perhaps she tried fairly often, when no one was looking. Her leaping, in short, was a thing of which, it would seem, she was perhaps a little ashamed as inconsistent with her natural dignity. It is not, of course, for us to say whether she was right or wrong. But, I think we may say that most of her leaps, if not in the wrong direction, appear to us at least as a little ungainly; and one can well understand when she has usually been at such pains to cover up the traces of her landing. “*Natura,*” one might conclude, “*non facit bellum saltum.*” And, if and when she does, how rarely she repeats it!

It has been freely asserted that Dominion was such a leap—I do not know on what grounds. Some day, no doubt, cytologists will be able to say just why and how Dominion happened. But, the average breeder seldom strikes such a vein of unexpected fortune. He may breed and breed from far better plants than Dominion, and still find nature leaning up against the ivory gate of his dreams. If his seedlings come true to form, they will be want-

ing in color; if they present him with color, they will be lacking in height; if they have height, they will be deficient in substance, or poise, or something essential. Oh! the little more, and how much it is! But, it is not the little more of which I propose to speak, but the little less. And, of all the prevaricating things in life, there are few to beat that of putting two good parents together, and producing offspring worthy of neither.

Bismarck was wont to say that a fool might learn in time from his own mistakes, but only a wise man would learn from those of others. And, since raisers, whether from modesty or pride, have written little on the subject of their failures, it may not be amiss, seeing how many sensible members there must be in our Society, to discuss matters from that point of view. Of my early attempts with Alcazar, Lady Foster and Ambassadeur—before, that is Dominion became a practicable proposition—I propose to say nothing, except that Ambassadeur x Gaudichau gave me a very robust, tall plant with small flowers, which, crossed again with Duke of Bedford, gave me a fine, large velvety blue which only wanted another foot to be a good thing. I always wonder where and why those essential twelve inches got lost. Those early days and their results being duly related to the scrap-heap, I set out on a different errand: a good pink or a presentable red. And, like everyone else with the same objective, I began with Aphrodite. From Aphrodite I must have raised nearly 100 seedlings, using Dream, Cardinal and Menetriers as pollen parents. Not one gave me the pink I wanted, though one by the first cross, being decidedly better than Dog Rose, has been retained. Not to be daunted, I imagined that Morning Splendor might make something more of the tiresome goddess—there seemed, at any rate, to be something classical about their marriage rite. But I must, I suppose, have upset the authorities in Olympus. Not only did no pinks result from what seemed a reasonably promising attempt, but not a seedling even with the slightest tinge of it. The whole lot were lavender or “bluer” and no better, but in the main no worse than all the rest before them. Still undaunted, I hoped better things of Imperator in conjunction with my Aphrodite child, but both of the seedlings from that cross were inferior to their mother, and no further good seeming to come from mixing pink and red, it seemed high time to try some other combination. By this time Romance had become a household word and I had at the same time acquired that object

of rapturous introduction, *Pluie d'Or*, which, whatever else it may or may not be, is decidedly some improvement on *Amber*. So, to *Pluie d'Or* I turned in the entirely logical hope that whatever *Amber* could accomplish, *Pluie d'Or* should at least be able to go one better. Two of my *Aphrodite* seedlings were once again mated, and to make sure I made the cross both ways. Never was time and patience worse employed. *Pluie d'Or* as pollen parent gave me nothing but yellows—the one color that I did not seek; as seed parent it gave me nothing but pinks, and save for one that is temporarily retained, very bad pinks at that. *Imperator* x *Pluie d'Or* likewise gave me just what I deserved—not one was worth even a recommendation.

Finally there came the flickering hope of *Fulgore*, and once again my large pink seedling was mated, in the hope of something rosier and more rare. The results were a little astonishing in the way of color, three of the seedlings being a delicious old rose with faint creamy-yellow suffusion that is certainly highly attractive. But, the size of the bloom has been reduced by nearly half, and I am wondering how I can ever hope to get it back again. That, I fear, is the fatal drawback about this lively little Frenchman. I have used *Fulgore* time and time again, with *Melchior*, *Talisman* and several more; and whatever interesting things one may get in color, it invariably results in a race of dwarfs, or at any rate, of intermediates. And no judge in this country is going to give intermediates a second glance if they are put up for exhibition alongside the popular giants. The glamor of size when it comes to the new seedling class, none of us is immune, I fear!

But, of all the French introductions *Pluie d'Or* was perhaps the most exasperating performer. Whatever I combined it with, it seemed to reproduce itself, or still worse its progenitor, *Shekinah*.

G. S. Baker, which is also derived from *Shekinah*, has the same Judaic pride of race—both germinate freely as one might expect, but one might as well hope to improve or modify either as the leopard to change his spots, or *W. R. Dykes* his.

It is true that with *Talisman*, it has given me some deep yellows, and with *King Karl* some whites, but the *Shekinah* taint is too strong to make much progress there. Probably *Col. Nicholls* is right in allotting *Pluie d'Or* a very small chromosome content ($2n = 24$), which would account for the comparative lack of size in its descendants. The right sort of pinks as Professor

Mitchell suggests may still come through breeding reds on yellows, but I do not think they will ever come out of G. S. Baker or Pluie d'Or. Helios, which is a seedling from Claude Monet, is not likely to be much more useful in that respect, but in view of the good things which have come from it, it might be worth trying out. But a breeder must be prepared to get a very large percentage of yellows in breeding from a yellow flower, and there is very little room for further novelties in that field after what has been accomplished by American and English raisers in the last few years.

The so-called "red" class has always seemed to me to have much greater openings, for it cannot be said that so far any of the novelties in this section have really got beyond the "red-purple" stage, or rather those which have tend far more to brown than crimson. I have followed a good many false trails in that direction already. A long ago cross (Ambassadeur x Edouard Michel) was used to pollinate Morning Splendor, and a great many variations were tried on the same seed parent, with very similar results. A strain of immense blooms was obtained, but on the whole I have seldom had a gloomier collection of seedlings—none was red, and few were even as red as their American mother. Morning Splendor x Deputé Nombrot gave me a slightly rosier edition of the pollen parent, but mostly a pretty poor lot of dullards, and I came to the conclusion that Morning Splendor was pretty hopeless from a breeder's point of view, and scrapped it without profound regrets. Bruno x Imperator was an even worse investment, and both promptly followed suit. My seedlings all had Bruno's incorrigible failing of looking quite good as they opened, and then fading off very much like a Kaffir who finds the sea too much for his complexion.

I have always felt that Cardinal, despite its small stature, was a better variety than Bruno, and I have little doubt that it is a better parent. I have little doubt, moreover, that the crimsons of the future will contain at least a modicum of Cardinal blood. Most of the so-called reds have derived from Cardinal, and I have raised quite a number myself, which with a little more height would be quite up to the general standard. But, unquestionably, its seedlings are apt to come dwarf unless crossed with a taller variety, and there is a similar tendency for them to become more dusky unless a brighter co-parent is used. Melchior apparently

has not the former tendency, and although it has the latter, it should, I think, be a useful parent if intelligently used. From it I have already obtained a number of presentable seedlings tending in the right direction, and I do not know of any variety that maintains a higher level of uniformity in its offspring. That, I think, is usually true of more descendants of that fine old matron *Souvenir de Mme. Gaudichau*. But it is not always the case, nor even nearly always. *Minister Fernand David*, which has *Gaudichau* blood in it on both sides, has so far proved with me one of the most unsuccessful parents I have ever tried. Practically all the results have been great, coarse flowers, lacking in distinction and dull in color, and not one has been retained despite their manifest vigor. *Evolution* and *Anne Marie Cayeux* are better parents in every way, but both seem strangely indisposed to pass on their subtle color schemes to their progeny. The latter, I think, a happy accident, which is unlikely to occur again, but it is a good seeder, giving large blooms, and, happily crossed, might give some good reds and purples.

Evolution is not as has been often stated related in anyway to the former, but has considerable *Variegata* blood on both sides, and is curious in view of this how little it reappears in its descendants. I have used it in a great range of crosses, and have obtained lavenders, crimsons, bronzy-blues and other shades, but nothing in the least like its parents. Messrs. *Cayeux* have used it freely, as is known, in conjunction with white and other crosses, *President Pilkington* being one of the best results, and I should agree with them that it is probably a valuable breeder, but needs to be combined with varieties that possess both branching and height.

Deputé Nomblot, so far as I have discovered, has never been known to set seed in this country, but I have obtained one or two very similar seedlings from its pollen, which have proved fertile seed-parents, and it will be interesting to see whether it will be possible to obtain the good points of the grand-sire without the undesirable features of the great-grand-sire, *Bruno*. So far only one cross from these, a haphazard one with *Sir Michael* (which is not a parent I should use ordinarily) has flowered, and the results of that were not very thrilling, nor were they expected to be.

Mr. Pilkington has got some remarkable yellows from the

Deputé—remarkable for size; that is, if not for substance, and from the seedlings may well arise a new line of giants in shades of color not yet obtained elsewhere. But, personally, I am rather opposed to any further increase in the size of our blooms. Neither greater height nor greater size is really desirable—at least in English gardens—in my opinion. What we need is substance and richer coloring with possibly some reasonably divergence in form, so long as there is balance and proportion in the flower. In the clamor for size, breeders are less apt to overlook the importance of the last.



BULBOUS IRISES

BY EUCLID SNOW

■ Hardy but short-lived and thoroughly well worth growing are the Dutch and Spanish irises.

Just what element is lacking and needed to make them permanent, I do not know, nor have I been able to find any information or opinion on this score. Perhaps some of our horticultural and scientific experts one of these days will tell us what is needed and we can supply it. It may be something missing in the food requirements of these bulbs that is not present in our soil. Perhaps it is some disease that causes them to fade out, but concerning their hardiness for at least one season and usually two or three there can be no question.

As they are cheap, they are thoroughly well worth growing even when we know that they must be replaced and that the first one or two seasons are all that we can depend upon without a new supply of bulbs. It has seemed to me that the fact that the Dutch irises are hardy for garden purposes is not as well known as it should be.

An idea which I have encountered seems to prevail that they are tender due to the parentage to which they owe their height and size which I have somewhere read came from *Iris tingitana* and its kin which come from warmer climes than the other parent, the Spanish irises. The color range is the same as in the Spanish, and, it has seemed to me a little more delicate and refined with more unusual combinations and gradations of color.

I have grown these irises here in my garden in Hinsdale, Ill., a suburb of Chicago, for several seasons and have been successful with them, treating them just as I do tulips, planting four inches deep from the top of the bulb and five inches apart, putting a little sand under the bulb and digging in bonemeal beneath the bulb, the only fertilizer I have used. I give them a deep mulch of straw as soon as the ground starts freezing.

These irises are by far the most durable in substance of any of the genus that I have encountered and are exceptionally fine material for cutting. In fact, the Dutch irises are now a florist staple for cut flowers and, I have an idea, the fact that they are seen principally in florists' windows has given rise to the idea that they are tender. It ought to be taken into consideration that snapdragons, now a florist staple, are one of the hardiest of garden annuals.

Closest to them in respect to durability and cutting value and similarity in form are the spuria irises which are not nearly enough grown.

In blooming season the Dutch, Spanish, and English irises follow the tall bearded and, with the spurias, carry the iris season into the Japanese division which comes the last of June and July in this section.

It was with much interest that I saw a faded photograph of a garden of some thirty years ago where a large group of Spanish iris formed a foreground to foxgloves and Canterbury bells. The owner of this garden said he treated the Spanish irises as biennials, and it was a biennial planting.

In those days before federal quarantine I was told that Spanish irises retailed at a dollar a hundred, mixed colors, and for very little more in named varieties. They are cheap now but far from that old time price.

After the great flood of bloom of the tall bearded irises, the dainty beauty of these bulbous irises is a welcome surcease. Owing to their thin and scanty foliage they need the support and background of the foliage of other plants for garden effect.

I grow only one variety of the Spanish irises, *Cajanus*, small but of a beautiful, rich deep yellow.

Both the Spanish and Dutch make a fall growth of foliage. It will not appear with late planting the first year but the following season it will start in September and should give no alarm

as it is persistent all winter and a slight mulch will preserve it. In the case of the Spanish, friends who have known them for years tell me they never even gave a mulch. I believe it safer with the Dutch.

We grow the following Dutch varieties and enjoy and admire them and shall try other varieties as we find them available:

Poggenbeck—Clear dark blue.

E. B. Garnier—Another good blue.

Zulderveld—Bluish violet.

Leonardo da Vinci—White and yellow.

D. Haring—Very dainty two-toned white gray and clear white.

Theo Wicke—Light blue and white.

Hart Nibrig—Brilliant deep blue with large falls.

Therese Schwartz—Delicate blue white standards and creamy white falls, greatly enhanced by the orange blotch which appears on all irises of this type. This blotch is longer, as a rule, than in the Spanish type.

English irises, as is well known, have no English ancestry but came out of Spain and were brought to garden knowledge by English importers. I have had no success with them although friends who grew them years ago say they are no more difficult than the Spanish and that they grew them side by side, the English blooming a little later than the Spanish.

I am told that they need entirely different soil conditions from the Spanish and Dutch, these liking light, well drained warm soils while the English like a much heavier and moisture retentive medium. I learn that they have been grown successfully in the heavy soil of some of our Chicago gardens with fine results in years past. There were in those older days as many named varieties as there were of Spanish iris, but these seem to have gone from the markets of today.

Our soil is peaty loam and there seems no good reason why they should not thrive there, according to reports, but they don't.

We are keeping on trying with them, using different depths of soil, different types of soil; both shady and open plantings and hope to find something to suit them, but they just kiss us goodbye and pass out.

I should unhesitatingly recommend these bulbous irises to all admirers of this great flower and I believe that once you try them in your garden you will regard them as indispensable as I do.

NOTES ON THE ORIGIN OF THE *SARAH P. DUKE* GARDENS AT DUKE UNIVERSITY

F. M. HANES

■ James B. Duke and Louis the Fourteenth had at least one trait in common: they both loved water; not drinking water, but running water, in the form of giant fountains, pools and lakes. Louis built the magnificent fountains and lakes which are now the glory of Versailles and James B. Duke adorned in a similar fashion his several estates. Great men are very prone to such foibles and eccentricities and, though often parsimonious in other things, they spend lavishly upon their hobbies. History is full of such examples. Frederic the Great was so frugal that his family and court could scarcely get enough to eat and yet he could not resist employing in his guards any man who was more than six feet tall. The unloved King of the Belgians, Leopold the Second, was so grasping and miserly that he allowed his wife to live apart from him in poverty, refused his three daughters money when they direly needed it, but yet squandered his whole fortune to become the ruler of an African jungle—the so-called Congo Free State. The adventure of Henry M. Stanley's journey down the Congo to the sea planted a seed of romance in his tough old soul that grew and dominated his whole life. Even the great-minded Samuel Johnson hoarded orange peelings in his pockets, and could not bear to see one peeling thrown away. Medical men call such things "obsessions."

So it came to pass that when James B. Duke planned the campus of Duke University he carefully selected sites for two lakes which were to be fed by huge fountains. Now Durham is not situated near any large stream, but some five miles away on the Chapel Hill road is a stream called "Hope Creek." Mr. Duke purchased this stream for miles and planned to dam its scanty waters into a reservoir from which water could be pumped the long distance to Duke University to feed the fountains. How like Louis the Fourteenth this was! These plans were made in the fabulous days when everyone believed that the old economic order had changed and that money did grow on trees. Perhaps some of my readers remember those lovely times and maybe they have trouble in believing that in so few years our country has passed from dreams of unending prosperity to the sad realities of today.

At any rate, when the time came to carry out Mr. Duke's aqueous dreams, dollars had become dollars again, and since his plans called for the expenditure of some three hundred thousand of these scarce dollars, the authorities very wisely decided that they could not spend money literally like water. The fountains and lakes were abandoned.

However, the site for the first of his planned lakes had already been denuded of the lovely pines which formerly covered the site, leaving a very unsightly weedy valley as a public eyesore. This seemed to me too bad, for any iris grower could see at a glance that the sloping sides of the valley provided an ideal location for large beds of tall bearded iris, and that the wet meadow through which ran a small stream was equally ideal for the moisture-loving Japanese iris, and for the many swamp iris which are native to parts of our country. One very declivitous part of the sites invited the construction of a rock garden.

This scheme was broached to the authorities and, after some propaganda work had been done, we were told that the site might be used for a garden if we could find the money. In other words, the University would provide the sea if we would provide the ships. This was not much, but it was something; and besides, I thought I knew where the money could be gotten. It is certainly no reflection on anyone to say that I was entirely alone in this opinion. Now let me confess that I am no great rooter for what is called the human race. Take it all in all, I wouldn't throw up my hat if I had created it. We are, I am afraid, a selfish, self-seeking lot, but down deep in the hearts of all but the most abnormal of humans is a more or less stunted and atrophied desire to do something for their fellow human beings. In some this desire is overgrown, like a tumor, and we call them philanthropists; in others it is totally lacking, producing misanthropists and misers. But between these extremes the desire to give is capable of stimulation, provided the object of help appeals to the prospective helper. The upshot of these rather tiresome observations is that at least part of the necessary money was given.

The next thing, and almost as important, was to get the proper man to build the proposed gardens. Fortunately, I knew him well and had had him go over the site with me long before. His name is John C. Wister. He was most enthusiastic over the latent possibilities of the place and agreed with me that, with sufficient effort, gardens could be built that would rival the finest in the South in point of interest and beauty.

Work was begun in June of 1934. Immediately the difficulties of the undertaking became painfully manifest. Much of the soil in and around Durham is perhaps the poorest and generally most dreadful of any place known to man—the Sahara Desert and Death Valley not excepted. Scrape away an inch of topsoil and one is horrified to find a repulsive, bluish yellow clay that is almost impervious to water and which bakes in the summer sun to exactly the consistency of the bricks used to line furnaces.

Most plants give it one look then shudder, curl up and die.

The soil of the garden site had to be rebuilt. It was ploughed and harrowed and into it was worked leaf-mold, manure, cinders and various fertilizers. Some seven thousand dollars was spent on this preparation of the soil alone, and then only slightly more than one half of the available site was prepared for planting. A very wet summer made continuous work difficult and delayed the fall planting.

Mr. Wister has laid out the site into more than 100 beds without altering the natural undulations of the land. The effect is one of naturalness and simplicity. Some idea of the magnitude of the task may be had from the estimate that eventually more than 200,000 plants, shrubs and trees will be growing in the garden.

About three and one-half acres of the garden site have not yet been planted. It is planned to use this space for flowering shrubs and trees. Cherries in great variety, flowering crabs and peaches, as well as many flowering shrubs will be used. This section of the garden should begin blooming in early March and continue until the advent of the iris in April. The Japs will be at their best in early June and the day lilies in great beds will prolong the flowering period into the summer.

Of course, the first blooming season gave only a meagre idea of what is ultimately hoped for. There will necessarily be changes and experiments, since so little is known as to what plants will thrive in the soil and climate of the garden. Every plant and tree will be plainly marked, thus greatly increasing its educational value. The garden is under the direct care of Mr. Norfleet Webb of the Department of Botany of Duke University and it will be used as a large outdoor laboratory by the Department of Botany, under the direction of Dr. Hugo Leander Blomquist, Professor of Botany. It is confidently hoped that as the years go by it will not only educate the three thousand students of Duke University, and the thousands of visitors, to a keener appreciation of beauty, but will contribute much solid scientific knowledge to the botanical world.

THE DUKE UNIVERSITY IRIS GARDEN

JOHN C. WISTER

■ In the foregoing article Dr. Hanes has given some notes on the origin of the Iris Garden now in process of construction at Duke University, and I have been asked to supplement these notes with some more detailed information about the garden itself. I wish I could make my readers realize what a thrilling experience it is to work on an iris garden of this kind and also how many different problems such a garden presents.

As Dr. Hanes has stated we have an ideal site in the shape of a natural bowl several hundred feet wide and altogether nearly 1,800 feet long. Of this length about 1,000 feet are in the clearing and the balance are in dense woods not suited for garden purposes but admirably adapted for the planting of Dogwoods, Red Bud Holly, Halesia and other flowering trees, as well as ferns and wild flowers.

In the summer of 1934 a section of the open ground 600 feet long was prepared. The natural contours of the slope down towards the little stream were preserved as much as possible and over 100 flower beds were arranged for, these being separated in some cases by wide roads and in other cases by narrow paths. The shapes of these beds were very irregular to fit in with the constantly changing slopes, and formed beds holding from about 50 irises to beds holding over 1,000. The general average is probably several hundred plants to a bed, the plants being set about 18 inches apart to allow for future growth.

I had always supposed iris would grow in any soil but when I first saw the soil at Duke I despaired of that fact. Of all the places in which I have gardened it seemed the most hopeless. On a dry day the ground was so hard that you could not drive a hole in it without a pickaxe, and after one short rain you would sink in well above the ankles at each step, and in trying to walk would leave your shoes behind sticking in the mud.

To make the soil more porous we used cinders in large amount, something over 600 truck loads, and similar large amounts of leaf-mold and manure. When this was plowed and replowed into the soil and later dug and redug, we began to get a friable soil which we trust will make the plants grow. The experience of the first year seems to prove that it will make them grow.

In general the area divides itself naturally into low wet bottom

land suitable for beardless iris and the well drained slopes suitable for bearded types. In this bottom land we have planted about 10,000 Japanese iris, mostly the gift of Dr. Hanes from his Winston garden, and about 9,000 other beardless types, that is versicolor, pseudacorus, various sibiricas, such as Emperor, Perrys Blue, Snow Queen and some few spurias. We are trying also just a few of the Louisiana types to make sure they will do well before we get many more.

On the slopes there have been planted about 26,000 bearded iris in approximately 300 varieties. The newer kinds are present only in quantities of one or two plants, but the good old standbys have been used for color effect in masses and are planted by the hundred or thousand. The general color scheme as seen from the main road above the garden will run on the left from blue and purple into yellow, a little pink, and then a little more blue, purple and white in the distance. On the right the colors will begin with pinks going into the creamy yellows, then into some bronzes and from there to white and purple.

For these color masses we have used in the main Princess Beatrice, Queen Caterina, Souv. de Mme. Gaudichan, Flavescens, Shekinah, Primrose, Gold Imperial, Athene, True Charm, Ambassadeur, Dream and Susan Bliss. With these larger quantities we have been able through gifts of plants from friends to use slightly newer things such as Pluie d'Or and Coronation in yellows, Los Angeles, San Francisco and Shasta in whites, Louis Bel and Katherine McFarland in deep purples.

In addition to these clear colors which make up most of the color scheme, there are some large beds for blends. They are planted on a slope away from the main entrance so that they are not seen at the first glance, and so that the more neutral colors do not detract from the brilliance of the whole. In this same distant position also we have a collection of the newer kinds, most of which have been given to us by Dr. Hanes and one or two other interested friends, either of the garden or of the American Iris Society.

The ground preparation began in June and planting started in October and continued until Thanksgiving time when bad weather prevented our working with small plants. The earlier planted beds bloomed surprisingly well in the spring of 1935. The later planted ones quite naturally did not make much of a showing.

As Dr. Hanes has stated the original plans for the garden were

for irises only but it was soon realized by the sponsors that even with the great variety of irises that this was not enough. I was very glad that they realized this for it seemed to me that no matter how much we liked irises to plant a garden of them alone is not sufficient, and that they are more beautiful when used with other things than when used by themselves only. Therefore in addition to the irises I have already mentioned and some 5,000 bulbs of Spanish and Dutch varieties, we planted in the fall of 1934 about 25,000 daffodils in 10 varieties, and about 14,000 small bulbs including such things as Crocus, Scillas, Chionodoxa and Grape Hyacinths. These bloomed well in the spring of 1935 and gave color late in February and all through March, the height of the daffodils coming about March 25th. The height of the tall bearded iris was reached about the 4th or 5th of May and the Japanese iris about the 1st of June. We have in addition about 500 Hemerocallis now planted, Mallows and other similar plants.

The garden is naturally surrounded by pine woods and the edges of these woods furnish an ideal place for many flowering trees. We have already put in about 150 Japanese cherries in 10 varieties, and 100 flowering peaches, 25 flowering apples, 50 pink dogwoods, several hundred white dogwoods and quite a number of such evergreens as Cryptomeria, pines and hemlocks. These trees as they grow older should make the present natural background even more beautiful.

The main construction of the garden will be completed in the fall of 1935. At that time we expect to put in about 1,000 dwarf bearded iris which were given to the garden by an American Iris Society member, about 1,000 intermediates, the gift of another member, and many additional modern varieties of iris including such things as W. R. Dykes, which grows extremely well in that climate.

The iris collection, however, will not be extended beyond the 600-foot mark in the garden and the next 500 or 600 feet will be used for a shrub and tree collection, and for fine varieties of flowering peaches and flowering cherries, both of which grow very rapidly in that section of North Carolina. Under them we shall plant more bulbs for early spring bloom and probably also more Hemerocallis in the moist sections to prolong the flowers into the summer. I hope also to have a space for such lilies as may do well under our conditions.

Such a garden should give interesting bloom at Durham from the first or middle of February until college closes in mid June, and there should be scattered bloom during the summer months, and then a great display of fruit on the flowering shrubs and on the flowering crab apples, hawthornes, dogwoods and hollies.

It is believed that the garden will be visited by people from great distances. Indeed on Sunday afternoons of its first year automobiles came there in such quantities as to show us that the parking spaces we had already planned were totally inadequate and would have to be enlarged. Garden Clubs all over North Carolina have expressed an interest in the project and have sent their representatives to see the garden. All reports on it apparently have been very favorable. I have been rather sorry that so many people should see it this first year when it is in a crude unfinished state, but perhaps that will create an interest and make them realize how big a job it was to bring this land into its present condition.

The American Iris Society has never been able to create much interest in Iris in the south and I very much hope that this garden will be the means of doing this, particularly for eastern North and South Carolina and Virginia. The climate through this Piedmont section is one that is very difficult for many plants, but the iris flourish wonderfully. It needs only a demonstration like this to start a great wave of iris enthusiasm among those gardeners located between Washington and Charleston, and between the Atlantic ocean and the mountains. I hope very much that in time this garden may become an official test garden for the American Iris Society, and that the American Iris Society will cooperate with the Botanical Department of Duke University in iris growing. We need greater information than we have today on the growing of iris and we can only get it by such cooperative work.

In closing I should like to extend an invitation to all members of the Society to visit this garden if they are nearby. Mr. Norfleet Webb will continue in charge and will be glad to welcome visitors. Durham is only just off the main route No. 1 which goes from New York to Florida and can be reached by way of Raleigh on the east, through which the route passes, or by way of Greensboro on the west through which the Southern Railway passes. It is an interesting country for any one who likes gardening for there are a few old private estates where the trees

are magnificent and show what might be done if people had either the interest or the resources to keep their trees from being cut down. The mild winter climate enables us to grow many plants which are not suitable for the North, and should make it possible for us to grow a much larger number of iris species than can be grown in any of the other American Iris Society gardens.



IRIS NOTES OF 1935

MRS. THOMAS NESMITH

■ The past iris season has been an extremely interesting one with a surprising number of worthwhile irises throughout the country. It has been my good fortune to see many of them, and your Vice-President has asked me to send in notes for the A. I. S. BULLETIN on those which most impress me.

Late in April we motored South, going through the Shenandoah Valley at apple blossom time, on to the mountains aglow with red bud, in beautiful contrast with the cool white of the dogwood, thence on to Chattanooga, where we had our first view of some of the newer irises. These were growing in the delightful garden of Mr. and Mrs. Clint McDade and those with which I was especially pleased are as follows:

Lucrezia Bori, a beautiful iris with domed standards of canary yellow which are slightly ruffled and notched at the edge. The falls are long and broad, of deeper tone than the standards, and with an olive halo; this is when the flower first opens, and soon pales out to a more even tone of yellow. The beauty of the flowers is greatly enhanced by a brilliant yellow beard. The flowers have a great deal of substance and are borne on tall well branched stalks. A long flower of most pleasing tone.

Eclador is another yellow of lighter tone, but as I saw it in the McDade garden, and later in my own, I did not think it was as good as several of the yellows of American introduction; it lacks a bit in substance and has too much venation.

Jean Cayeux is the best iris of distinct brown tone that I have seen and is a great addition to any garden.

Golden Hind impressed me as a brilliant yellow of very deep tone, set off by the intense orange-yellow beard, but the flowers although well formed, are not large and the short bloom stalks are most disappointing.

Autumn Frost, a good white of Moonlight parentage was in bloom, and if it performs as well in fall flowering, it will be a most outstanding Fall blooming variety.

Mr. McDade had a most interesting seedling of his own, called Red Indian, a brilliant red of medium height and excellent form, not a large flower, but very effective in a border planting.

The next day we went on to Nashville, where we arrived in time for the opening events of the Annual Meeting of the American Iris Society. This was the largest and most delightful session of the Society that it has been my privilege to attend. We were given true Southern hospitality, and to this was added the enjoyment of personal contacts with so many A. I. S. members who were there from all parts of the country.

The irises in the garden of Dr. and Mrs. Kirkland were in full flower, and gave a most amazing wealth of color, bronze, yellow and copper tones predominating in many of the newer varieties. Magnetawan, Ojibway and Orilia are in this color range and are very brilliant, but the following are the ones which to me were most impressive:

At Dawning, a beautiful arbutus pink, which I like more each time I see it; the flowers have exceptionally fine form and substance, and are borne on sturdy well branched stalks. The standards are lighter than the falls; the heavy orange beard and yellow in the center of the flower add greatly to its charm.

Gazi is a most pleasing yellow with slender, but very wiry and strong stems, on which are borne many well shaped flowers of brilliant amber yellow. The standards are erect and the falls gracefully flaring.

Copper Lustre, Junaluska and Summer Tan were blooming in great profusion, and each is outstanding in its particular range of color. They all please me as much or more than they had in previous years.

Rising Sun, a handsome bi-color of splendid habit and form; the standards are mauve with coppery pink flush, the falls are rich rose strongly overlaid with copper on the upper part of the falls. A strong and sturdy iris, giving a great amount of bloom.

Setting Sun is evidently a late blooming variety, for it did not flower until most of the A. I. S. members had departed. It is a dark rich toned iris with standards of gold and rose, well blended; the falls are very velvety and of deep mahogany red shading lighter toward the edge; orange bronze beard with the same color tone in

the center of the flower. I should like to see it a bit taller and undoubtedly it will be another year.

Most of the newer irises in the garden of Mr. and Mrs. Washington are late flowering, and as a consequence, very few were blooming at the time of the A. I. S. meeting, but two which attracted a great deal of attention were a new yellow called Sundust, and a white which has been named White Goddess. Mr. Euclid Snow of Chicago was in the garden, and I asked him to describe them for the BULLETIN; these are his descriptions:

“Mrs. Thomas Nesmith’s lovely white seedling showed to good advantage in Mr. T. A. Washington’s garden in Nashville this past Spring. This is a real white, the beard serving merely to light it up, not giving out color to mar the whiteness. In texture and substance this white bloom has not been surpassed, neither hot sun nor a heavy downpour of rain seemed to affect it, a trying twenty-four-hour change in climatic conditions left it unchanged, something to be considered when placing an iris in a garden. The plant growth is good, stalk nicely branched, blooms well placed, the height of the bloom is good for garden planting as well as proportioned to stalk and plant.

In the same garden a seedling grown by the owner attracted the attention of all visitors. A good yellow with a bloom finely formed and balanced to stem and plant, with excellent substance and texture allowing it to endure all weather conditions. The slight tendency to whiten in small streaks on the falls as the flower aged in the sun did not detract in any way from the good garden effect, which when all is considered, is the true test of an iris which is a garden plant first of all. Many irises will serve as cut flowers, but the real need is for irises for duty under all conditions. These two seedlings ‘measure up.’ Let us hope they are to be named and made available to all gardeners.”

In the seedlings of Mr. Washington we find a surprising number of copper, apricot and rose toned irises, several of them being of a distinct warm pink, a new break in color and quite different from the colder orchid pinks to which we are accustomed. Mr. Washington has followed a certain theory in the breeding of these pinks and has arrived at some most satisfactory results. Hasse Oobe, Lily Pons and Pink Butterfly are in this group and have been widely praised in northern gardens where they bloomed this last iris season.

Others that attracted a great deal of attention in the Washington garden are described below.

Yellow Butterfly. The standards are yellow faintly flushed with pink, the falls are pale yellow overlaid with rose-pink, with faint flush of blue in center of the falls. Rich yellow beard, the center of the flowers gives out a yellow glow.

Maya, a late blooming iris was the finest red that I saw this year. A self with large well formed flowers of brilliant red with a luminous orange and yellow center to the bloom enhanced by the orange beard.

Cellophane, a huge flower of light lavender-blue. The standards are domed and large, the falls extremely large and semi-flaring. The flowers have the heaviest and most firm substance I have ever seen in an iris, the flower stalk is strong and very tall with flowers well placed upon it.

Soldano is a very dark maroon and mahogany blend with well domed standards of mahogany and maroon, the falls are very velvety maroon with a mahogany undertone. Large flowers well placed on tall widely branched stalks; yellow beard.

Mrs. Stahlman has an extremely lovely iris seedling called Mary Stuart, a blend with maize yellow standards flushed with apricot; falls of the same tone of yellow overlaid with apricot flushed deeper at the throat; deep yellow beard. More brilliant and much better than Vishnu.

In the new beardless irises known as the Washington hybrids of the southern states irises there were several new seedlings of especial interest.

Chucalissa (Great House), a deep sky blue when the flower first opens, paling out to real forget-me-not blue on the second day. The most beautiful blue beardless that I know.

Amalata. Arbutus pink when the flower first unfolds, later shades out to soft flesh pink, with styles and crests of same tone, pale cream signal and white throat. An exquisite flower.

Holochee (Cloud), a flat open flower of delicate French-gray with pale olive styles and French-gray crests; an entirely new color tone in these irises.

Talladega, a beautiful soft pinky lavender with deeper line of lavender in the center of each semi-flaring fall.

It is in these irises that we find the real blues, pinks, lavenders pale yellows, and deep rose tones. They must be seen to be fully appreciated for it is impossible to describe their beauty of form, branching and color. They are thoroughly hardy in northern gardens.

Mr. and Mrs. Williams of Nashville have a most attractive plant-

ing of irises in their garden, not only their own seedlings, but many of the newer irises from all parts of the country. Among those that I thought of especial charm are the following.

Brown Mahogany. A seedling of Mr. Williams, a dark and richly colored iris with standards of deep smoky brown and mulberry. The falls are mahogany and maroon. The distinct golden brown beard adds greatly to the brownish tone of the flower; an entirely new color.

Sunmist, an iris raised by Col. Nicholls. It is a soft pale yellow of excellent form and good substance, with a profusion of bloom. I understand that it grows taller than it did in Nashville and this would add greatly to its beauty.

Kalinga, an iris bred by Dr. Kleinsorge, is one of great charm, a soft creamy yellow of good form and substance. Large well formed flowers on beautifully branched stalks. An iris that is difficult to describe but one that leaves a lasting impression as being very outstanding. I was much pleased with it.

Others that I saw in Nashville this season which are especially worthy of mention are: Blithesome, a beautiful glistening yellow with pale cream under tone; Francesca, a rich Pompeian pink, tall and well branched, an unusual color and most attractive; Jean Lafitte, a rose-red iris, beautifully branched with large glowing flowers; Will o' the Wisp, the most perfect branching I have ever seen in an iris, a yellow and cream bi-color with standards darker than the falls, of good size and splendid substance; Ishpanee, the gayest iris that I know, deep yellow with a decided spot of red on each very horizontal fall; Dominion Rex, a larger, taller, and much improved Dominion; Aztec, a brilliant copper and red of tremendous garden value; Yucatan, a blending of maize, coppery rose, and metallic blue, with a deep yellow beard; Lumiere, a yellow and white spuria with very flaring falls; Skyline, a misty gray blue spuria which is the color of soft sky-blue.

From Nashville, I went on to Columbus to judge their Iris Show, but unfortunately most of their better irises were not in bloom, however they made up for it with their splendid staging of the flowers they had, and their delightful hospitality.

Dr. Waller had a lovely iris in the seedling class of the show which was recommended to the Directors to receive a Highly Commended award. This was done by accredited judges of the American Iris Society. The standards are frosty pale blue and ruffled at the edge with a strong greenish white midrib. The falls are icy

white and in the center of each fall is a mellow ivory zone which is charming and most unusual. The beard is rich orange yellow. This description is of the flower when it first opens, and after exposure to the sun, it pales out to an even white.

Another interesting seedling was growing in his garden. The standards are purple, slightly lighter than the velvety falls. It starts blooming with the Pumilas and sends out blooms about a week apart, finally finishing with the later bearded irises. Not a tall iris, but with stiff sturdy stems, flowers of medium size; a most unusual variety.

My next iris visit was to the Franklin B. Mead Garden which was in full bloom, with many rare and beautiful irises in pleasing color contrasts. The garden shows the painstaking care with which Mr. Mead arranged his flowers for color harmony.

Eros was in bloom in all its beauty, and I was as much pleased with it as I had been the previous year, a very lovely iris of warm pink and an addition to any garden.

Mrs. Hamilton Rowan is a reddish purple iris with velvety falls and reticulations which extend to the base of the beard, the standards are very large and slightly more intense in color than the falls; a large flower.

Sunol was filled with bloom and very effective in the garden; yellow standards and falls of yellow with bluish lavender overlay in the center of each fall. A flower of smooth finish and quite heavy substance.

Sylvia Lent has standards of maize yellow, slightly open; the falls are grayish white and semi-flaring. The deep yellow beard gives a deepening note of color. An interesting flower and pleasing.

Minoan and Floristan, two of Mead-Riedel introduction, were in full bloom and very brilliant in color, but I liked a similar seedling even better, No. 31-40. The domed standards are tobacco-brown flushed rose, the falls are iridescent garnet-brown. The whole flower is set off with a deep yellow beard. More brilliant than Golden Helmet.

Helen M. Riedel, an orchid pink flower with domed ruffled standards and falls slightly darker, almost a self. Well branched and has good garden value.

Another seedling which was most brilliant and unusual was No. 31-50 Dauntless. The closely domed standards of lavender and buff are slightly fluted and have a very heavy midrib; the falls are flaring and of very heavy substance, a fuchsia coloring in the center

part of fall with a copper and tan border; the heart of the flower is golden tan. I liked it immensely.

From Fort Wayne I went to Bluffton to see Mrs. Williamson and her two daughters and their irises. I was a bit early for their height of season, but there were several new irises that appealed to me.

Gancho—brilliant deep yellow standards; falls rich mahogany-red edged with yellow and a rich orange beard. A luminous variegata with slightly overlapping standards.

Sandia, deep smoky pink standards with brighter pink falls, orange yellow beard. A flower of heavy substance and of deeper tone than Eros.

Varese, a deep wine-red self with well domed standards and very velvety red falls, slight reticulations near the beard which is brilliant yellow. I was much impressed with its deep vivid coloring.

Sundipt, a yellow of deeper tone than Pluie d'Or and perhaps a larger flower; a profuse bloomer.

They have a very interesting yellow seedling of medium height which seems to be the best yellow fall blooming variety. Also a new "Table Iris" of dark but gleaming red, it has Dominion form of flower, but is well branched and blooms and stem are in perfect proportion for this class of irises. I understand it is to be introduced.

Two very lovely and attractive seedlings which are to be named another year are difficult to describe on account of their combination of colors. One has standards of copper with falls of iridescent blue and purple, edged with the same copper tone as standards, brown throat and orange beard, styles lighter and with blue midrib. A very gleaming flower reminding one of the peacock colors. The other has open ruffled standards and falls with olive-tan edge and deep slate-blue center; olive yellow throat, a yellow beard and cream styles with blue midrib. The open standards really add to the beauty of the flower.

Mr. Paul Cook of Bluffton has some excellent seedlings and I hope has been persuaded to allow their introduction.

One is a strawberry-red self with well domed standards and flaring velvety falls, the rich gold beard seems to illumine the center of the bloom. The whole flower has a rich coppery undertone that is most distinctive. Another of his that especially impressed me was a royal purple self with well closed standards and velvety purple falls. The beard is blue-purple with faint brown-purple in

the throat giving it a depth of color that is extremely attractive.

He has an orchid pink bi-color of much better form and substance than Dog Rose; the flowers are well placed and give a very pink impression. I was much interested in a very velvety black-purple. The standards are domed and closely held together; the falls look like thick velvet and are of Louis Bel depth of color, but the whole flower is much more brilliant and of perfect form.

A deep flaxen blue iris with very upright domed standards and semi-flaring falls was most attractive; an excellent blue and of great garden value.

I reached home May 31st and found my own iris garden rapidly coming into flower. There was a prodigious amount of bloom on all the irises throughout the garden with extremely few losses of plants or flower stalks from our cold winter. Among the irises which attracted most attention and were especially admired by garden visitors are the following:

Happy Days was perfectly beautiful with its large well shaped flowers of chrome yellow, tall and well branched, also clear in color, showing none of the fleckings of one parent, W. R. Dykes. I liked it the best of all the California yellows.

Marquita is a delicately beautiful iris and most unusual in color with its creamy standards and rose pink falls, the heavy venation seems to add rather than detract from the flower. It was a first year plant and the falls had a tendency to tuck under, but I have been told that when well established it does not have this fault.

Ann Douglas is an iris raised by Mrs. Wm. Benners of Dallas, Texas. It is one of the clearest blues of lighter tone that I know, the flowers are not large, but of splendid form and finish and is an excellent blue for garden planting.

Robert, originated by Dr. Ayres is a perfect iris in height, color, form and finish. Maize and soft tawny yellow in color with a bluish cast just below the beard which is deep golden yellow. I like it so much better in every way than I do K. V. Ayres.

Blue Monarch bloomed beautifully as did Sierra Blue, Shining Waters, and Pale Moonlight. If you could have only one of these, it would be very difficult to choose. I like them all immensely.

In the white irises, Parthenon, Oriana and Gudrun seemed to be the favorites of the newer ones; Gudrun is the largest white I know; too bad that it is not just a bit taller.

Maya, Jean Lafitte, Junaluska and JEB Stuart were outstanding reds in the garden; Summer Tan and Jean Cayeux were the best

in brown tones, while Eros, Pink Butterfly, Hasse Oobeas, and Pink Lady are rich, warm, pink blends and all of the above won warm praise from the accredited Judges of the A. I. S.

Blithesome and Desert Gold bloomed profusely and were the best of the earlier yellows; Eclador, Ishpanee and Will o' the Wisp were among the later yellows that were especially noticed by garden visitors.

Purple Eve and Cyrus the Great are dark, distinctive irises and stand out in the garden. Castle Cary is a late blooming blue of clear color and excellent carrying qualities.

Golden Flare is well named, for although not large, it is most brilliant in the garden and does not fade as does the similar colored Talisman. Golden Light belongs in this group and attracted many visitors.

Cortez, a late blooming variety, was in flower when Professor and Mrs. Mitchell were here, and I was much flattered to have them select it as being one of the most outstanding in the garden. This was done without their knowing that it was one of my introductions.

Nevada is an unusual iris with pale amber standards and fawn colored falls, which gives the effect of a delicate yellow bi-color. I liked it very much. Another seedling raised by Mrs. Tobie which I saw in her garden near Portland, Maine, was a cross of W. R. Dykes. W. R. Dykes, a pale creamy yellow with more substance and better form than its parent; very interesting from a breeders standpoint.

In the garden of Mrs. Lewis, Lady Paramount and California Gold were blooming, the two extremes in the range of yellows. Both are beautiful irises, but to my mind not equal to Happy Days. Arbutus, a large pinky lavender flower of good proportions, but as I saw it on too short a stalk, as it was a first year plant. Without doubt it will be much taller; if so it will be a charming iris. I was much impressed with Eleanor Blue in size, substance and color. It is one of the best blues.

Rosy Wings, a pinky coppery rose of splendid substance and form was just as lovely this year as when we saw it first last year blooming in the garden of Mr. Gage.

Autumn Elf, an iris originated by Dr. Brown is the most astonishing blooming iris that I have ever known. When well established the plants bloom in May, again in July, August and September. With the exception of June it blooms throughout the summer months. The standards are cream and well arched, the

falls are bluish lavender with olive-cream edge, very flaring and ruffled. The flower stalks are filled with bloom of medium size; a dainty and most interesting iris.

Mary Lee Donahue an iris originated by Mr. Gage is a beautiful yellow of Dykes parentage, but does not fleck, and has much more substance than its ancestor. A rich chrome yellow of excellent form and finish. Greatly admired by all those seeing it in bloom. Mr. Gage has given us some very fine irises.

Among the new irises of 1935 which are of eastern origin and seem very worthy of introduction are the following:

Red Comet, a seedling raised by our Vice-President, Mr. McKee, an extremely handsome deep coppery red with domed standards and well rounded semi-flaring falls of lustrous deep velvet, the brownish styles and throat are set off by the beautiful yellow beard. A splendid iris.

Creamilda is a new seedling raised by Mr. Gage and blooming for the first time this year. A huge flower of soft cream with the base of the falls and style branches a brighter yellow. The standards are arched and the falls are semi-flaring, the beard is bright orange yellow which intensifies the deeper yellow of the center of the flower. A large and beautiful bloom that might be described as a Gudrun done in yellow tones.

Metal Lustre is the first named seedling from the Kellogg garden, and although not a large flower it is very brilliant in color. A coppery background with a metallic fuchsia red overtone. Excellent garden value.

Medley is a new iris originated by Miss Sturtevant of pink coloring, lighter than Sandia and Eros but has great brilliancy enhanced by its orange beard. One that I especially like in Miss Sturtevant's garden was a seedling, I think the number was 30-9, and was from a crossing made by her in Professor Mitchell's garden several years ago when she was in California. The whole flower has the iridescence of a peacock's feathers. The standards have a yellow edge and a bluish midrib, the falls are peacock blue with touch of bronze at the throat, rich orange beard—a very unusual and striking iris and one that I hope Miss Sturtevant will introduce.

At the present time there are so many beautiful irises that one could go on indefinitely describing interesting ones, but in giving you these notes, I have endeavored to describe and convey to you the impressions of garden visitors especially interested in good irises.

Lowell, Mass.

VARIETAL NOTES, 1935

J. P. FISHBURN

■ Virginians were fortunate in their iris season this year. May was nothing like so hot as usual and there were many overcast days which prolonged considerably the bloom. The result was an unusually fine blooming season, fully ten days longer than we normally expect. The only drawback was some late cold weather in March and April which froze out the bloom stalks on some of the more tender varieties, particularly some of those originating in California. The writer was at the last moment prevented from attending the iris meeting in Nashville but had gotten as far as Chattanooga when called back to his office. The notes below are based primarily on the bloom in his own garden, but to some extent on the very fine gardens of Mr. Clint McDade in Chattanooga and Mr. Sam Graham in Rome, both of whom have remarkably fine collections of iris, unusually well grown.

Of the light blues, Shining Waters is as fine as anything I have seen and it was splendid in my garden this year, despite the fact that many of the California varieties did not bloom. Blue Triumph was gorgeous at Mr. McDade's and Mr. Graham's and deserves the fine things which have been said about it. Gloriole on a new plant in my own garden was most promising and I believe it is going to be one of the best in this class. Pale Moonlight was as fine as anything I have had this year, but in the past it has bloomed for me on a one-year plant and has done poorly afterward. Castalia, put out very reasonably by the Williamsons, is most satisfactory, and is a fine light blue. Eleanor Blue, likewise not expensive when introduced, is most unusual and is admired generally by visitors. Paulette showed amazing size of bloom in my garden, but I want to see it on an established plant. Buechley's Giant has size and height, but is uninteresting otherwise. Of the older varieties, Ballerine, El Capitan, Loetitia Michaud, Gleam, Mary Barnett, Sensation and Pacific were all excellent this year.

In the medium blue and blue purple tones, Sierra Blue is by all odds the best I have seen, although my particular plant has not done as well as might be hoped. It is a finished flower of fine shape and color, and I wouldn't want a better medium

blue than this, properly grown in an established clump. Blue and Gold was good this year, better than Blue Gown, which was somewhat floppy. Missouri did not bloom for me. Indigo Bunting bloomed on a poor stalk, just enough to indicate that it is a most interesting color. Blue Monarch was good at Mr. McDade's. Persia, if it belongs in this class, was one of the finest things in the garden this year, as always. Violet Crown has not grown well for me, but nevertheless I like its color a lot. Wedgewood, Blue Banner and Baldwin are still good enough for anybody's iris garden.

Of the deep blues and blue purples, I like Winneshiek as well as anything I have seen. Tioga and Motif were both excellent this year, as was also Tenaya, which may belong in the red purple class. Meldoric was good for the first time this year, and when it is good, it is very, very good. Of the older things, Sir Michael, Mount Royal, Van Cleve and Cinnabar are very, very fine.

Of the light pinks and pinkish lavenders, I believe the best one in my garden this year was Ethelwyn Dubuar, which has size and fine color. Imperial Blush was good, better in my judgment than Pink Satin, although the latter was better this year than I have ever grown it before. Eros, an entirely different shade of pink, is going to be one of the best, although in my garden the lower petals were inclined to curl after they had been open a few hours. The color is unusual and fine. Noweta and Hermene both have fine pink tones and both have done exceptionally well. Thais, of the older ones, makes as satisfactory a clump as I have ever had in my garden. I don't like Dogrose, but I do like Ambrosia and Airy Dream very much. Eloise Lapham, although a very light pink, makes a fine clump.

Coralie is one of the very best of the medium pinks and reds. Avondale is another fine new one which is most promising. Of the older ones, Edgewood, Frieda Mohr, Farandole, Rose Dominion, Rasakura and Waconda were all excellent.

Of the red purples and reds, Cheerio and Burning Bronze are two of the very best. I like Ethel Peckham better than Joycette, but both are excellent. Maluska and JEB Stuart are both very, very fine. Rubeo and Ronda, from the West Coast, are two of the best I have had in this color. Legend is far better than it has been credited with being, and Directeur Pinelle was magnificent in Mr. McDade's garden. I liked Spokane and War Eagle in Mr.

Graham's garden well enough to want to buy them soon. Zuni makes a very fine clump, as does Mareschel Ney. Sachem has been particularly fine in my garden, better than I have seen it elsewhere. Indian Chief, Dauntless and Deputé Nomblot still belong in any fine collection.

I have three standbys among the yellows which I have in various places in my garden. They are Pluie d'Or, Coronation and Phebus. William R. Dykes bloomed well this year for the first time, and when it is good, it is almost as good as Lady Paramount, except that it lacks height. Lady Paramount was gorgeous in my garden on a one-year plant, but its tendency to bloom from side shoots as well as the normally blooming rhizome leaves me little to hope for next year. I want further experience with it to recommend it unreservedly. Happy Days did not bloom for me and I missed it in two other gardens, but it was reported magnificent in both places. Eclador did not bloom for me but was gorgeous in the other gardens. Golden Hind has a gorgeous color but seemed on one or two blooms to have poor substance. Final opinion on this must be reserved. California Gold did not bloom for me this year but recollection of last year's bloom, the most striking deep yellow I have ever seen, can't be downed. Lucrezia Bori, Bob Schreiner's magnificent new yellow, is certainly one of the very best yellows I have ever seen, if not the best. It very possibly may be the best of them all. It was gorgeous as it bloomed in Mr. McDade's garden. I was disappointed in Gold Foam despite its honorable mention.

Of the yellowish toned things, which are not quite yellow, I liked Eclat, from Mr. Gage, very much; Natividad, a lovely big cream toned iris, is one of the very best of any color that I have ever seen; and Eothen, about which I hear very little, is one of the most striking things in my garden. Chromylla and Ashtoreth seem erratic in my garden. G. P. Baker and Alta California, although not particularly good in color, are worth having because of their fine height. Dune Sprite and Moon Magic are nice irises despite the fact that the color is not particularly interesting.

I like Sunol as well as any of the blends. K. V. Ayres is good but not very much better than Ningall, which has been excellent in my garden. Lux is very striking in mass, as I saw

it in Dr. Hanes' garden in Durham, N. C. Mary Geddes is still one of the very best blends I know. Jean Cayeux attracted a great deal of attention this year. Of the pale blends, Aubade, Alcina and Nepenthe were all well liked, although my preference is the first of the three. Golden Flare and Golden Light bloomed on short one-year stalks, but I believe I will like both of them immensely. Rameses is still one of the very best and I don't know anything approaching it in color which equals it. Toscana is a favorite color of mine, although the blooms are small and not all that they ought to be in form. Largo is tall but too pale to be of much use. King Midas is still excellent, and Henri Riviere is a favorite of nearly every one who visits the garden. Trail's End did not bloom for me, but it was an excellent color, on a new plant, at Mr. McDade's. Clara Noyes still attracts a great deal of attention, as do Evolution and Elsinore, both of which are worth having.

Vision, the new variagata from Cayeux, is by all odds the best in this class. Aurex is one of the best ones, and Crown Prince is one of the poorest. Lodestar, although old, is bright and nice, and Gay Hussar is very useful for a small one. The falls of King Tut are about as red as anything I have seen and we like it a great deal. King Juba is better, although not so red. Alp-wee is excellent, and Golden Helmet, if I can judge by a one year-plant, is going to be one of the very best. Stonewall Jackson is quite promising. Beau Sabreur, although old, is one of my real favorites. El Tovar hasn't grown particularly well for me, but I believe I would like it tremendously on an established clump. I have never seen anything but a short stalk of it, but it is quite rich.

Of the whites, the best all-around one I know is Venus de Milo. Easter Morn I like better, but it is more erratic in growth here. However, it was gorgeous this year. Joyance is going to be good. It has a particularly rich center, and my only objection to it is the droopy falls, of the Selene type. Gudrun is huge, as I saw it at Mr. McDade's and Mr. Graham's, but I don't know whether it has anything more than size or not. Oriana is one of the best growing whites I know. It is a real white and is perfectly hardy. Parthenon I believe is going to rate very high, if I may judge by one-year bloom. I like Colum-

bine a great deal because it is light and airy. Wambliska has always been a flop in my garden. Los Angeles, if it can be classed as a white, is a magnificent one, and Natividad is so good that it is worthy of mentioning here as well as under yellows. Lady Gage, although not particularly large, was most attractive in my garden this year. It makes a fine clump very rapidly, and blooms very, very freely. Shasta and Snowwhite have been the two best of the older ones in my garden. Purissima is impossible, in my garden.

The best plicata by all odds has been San Francisco, which is fairly reliable here. Theodolinda has not bloomed for me, but seemed floppy when I saw it elsewhere. I don't like Sacramento. Cydalise, if it can be classed as a plicata, is interesting only because it is odd. True Delight and Princess Osra are the best of the old ones in my garden.

In the white bi-color class there is ample room for improvement. I have seen no new one that seems particularly desirable, but of the old ones Mildred Presby, Dorothy Dietz, Rheintochter and Rene Cayeux are the best. Folkwang and Debutante, because of their pink tones, attract considerable attention. Amigo, as I saw it in the Williamson's garden, might not be classed as quite a white bi-color because there are blue tones in the standards, but it is most excellent, and I look forward to having it in my garden.

Roanoke, Va.

SPECIES NOTES

Iris laevigata Fischer

■ Although Dykes cites specimens of this plant from Eastern Asia, China and Korea, as well as Japan, it is as a Japanese species and garden plant that we most often think of this charming flower. In Japan, it is particularly conspicuous at the time of the Boy's Festival when *kakitsubata* take their regular place in festival decorations, although it is not so often a subject for flower viewing in the sense used for *Iris Kaempferi* which follows it in blooming season.

In its typical form probably the color is a particularly handsome deep blue purple, but in cultivation in this country the var. *colchesterensis*, illustrated on p. 33 of A. I. S. BULLETIN No. 52, is much more common while in England, judging by Dykes' comments one would gather that the most frequently cultivated form is the var. *Albo-purpurea* in which the ground is white variously mottled and dappled with lavender blues. There are also red-purple forms and lighter hues tending toward dull pinkish rose.

The cultivation is easy if proper attention is given to adequate food and abundant moisture.

There is also a var. *semperflorens* but that has not been seen here by the writer of this note, although it may be represented in Dr. Reed's excellent collection at the Brooklyn Botanic Garden.

Iris delavayi Micheli

This species for no good reason has been one of the most elusive of the Oriental apogons, for time after time, seed sown under this name has produced plants of other species, or worse yet, hybrids of most uncertain lineage, mostly touched with the blood of *Iris Bulleyana*, if one may guess from the markings and the patterns of the falls.

As Dykes points out (The Genus *Iris* p. 26) this plant is valuable for its late flowering, coming when *Iris Kaempferi* and its many garden forms are at their height.

Here in rather light but deep and well-watered soil, it makes good clumps of grassy foliage, not unlike the masses of *Iris sibirica*, from which rise the flowering stalks that overtop the leaves, each crowned with a 2-flowered head in addition to the



Lilian A. Guernsey

Iris laevigata

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Iris delavayi

lateral. The illustration shows the general form and the exact size of blooms. The essential color of the flower is a bluish-lavendar, darkening as indicated, and touched with white in the center of the falls.

It should be recalled that the seed was sent to the Paris Jardin des Planter from Yunman by the Abbé Delvaye, who sent so many other valuable plants back to his homeland.

The Fodder Iris

For some years *Iris pabularia* has been recommended as a forage plant and also the Society for the advancement of horticulture in 1892 procured seeds from Vilmorin Andrieux and Co., of Paris in order to sow them in their testing plot at the municipal gardens at Blankenburg. There, one may now find a thickly covered plot of dark gray-green plants for the most part over 1 meter high, which, however, have not yet proved their value as forage to any great extent. In Dresden, one saw it briefly at the exhibition of the German Agricultural Society, June 30, July 5, 1898, among the "new forage plants," which the Experiment Station for Cultivated Plants at the Royal Botanic Garden at Dresden exhibited the same *Iris pabularia*, but not nearly so high. I might say at once that the plant has very strong ribbed leaves and for that reason might not be eaten by our cattle, and that further it grows very slowly in the first year; on the other hand in late years it grows very strongly and a conclusive opinion should be given now, at least while no chemical analyses have been made of its forage value.

I have discussed these plants in some detail in the Illustrated Agricultural News, Berlin 1897, page 277, and must refer here to that, but now I find myself in the fortunate position to be able to give a colored illustration.

The first reference to *Iris pabularia*, as Naudin called it, occurs in the Bulletin de la Societe nat. d'acclimation de France 1888, pages 698-700, where it is said that Herr Ermens, formerly head gardener to the Maharajah of Kashmir (Rev. hort. 1888, p.

**Iris pabularia*. Revue Horticole, Vol. 60, p. 338, 1888.

At a recent meeting of the Societe d'Acclimation, M. Ermens, former head gardener for the Maharajah of Kashmir, showed several clumps of *Iris pabularia*, Ndn., a plant so he says, destined to render a great service in cultivation of hot and dry countries. "When in Kashmir, said Mr. Ermens, someone asked a native about the nutritive value of this plant; he responded as he pointed out the magnificent forage of the mountain ranges: 'This is an herb; but the Krisham (*I. pabularia*), that is a food.' This response is expressive and gives well the basis of his thought."

338)* had produced a pot of *Iris pabularia* and recommended it to the farmers of southern France and Algiers as a forage plant, because in Kashmir it was considered most useful for that purpose.

In the *Repertorium der neuen Pflanzen*, which *Gartenflora* formerly published until upon the wish of many readers this most useful but "wearisome" alphabetical inventory was abandoned, it is mentioned in 1888, page 598 and 648 as a new forage plant. In 1893, *Gartenflora*, page 98, Messrs. Jorns and Klar wrote of the seedlings in the test plots during 1892: "The young plantlets, which at first showed themselves here and there, developed very slowly so that by the beginning of winter they were only 30 cm. high and a judgment cannot be made now."—In 1894 Vice-President Chapellier of the French Acclimatization Society wrote, in *Revue des sciences appliquées*, Vol. 1, page 517: "The plant is very thrifty, but produced little fodder and therefore is only of moderate interest as a fodder plant.

That it yields little increase, one cannot admit from the luxuriant growth in our test field; it endures cold well and when I first saw the planting on November 3, 1895, I found the leaves 60-8-cm., indeed even one meter high; to be sure they had not been cut. In spite of the fact that we had had frost several days, the (leaves) were entirely green and had not suffered. Finally I saw the bed July 6 of the following year and found that it had increased greatly. The plants were 60-120 cm. tall and were visible from afar on account of their high, compact, dark green stand. Many had half-ripe capsules, but the stalks at times appeared too weak to carry the capsules and many lay on the ground.

The examples which Mr. Mende allowed me to pick out in 1897 have even yet not developed so luxuriantly; the soil seems

As a forage, this iris should be eaten in the green state—one mows it when the foliage is 30-40 cm. high, and it will then give a second crop equal at least to the first in the dry state; the leaves reach a height of 60-70 cm., and should be cut before they lose their growth.

M. Naudin has said of *I. pabularia* that it is ineradicable once it is established. He plants the seeds in a nursery the first season and resets them the following year at the time when new growth begins to show—February for the south of France and Algeria—March or April in the climate of Paris where it does less well than in the south.

In a soil poor, dry and arid, the young plants should be spaced about 25 cm. apart each way; in richer soil they may be advantageously given 40 or even 50 cm. space each way; if the season is dry, one should provide some irrigation, once at least, to assure establishment.

Vilmorin and Company offers the seed in commerce; it is a good thing to soak the seed in water for sometime before planting. (Translation.)

to him to be too dry, although in the test field it is occasionally irrigated. Nevertheless they have increased well and in some cases their roots go 1 m. deep into the dry, sandy subsoil. The plants can withstand dryness very well.

Although Naudin has designated this as a true species, *Iris pabularia*, that is not altogether evident for no description is given; it is a *nomen nudum* which cannot stand. As it happens, it is no new species, but is one already described by Thunberg as *Iris ensata*, which has many synonyms and shows many forms. In the index of Gardener's Chronicle 1888 II, P. V (not in text) is inserted by *Iris pabularia* "(— *I. oxypetala* Bunge)." The pointed leaf flag, *Iris oxypetala*, however, is synonymous with *I. ensata* var. *chinensis* Fischer in Bot. Mag. 2331, which Regel described in Gartenflora 1888, p. 161 and illustrated in colored plate 1011.

If one were to compare this illustration with ours today, one would find at once that our flowers are a much more beautiful blue, while those in plate 1011 appear to be a dirty lilac, that they further do not have such pointed perianth segments and so serrate a stigma crest, it appears to us, therefore, desirable to introduce our plant as a new variety:

Iris ensata Thunberg, var. *pabularia* Naudin.

Iris ensata is described but not sufficiently in his Handbook of the Irideae, but not sufficiently in his earlier work on iris in Gardener's Chronicle 1876, Sec. 2, Bd. p. 323. He says: "Root-stock one-fourth—one-third in. thick, firm, short, creeping, the remains of old leaves decaying into a fibrous mass. Leaves about 4 in a fascicle, at flowering time, 1 foot or more long, one-fourth—one-third inch broad, gray-green, firm and rigid, strong and deeply ribbed. Stalk 1 foot or less high, round, with 1-3 flowers at the top and with 1 or 2 reduced leaves about the middle of the stalk. Spathe of the inflorescence formed of 2 or more linear green leaves, which reach a length of 3, or at times, 4 or 5 inches. Flower pedicel 2-4 inches long within the spathe ovary narrow cylindric, 1 inch long. Perianth tube very short, circumference (at upper part) one and three-fourths—two inches deep, lilac or purple. The perianth segments all oblanceolate, almost of equal length—the three outer with a reflexed one-half—three-fourth inch blade; broad, yellow-veined and bordered at the haft, the three inner segments erect and self-lilac, one-fourth

inch broad. Style branches (petal-like as in all irises) one inch long, without the crests (properly a single two-parted crest). Anthers one-half inch long, as long as the stamens—Capsule elongated, one and one-half to two inches long, one-half inch thick, with six stout ribs and narrowed into a beak. Distributed from the Caucasus to Japan and to northern China, it occurs also in Kashmir and other mountain regions of the whole Western Himalayan area.”

It most resembles the grass-leaved iris, *Iris graminea* L., but the leaves are much stronger and stiffer. The flower stalk and sheaths are longer, the capsule and flower pedicel differentiated. While the one *Iris graminea* is essentially European, the other is essentially Asiatic.

Iris ensata has been known to cultivation in gardens since the beginning of this century (19th) but is by no means common.

It is very rich in forms and has no less than thirteen synonyms.

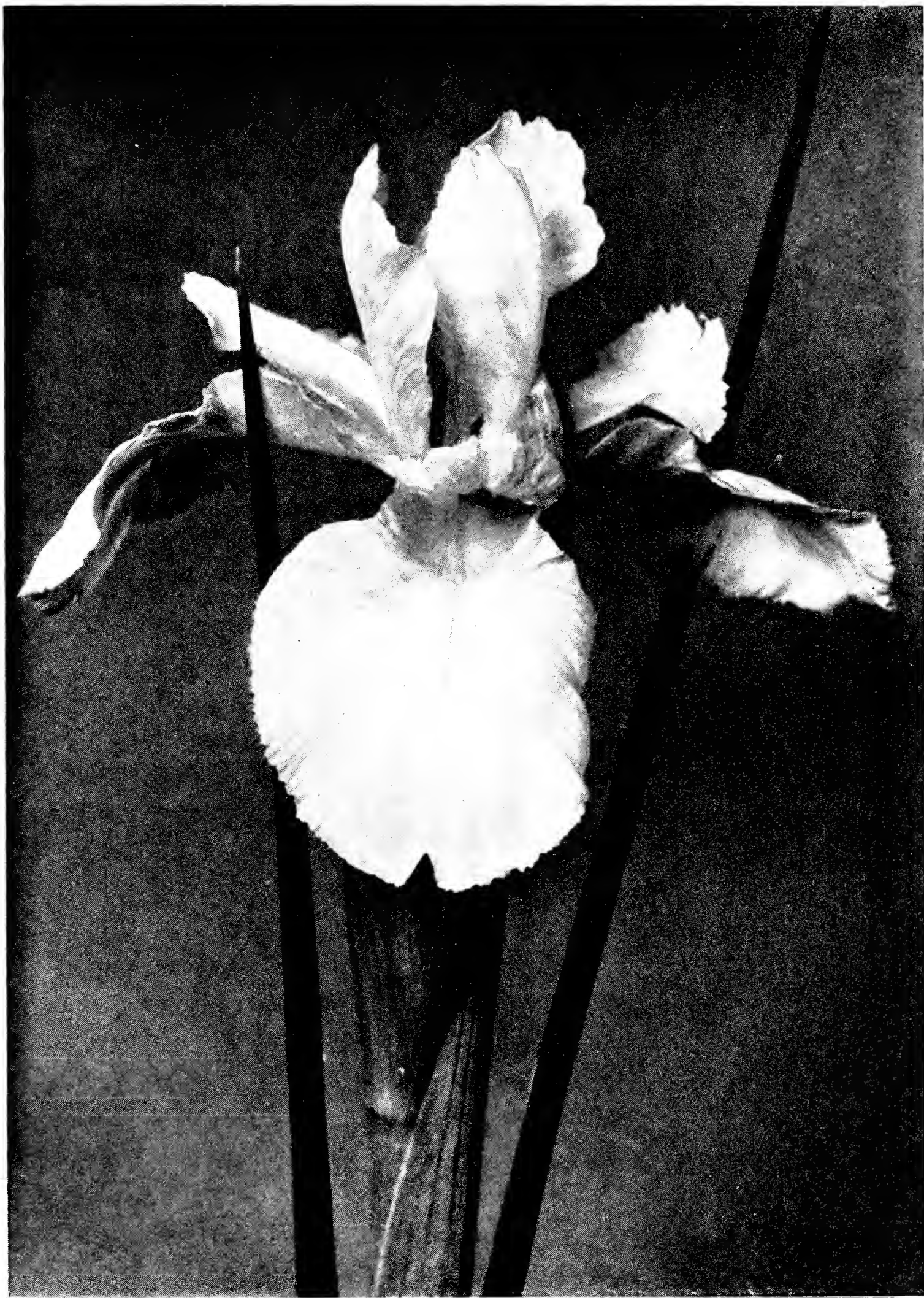
We give only the description of the variety *pabularia*: Plants much stouter, leaf bases tinged bluish red, those of older leaves remaining as fibers, leaves four to six, 60-120 cm. high, one cm. broad, gray-green, usually eight ribbed, flower stalk shorter than the leaves, fifty cm., upright, at fruiting time often lying on the earth, flowers up to 3, perianth segments broad acuminate, the falls broader, bright blue, beautifully veined darker blue, toward the base a little yellowish, the standards dark blue, stigma crest with few teeth, capsule, when half-ripe, cylindric, up to seven cm. long, with six strong ribs, and a short beak; pedicel eight-nine cm. long. From Kashmir. Flowers with us at the beginning of July.

L. WITTMACK.

Gartenflora (1898 pp. 369-371). (Translation)

Iris xiphioides

This species, familiar for the most part as a garden race of named color forms, although known as English iris, is a native of “the Pyrenees and the hills of North-Western Spain” (Dykes, *The Genus Iris*, p. 210). “In its native home it grows in damp alpine pastures, where moisture is continually oozing through the soil and it is, therefore, most luxuriant in those gardens that possess a moist soil, rich in humus.” (ibid.)



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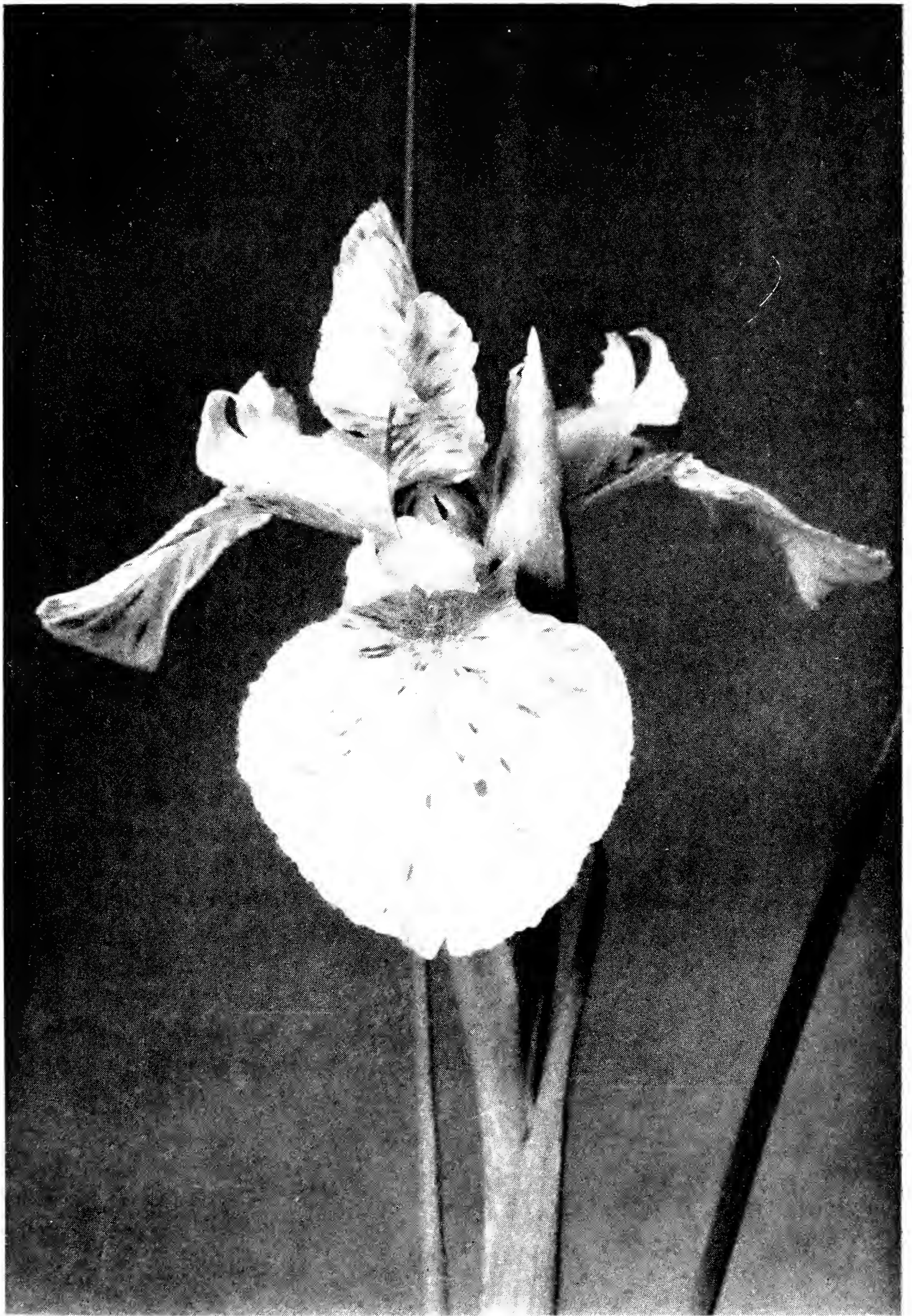
Mont Blanc



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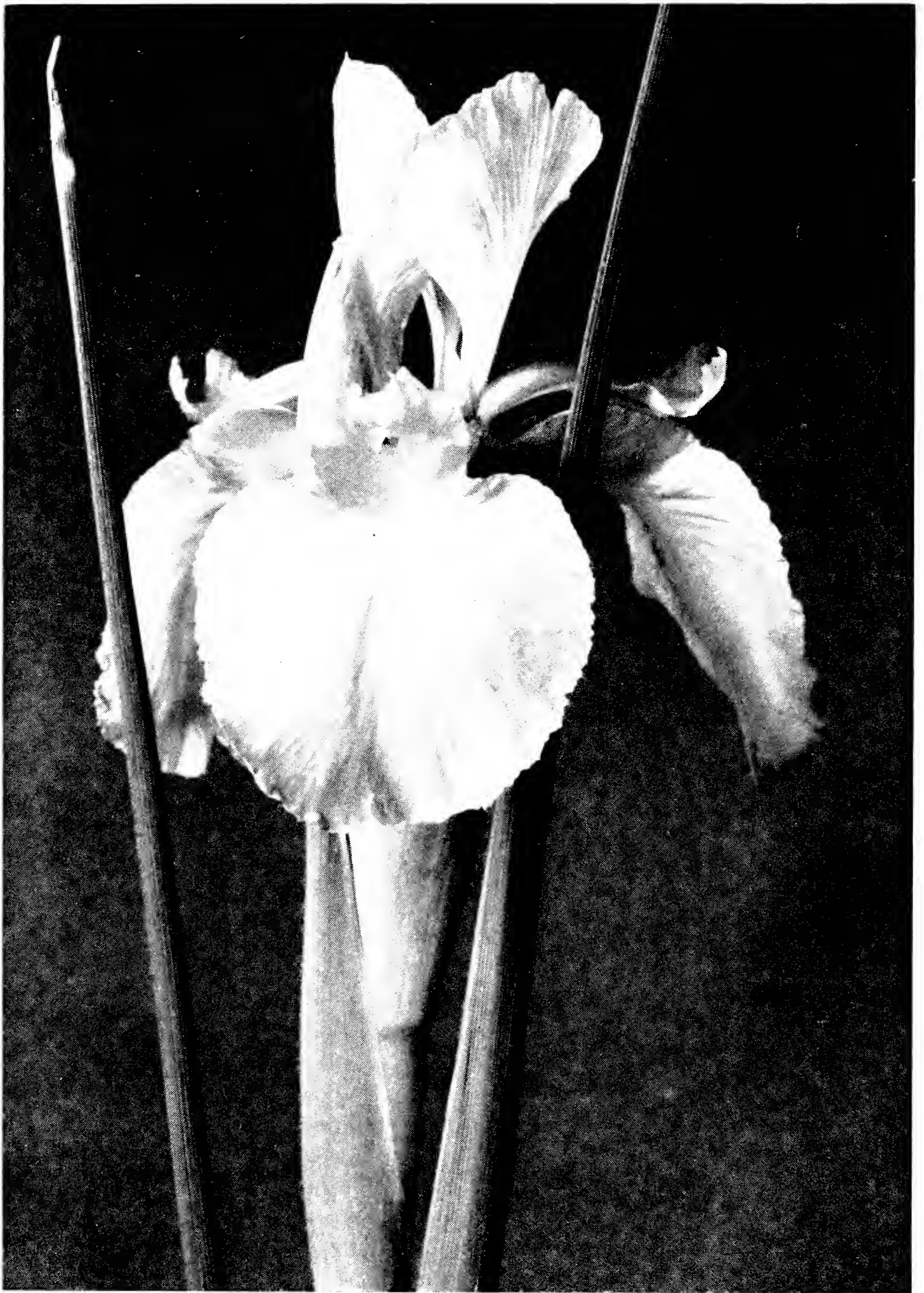
King of the Blues

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Rosa Bonheur



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Bleu Celeste

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Pictures have intrigued the editor for years, and like many procrastinations, the purchase of bulbs of this race was postponed from time to time. One investment turned out an utter failure with a few abortive flowers, but purchases of West Coast bulbs last season gave at least a one year's garden decoration and material for the illustrations herewith.

Two lots of bulbs were purchased—one a mixture and the others of named sorts. The former were planted quite late—possibly in mid-November, at the bottom of the garden hill, and the latter were planted at the top of the hill in deeply prepared soil to which humus had been added. Since, indeed, humus is needed in all soil preparation here, it is quite possible to meet Dykes' recommendation on that point, but by no means can it be arranged that the soil is "moist." To be sure the soil in the lower patch is more moist than the upper site, but even so the term is relative.

In each case the bulbs were very slow in making their appearance, so slow in fact that a little careful investigation was undertaken to see if all had perished over winter. This was not the case for in due time the plants appeared and grew slowly and surely to flowering. Some water was given the upper site, in pity for the plants sprung from a race that lived where water "continually oozed through the soil."

The results in flowering were delightful, as can be judged from the illustrations. Flowers when cut lasted longer than Dutch iris, and the second flowers developed quite finely. In season, the flower developed here after all the other bulbous iris had passed and just before the Japanese iris came into their season, filling a gap in the iris procession.

Seeding was permitted in order to obtain the illustration of the seed capsules for the bulletin.

Digging in the upper patch, shows good multiplication but poor bulb formation, for the new bulbs are all small. This suggests that there was neither enough moisture or enough food to make possible good bulb growth. It leads one to wonder also whether or not these plants should be expected to make flowering bulbs each year under garden conditions that are so far removed from their original conditions. Possibly they will settle down as tulips do here, and produce some flowering bulbs each

year, so that the clumps are never devoid of flowers, although not uniform as when newly selected from nursery stock.

Iris ensata

This iris is certainly one of the less important species, as has been pointed out time and again, but it is a plant that comes to notice repeatedly and probably will reappear in garden notes in the future.

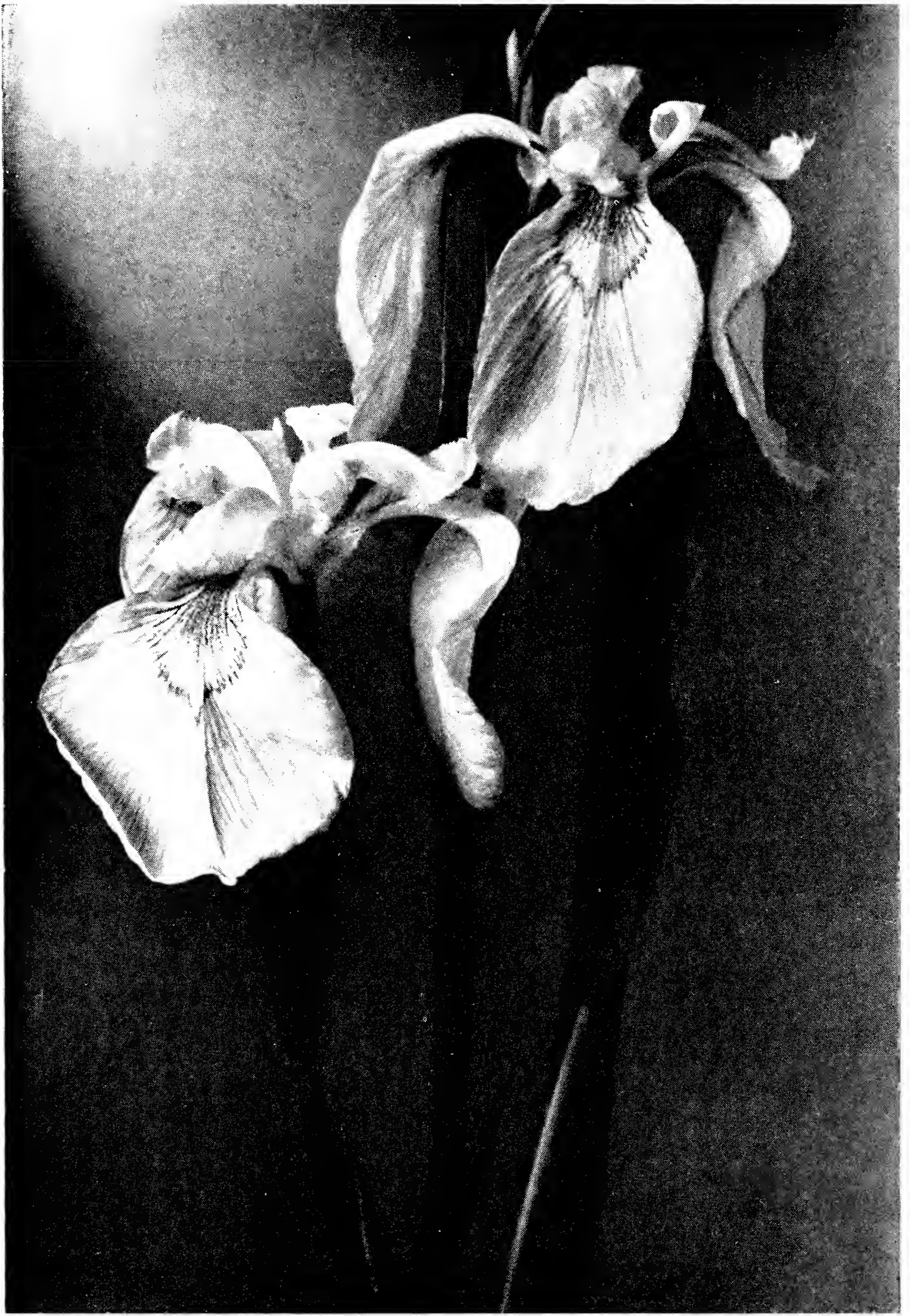
Although it was illustrated in our last bulletin and a brief note was given, further notes follow here, chiefly translations from papers published abroad at the time it was first becoming familiar to the garden world. In themselves they may not be as thrilling reading as some other texts might be, but they do give the full text of the first statements as to the use of this species as a fodder plant. No effort has been made to give the full translation of the longer article by Wittmack (*Illustrierte Landwirtschaft-liche Zeitung*, Vol. 17, No. 33, pp. 277-278 (1897)) since it contains very little that has not already been given in his other text.

Although one may arrive at a wrong conclusion in assuming that nothing further has been heard of the plant as a fodder plant, that it cannot have proved of value equal to other plants that tolerate trying conditions, this seems a safe assumption. Reports have reached here that it is singularly hardy and permanent under somewhat trying conditions in Oklahoma and various lots of seed have been sent to some of the federal erosion projects, although the results from there, seed will probably be limited by the care the young seedlings can receive after they are transplanted from the nurseries, the one time in their life when they are particularly delicate.

In the Chinese cyclopedia, *T'u shu chi ch'êng*, there is a description of the species from the point of view of the old herbalist which contains the following notes taken from a manuscript translation by Michael J. Hagerty of the United States Department of Agriculture. It seems hardly likely that any of our members will dig up their clumps of this iris to try their hand at home brush making and so confound the well-known salesman, but it is hoped that some one will!

Iris pseudacorus

When an enthusiastic gardener who lives nearby was shown



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Iris pseudacorus

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the picture of *Iris pseudacorus*, from which our illustration was made, she exclaimed, "surely you aren't going to have a picture of that thing!" Dykes (Genus *Iris*, p. 79) felt that "the plant deserves better treatment in our gardens than is usually accorded it." Surely there is some proper middle-ground between these two points for admittedly the golden flag will seed itself with weed-like persistence, and yet it cannot be denied that when well grown and effectively placed there is no more handsome iris.

Depending upon the richness of the soil and the amount of water available, the plant makes vigorous clumps of dark green sword-shaped foliage, with gracefully arching tips, from two to six feet tall. The flower stalks are rarely taller than the leaf masses and often seem to be hidden in them, so that the brilliant yellow flowers appear through the leaf masses. These flowers vary in color, size and pattern. In color, they range from palest ivory white to deep golden yellow; in size they vary chiefly in the shape of the falls—those with a rounded blade being the most showy; in pattern, the variations show chiefly in relation to the blotch on the falls which often may be a tone or two deeper than the general petal color and which may, or may not, be outlined and variously surrounded with brown reticulations.

As has been pointed out these variations are not fixed and cannot be depended on in seedling reproduction. Since most seedlings are quite good, no special purpose is served by the division of rhizomes unless a particular plant is needed in quantity.

As to cultivation, rich soil, moisture and more or less of full sun are the desiderata. Bold masses used somewhat architecturally, or along the borders of still ponds, provide the most effective sites for this old and widely transported iris.

CLUSIUS' ORIGINAL NOTE

■ In the history of Spanish plants, 1576, the original note and what we know now to be the English iris is as follows:

Dr. C. V. Matthais, Lobelius, a man extremely well versed in botany sent to us afterwards a kind of bulbous iris, with a thicker leaf and like an onion's, rather greener, with the inner part grooved, and white, sprinkled as if with many silver knobs, with the stem rather thicker and harder, which the four or five leaves embrace as in the foregoing kinds. This sends forth from little scabbards pairs of flowers succeeding each other, larger and wider than the previous ones, of a clear violet and beautiful color, but without perfume, however, on which, in place of a beard, there is a yellow spot as in the rest. Two large pods will follow, in which the seed, larger than the rest, of the size of the common bitter vetch, pale, round, rattles loosely in the pod if they are shaken when it is ripe. The root is larger than the rest and wrapped in many strong black membranes. It is divided into many bulbs also, but not into so many as the variegated and yellow kinds which in one year lay down five or six of these offsets. It blooms at the same time as the others.

I used to think that it originated of its own accord in England, and starting out around Bristol, I hunted it in vain in the field, because it was brought to us from there. But, I knew from Lobelius himself that it had been noted first at Bristol and had been dug up from the gardens in which it is there cultivated, then sent to London and given to friends. It is very likely that it was first brought here from Spain in Spanish ships which often visit here.

Lobelius himself described its form under the name of the Poets' Hyacinth in a very learned book of miscellaneous notes.

Ants are astonishingly troublesome on the flowers of all of them, but especially on those of this one which has a different sort of flower because, as I think, they sweat a kind of dew on the sides.

(Translated by Miss Mildred Dean)

TID-BITS 38TH

Balroudour

■ New fields of color, form and texture are opening in the iris world through the crossing of the bearded types, both dwarf and tall, with the weird and mysterious appearing oncocyclus group, the so-called cushion irises, whose botanical name, according to Dykes, is meaningless and no one knows why it was applied to them.

We have now had in our gardens for several seasons a series from Mr. Jacob Sass of crosses between onco-regelias, rather than oncocyclus species, and dwarf bearded. Henry Sass, who is hybridizer-in-chief for his father, selected a most insignificant little yellow dwarf for one parent because he knew what was in its background and Saturnus and others for the other parent.

These irises inherit the peculiar colorings and markings of their oncocylus parent. Of the series of five which have been put in commerce Balroudour has received the most admiration. It shows an unusual reversal of color combination in that the standards are of a beautiful blue tone while the falls are bronze.

It seems to have the best height and substance of the series, reaching eighteen inches. It is twin flowered, which is common to all of the series.

It is a plant of exceptional vigor and hardiness and soon makes a fine clump, blooming with the intermediates.

From Massachusetts

■ I have a fall bloomer, my own seedling, that has bloomed the past three years in the fall, Autumn Elf. Last summer, I had two stalks in July and three in August, as well as September and October bloom. This year, I had a lot of one-year clumps from single rhizomes set a year ago in June. I had profuse bloom from May 29 to June 20. On June 23, I noticed two stalks that would bloom in July, and on July 8, the first flower opened on one of these stalks. I have had bloom ever since—ten to twenty flowers out daily—55 stalks all told. I tried pollen I had in capsules, but it proved to be too old. However, the bees pollinated one and it must be a self. I have 75 seed pods on Autumn Elf I pollinated in June, which I am now harvesting. There are 8 stalks growing on Autumn Elf that will bloom the rest of August and in to September that haven't flowers open yet. I have quite a lot of

seed pods and flowers on the same clump. I divided a lot into single rhizomes and reset June 28, and 25 of these resets have bloomed and not died either. Mr. McKee has seen them.

We have had a wet summer here, with frequent showers. I have Autumn Queen and five or six other fall bloomers, with no summer bloom, under the same conditions. If you know of a good way to preserve pollen a month or so, I would like to know of it. I could then cross all summer whenever I feel like it. That is quite an idea. I really don't have time in iris season for all the crosses I should like to make.

I have seven different fall bloomers which I got last summer from Mr. Hill of LaFontaine, Kansas, and four which I got from Mr. Clint McDade the year before. I should get fall bloom in September this year. If I do, I will write in about it.

Mrs. Nesmith is trying to sell a few Autumn Elf and has it listed in her catalogue this year, but people won't believe there is good summer bloom unless they see it—anyway sales are a zero quantity. Miss Sturtevant sold a few last year for me. It takes a good rich soil with a little fertilizer to get summer and fall bloom. I raise dahlias one year, and the next have iris on the same ground. I use 4-8-10 fertilizer on the dahlias, as well as some manure, so that leaves a rich soil for the iris. I use coal ash to lighten up my clay soil and raised beds. I keep the iris growing by frequent shallow cultivation with a spading fork, an inch or two in the soil, and dust mulch, just as I do the dahlias. I have a garden at Westport, Mass., near the seacoast, and have had just as much and more summer bloom with Autumn Elf there. The ground is rich clay there but not as heavy as here in Barre. Mrs. Brown likes to hoe them so they get a dust mulch there.

I had a lot of other seedlings this year, but nothing remarkable, however, I did have some odd ones. One was a freak with a quarter of an inch wide standard, and falls with crinkly edges. I had several dwarfs from intermediates and tall bearded crosses. I had seedlings of Autumn Elf bloom and have seed pods on all of them. They were all different in coloring and time of bloom. Perhaps some of them have the ever-blooming habit of growth—I can't tell yet. If you come to Hartford next spring to Mrs. Kellogg's I hope you can come up to see my garden. Autumn Elf opens with Kochii, and the earliest I have, so it will be open June 1st. A plot of it makes a pretty effect, especially when only two or

three other kinds are out. My garden is at its best about June 12, as I am 1,000 feet above sea-level here and it is a cold late location. It is twenty miles from Worcester where you will probably go to see McKee's iris. He had a fine lot of Giant Dominions. I have been a judge this year and last, and have seen the best gardens with the other judges. I have seven hundred seedlings this year and half of them should bloom next Spring. Mrs. Kellogg had bad luck with rot this spring, but her garden has good soil and should be good next spring. Mrs. Nesmith had a wonderful display of Mr. Washington's seedlings, Maya and Lilly Pons, and many other fine sorts.

Miss Sturtevant had some nice light colored seedlings. Mr. Gage had a fine cream white, Creamilda. Mr. McKee's Red Comet is a fine red.

G. PERCY BROWN.

From North Carolina

On July 11, I planted a number of seed from my own crosses, and then went out of town, leaving the seed-bed in the care of my sister-in-law. Returning on August 8, I found a good row of *Tectorum Alba* × *Primavera*, and one of *Tectorum alba* × ?, all up at least one-half inch. Also one plant of Navajo × ? was up a full inch—the only one from 26 seed.

From 30 seed of *Marocain* × *Stewart*, planted June 30, one was an inch high. So far I have no others from this year's seed. I find *Tectorum Alba* a fine seed parent; it seems to cross more easily than the type. I had three pods of Emperor (Sib.) pollinated by it. Of course, I can't swear to this as they were not bagged, but I pulled off the falls of the flowers after pollinating them.

I have managed to cross *Albicans* with several varieties and hope to get something interesting.

Stewart is a faithful little fellow, both in blooming and in crossing with other varieties.

I had one pod on *Atroviolacea* (pumila) which disappeared, whether from natural causes or a too particular colored boy, I can't say.

Lieutenant De Chavagnac is another faithful one. He was bought last September, and gave two sets of bloom before Christmas, and this spring bloomed once with the dwarfs and again later. I have some seed, too, of it × Stewart.

Pumila Azurea has not given me any crosses either way.

I. chamaeiris (?) which I raised from seed, bought as *I. pumila*, refuses to bear seed, but was effective when used on Stewart and Bluestone.

I had two pods of *Emperor* × *I. verna*—the latter having refused to do anything before, but as I said, I can't swear to these—it remains to be seen what I get from them, if they germinate.

Frieda Mohr's pollen seems to be no good.

Kharput gave me a pod when pollinated by *Orange Queen* but all except five seed were lost.

Purple King sets no seeds, but I got three seed from *Tectorum Alba* × *Purple King*.

Zwanenburg will not cross either way.

Half the plants of my planting of *Zua* had smoother flowers. Is this a reversion, or a result of soil or weather? Or, weren't they all really *Zua*?

Will someone please tell me the difference between *Schneekuppe* and *Bride*? I suspect that one of mine is misnamed.

CICELY C. BROWNE.

North Dakota Iris Jottings

■ The iris blooming season is long past and yet there is no season of the year but gives pleasure to those who love iris, and who find joy in their culture. If it is not flowers, it is planting, and when that is done, there are the ripening seed pods. And, what a fascination there is about crossing, wondering, and dreaming of what one may get from his labors!

When one combines iris with the ordinary labors of a busy minister's life, it keeps one busy all the time, for there is always the delightful uncertainty about the time of the arrival of the bulletins, and just what they will contain, and whether or not in their pages we run across friends, old or new.

This summer Mrs. Jackson and I had the joy of a week along the Canadian boundary at Lake Metigesha in the Turtle Mountains, and even there, we found time to visit about iris and discovered a planting at Pilgrim Park. Then, one late afternoon, while hiking along the Lake shores, we found the tiny blue-eyed gress, *sisyrinchium augustifolium*, so you see there is no spot that an iris enthusiast cannot find something to interest him.

Concerning the blooming season this year here, the least said the better, as we only had 40 per cent bloom on our patch. In a recent letter from Henry Sass, growing iris under almost the same soil and drought conditions, I learn that they had less than 40 per cent bloom, so I do not feel so badly after all. In spite of the droughts of the past years, some of the iris outdid themselves and well repaid all our work and interest.

After almost losing *I. tectorum*, it came back and is doing nobly. Of the *Pogocyclus*, the only one to survive of my small collection, was Zwanenburg and how that did bloom! I thought it would bloom itself to death this year, and what a fine woodsy note it has here on the prairies!

My Siberians all came through but did not bloom this year.

Pluie d'Or, Indian Chief, Henri Riviere, along with a lot of others, had no bloom, but King Midas was very lovely with its fine color, and Snow Bound was very fine. Then, an unnamed Sass seedling was very wonderful, and our old favorite Fra Angelica, which does so well here, drought or no drought, did itself justice as usual. Coronation was very fine, and Laddie Boy was wonderful. Old Gold and Prairie Gold were fine this year, and all the yellows seemed to do their bit.

I have a little iris in a bearded that I do not find listed in the usual lists. It is called Beverley and came from Massachusetts originally. Here, on the prairie, it seems to feel right at home and its rather plain colors seem to blend in even with the brown of prairie years.

This year, after making numerous crosses, seed pods are the order of the day, and the first ones have been harvested. Oh, yes, we did reap a harvest of seed from the little *sisyrinchium augustifolium*, and they have already been tucked away in a little seed plot all their own. This year, I am planting my iris seed about ten days after it ripens—just giving it time to ripen and dry out a bit.

I learned one trick at the Sass farms that has been a help to me, and solves the problem of what to use in digging. I noticed one of the men digging at Washington, and he was using an old spring blade from a Ford car. And, how finely it does the job! I have quite a thrill out of it, and I know of no tool that is easier to handle. It lightens a task and does an A-1 job.

ELLIS L. JACKSON.

THE AMERICAN HORTICULTURAL SOCIETY

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THE AMERICAN IRIS SOCIETY

ALTHOUGH all readers of the BULLETIN are supposed to know that the annual dues of the Society are three dollars payable by the calendar year, it has been called to our attention that there is a chance that someone who is not a member may read your copy and wonder how he too may become a subscriber. If you happen to be such a reader, let us assure you that the Society welcomes to membership all persons who are interested in iris who feel that special knowledge of iris would be welcome in their gardening.

Make your check or money order payable to the American Iris Society and send to Mr. B. Y. Morrison, Secretary, 821 Washington Loan & Trust Bldg., Washington, D. C. Please follow this instruction. It will help us all in the record keeping.



BULLETIN
OF THE
AMERICAN IRIS SOCIETY

OCTOBER, 1935

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THE AMERICAN IRIS SOCIETY

FOREWORD

■ There has been a gratifying response to the Editorial appeals which you will see has been largely utilized in this BULLETIN. Our thanks come to each member. More reports will follow from members in later BULLETINS, so do not feel hurt if your own letter does not appear in this number.

The business BULLETIN will be ready for the printer as soon as the final Directors' Meeting for the year has taken place and should be in your hands in January, giving all the reports for 1935.

The present BULLETIN is the fifth you have received in 1935, so do not clamor too loudly for a sixth.

Plans for a BULLETIN featuring iris growing in the Rocky Mountain states are under way for the first issue of 1936.

B. Y. MORRISON, *Secretary.*

THE IRISES OF THE GASPE PENINSULA

EDGAR ANDERSON
Missouri Botanical Garden

■ In early summer the meadows of the Gaspé are mosaics of flower color. Hawkweed, daisies, buttercups, and Queen Anne's lace grow so thickly among the meadow grasses that the green slopes are powdered with yellow and white and orange. On the peninsula itself, *Iris setosa canadensis* takes its place in the picture and grows in such abundance that one can sometimes walk through iris fields for hours, or drive from one fishing village to the next between continuous seas of grey blue iris.

Coming from Quebec, one meets the species for the first time at Rivière du Loup and shortly thereafter it becomes the dominant iris all along the peninsula, though *Iris versicolor* still persists in quantity and keeps it company on the moister edges of its habitat. If a little brook runs down through a dry pasture, *Iris setosa canadensis* will cover the dry slopes and grow down almost to the brook itself and in shady or wettish spots in the meadow it will be replaced by *Iris versicolor*. The shores of the St. Lawrence give dramatic evidence of the great changes in sea level which have taken place since the glacial epoch. Far above the present channel ancient shore lines parallel the river in a series of bench-like terraces. Just beyond Rivière du Loup the road runs for miles at the foot of one of these. At the left the flat meadows stretch to the shores of the river, with a scarcely perceptible slope. Sometimes this lowest terrace is but a few feet wide; oftener than not it stretches away for a half mile or a mile, cut into thin ribbons by the weathered grey fences which separate field from field and farm from farm. Immediately at one's right the level rises sharply steeper than a barn roof, channeled here and there by streams coming down from the second terrace. It does in truth rise so sharply that from the road one sees only the immediate slope. When this is climbed another level plain presents itself, essentially like the first, sloping almost imperceptibly upward and bounded in the distance by another steep rise to an even higher terrace.

On the second plain the land is so level that it is often poorly drained and there among the alder swamps and in wet pastures

and firwoods, *Iris versicolor* grows in great abundance. But on the steep pitched hillsides that bring one down to the lower terrace, the situation is too dry for it, though quite to the liking of *Iris setosa canadensis*. So for mile after mile this latter species grows along the crest of the terrace, spilling down nearly to the roadway below when the slope is not too steep. Cattle and sheep keep the sparse grass closely cut but for the most part avoid the iris foliage, which grows thriftily in dense tufts, with the stiff husks of older leaves among the crisp foliage of the current year. While not nearly as large as *Iris versicolor* and with flowers less varied in color, *Iris setosa canadensis* makes much more of a showing in the landscape, for its flowers are raised well above the foliage. With their broad blue-veined falls and tiny inconspicuous standards, the flowers when growing have a flattish look, rather like smaller, less brilliant, Japanese irises.

For some years I have been studying variation in irises but never before have I had the good fortune to meet such quantities of material for observation. On the simple assumption that if current theories are true, one should be able to find evidence of continuing evolution in any group of plants, I have been going around the world looking as sharply as possible at variation in irises. On any theory of evolution the differences between individuals get somehow built up, in time, into the differences between species. That is to say that by one process or another the differences which exist between one plant of *Iris versicolor* and its neighbor are compounded into the greater difference which distinguishes *Iris versicolor* from *Iris setosa canadensis*. It is a convenient theory and if it is true, we should be able to find the beginnings of such a compounding going on in our present day species. For that reason I have studied such irises as I could get to see, in as great detail as possible, measuring iris standard after iris standard and iris fall after iris fall, sitting squat-legged with record book and ruler in mountain meadows, in cypress swamps, on lake beaches, and in English parks. The result is still merely a ten year's harvest of dry statistics, only partially winnowed and just beginning to shape itself into generalizations which permit of summarization and the building of a few new theories to test by other means.

I have found no other opportunity quite like the field from Ile Verte to Trois Pistoles. There for mile after mile one could

gather irises at will and assemble for comparison one hundred full-blown flowers of *Iris versicolor* and of *Iris setosa canadensis*, each from a different plant, but all from the same pasture, and picked on the same day and measured at the same time by the same person with the same apparatus. The result is, to ordinary eyes, a few pages of singularly dry statistics, but to the biomatematician a juicy morsel quite worth looking ten years to find.

After which rhapsody on the beauty of variation it must immediately be emphasized that *Iris setosa canadensis* varies but little in comparison with our other native blue flags. *Iris versicolor* in any New England pasture may produce ground colors all the way from mauve to blue and with hafts white or greenish or even sometimes quite a bright yellow at the juncture with the blade. *Iris setosa canadensis* by contrast is prevailingly uniform, its customary blue grey occasionally becoming a little lighter or a little darker or even a little more towards the purple, and its tiny petals producing odd variants in form and pattern, but presenting on the whole only a fraction of the variability of *Iris versicolor* from the same pasture.

The reasons for this uniformity are not far to seek. Its lower chromosome number is one, but a discussion of that and its bearings on the whole problem would be a treatise in itself. More important probably is the fact that by geological and biological evidence, *Iris setosa canadensis* is most certainly a remnant, a relict of what was before the glacial period a species widely spread in northern North America.

If we take a map and plot thereon all known occurrences of *Iris setosa* and *Iris setosa canadensis*, we shall find the former growing over a large area at the northwest corner of the continent, and the latter clustering in a fairly restricted circle about the Gulf of St. Lawrence, while in the great intervening stretch of territory, none of these irises has been collected. This is a characteristic distribution for plants which were almost exterminated from eastern North America by the continental ice sheet, but while managed to persist in the unglaciated areas about the Gulf of St. Lawrence from which center they have later spread. In Alaska the species itself, *Iris setosa*, is apparently quite as variable as our other American irises. Dykes speaks of the difference in garden behavior of the various strains he obtained from there, and I have had the same experience. Some are smallish, nearly

indistinguishable from *Iris setosa canadensis* while others are great rampant things almost like a cultivated Japanese iris. One supposes that before the advance of the glacier, *Iris setosa* grew commonly across the top of the continent varying as do our other irises, but that during the ice age it disappeared entirely from most of that territory, persisting practically unchanged in the larger unglaciated areas in Alaska and holding on, a mere dwindling remnant, in the small unglaciated areas around the Gulf of St. Lawrence. One can imagine it there during that colder epoch, growing as it often does today in cracks on dry rocky ledges near the sea. After the retreat of the ice sheet and the return of a less rigorous climate this remnant, *Iris setosa canadensis*, has multiplied and found its characteristic niche in the scheme of things but it bears the scars of the ice age so as to speak; and the lush and large-flowered types which once were probably present in the east were killed off during the long era of bad times.



Iris setosa canadensis by the water's edge

EFFECTS OF LIGHT AND TEMPERATURE ON IRIS OF KNOWN HEREDITY*

ADOLPH E. WALLER

I. INTRODUCTION

■ The results Garner and Allard (3) (4), published in 1920 have led to a great deal of experimentation in increasing and decreasing the period of exposure to light of a great many field, garden and greenhouse plants. The main conclusions of all of these tests confirm the general principle that plants are long-day and short-day. Irises belong to the first group blooming during an increasing length of light exposure. Laurie (7) and Poesch in a bulletin on photoperiodism give the results of their experience with iris, a minor part of a lengthy report dealing only with Dutch iris of the varieties Emperor and Wedgewood. To my knowledge no account of experiments with garden irises has previously appeared. In addition to the experiments mentioned above the works of Kellerman (6), Adams (1) (2), Maximov (8) and Tincker (11) are cited at the end of this paper and are recommended to readers interested in the subject of photoperiodism. As all of these contain lists of recent papers a little exploration will serve to acquaint the reader with a fairly complete and up to date account of the subject.

A brief reference to two plants that have been under our observation will illustrate the main principle of long and short day plant behavior. Poinsettia is an example of the short day type usually in bloom in December. By shading it can be made to bloom in summer. By giving it extra illumination it can be prevented from blooming during the winter months. Petunia is an example of a long day plant. Giving it additional light in winter will accelerate its bloom. We frequently have both of these plants on the same bench in winter under additional light with the result that the petunia flowers and the poinsettia grows vegetatively but does not flower. The simple comparison of vegetative or blooming states in plants covers a number of responses both in the physiology and structure of the plants. Pertinent results with soybeans and sunflowers and wheat should be consulted by the reader. Perhaps most striking of all are the cases of sex reversal and changes in phyllotaxy in hemp as illustrations of the far reaching effects of changes in light exposure. These are reported by Schaffner (9) (10).

* Papers from the Department of Botany, Ohio State University, No. 359. The photographs were all made by Dr. R. S. Gordon, of the Department of Botany, Ohio State Univ.



Fig. 1. Photographed December 15. One plant of each set. Set A in front, Set B, rear. Left to right the four clonal types are Pumila, No. 2, No. 126, and No. 108.



Fig. 2. Clone No. 2. Photographed January 12. Set A to the left.

II. MATERIALS AND METHODS IN THESE EXPERIMENTS

Garden irises available from the Ohio State University Botanic Garden were used. They had been under observation for several years and were all in sufficient quantity to furnish duplicate sets of clones. This was especially necessary as a full knowledge of species is not available from names. By using known clones the possibility of genetic variations were eliminated. Standard commercial varieties from the originators or from a reliable source would also furnish pure lines of the same types as those used. However, it was regarded as an advantage to have the materials best known to the experimenter and as these are seedlings of garden origin here they were chosen.

Each set was made up of the following four types: (1) An iris that was a typical *pumila* in having one or two flowers to a scape and with deciduous leaves. It corresponds closely to the known descriptions of *I. pumila* Linnaeus. (2) A seedling of a chamaeris type originated in the garden and in its evergreen leaf habit corresponding to *I. chamaeiris* Bertolini. This is designated in this paper as No. 2. (3) An iris a descendent of No. 2 and a tall bearded parent that is typical of a *germanica* in its habit of bearing four flowers on a scape, and its intermediate height. This is designated as No. 126. (4) An iris that is typical of *I. trojana* Kerner but is also a seedling of garden origin here and is with No. 2 the parent of No. 126. This fourth type is designated as No. 108. Of each of these types there was sufficient clonal increase to make up the necessary experimental material.

All along the 40th parallel of latitude, which happens to cross the Ohio State University campus, the blooming dates out of doors, varying somewhat with seasons and locations, for these four types in the order indicated above would be early April, late April, early May and late May. The object of the experiment was to discover what processes of development followed a treatment of increasing temperature and increasing light and what followed with increasing temperature without increasing light. For a part of the time the natural time of exposure was slightly decreased as the experiments started December 5th and then slowly increased. Because we first disposed of the set in which both light and temperature were increased, we can regard that as Set A. Set B without the increased exposure to light served as a check on set A.



Fig. 3. Clone No. 126. Photographed January 12. Set A to the left.



Fig. 4. Clone No. 108. Photographed January 12. Set A to left.

The additional light was secured from six nitrogen-filled filament Mazda lamps of 200 watts and 125 volts capacity. The lamps were strung from the top of the greenhouse at an average distance of four feet and 5 feet above the plants. Since the lamps were strung from the top of the room and no reflectors used the heating effect of the lamps was reduced to the lowest amount possible. The temperatures averaged around 60° F. during the day and 55° F. at night this still more reducing the effect of heating from the lamps. The lights were operated by an automatic clock switch turning the lights on from 6 P. M. to 11 P. M. giving the plants five hours of night-time illumination.

Both sets A and B showed some responses to increased temperatures on being brought into the greenhouse. Fig. 1 shows one plant, of each of the four kinds, which was typical for its set. From left to right they are Pumila, No. 2, No. 126, No. 108. Set B is in the rear row, set A in the front row. The differences in winter condition in the garden in Pumila and No. 2 a typical *Chamaeiris* are rather striking. This photograph was made December 15th, ten days after the plants were brought in from the garden.

Fig. 2 shows the bloom obtained on No. 2 in Set A. This photograph was made on January 12, 38 days after the plants had been brought in from the garden. Plants on the right are from the same clone and given the Set B treatment, increasing temperature without increasing light. Attention should be called to the fact that in this photograph appears the one unscheduled behavior of the group. One of the set B-plants is shown with a bud which later opened. It is the one irregularity of behavior of this clonal group.

For the same date No. 126 is recorded in the photograph Fig. 3. Set A is shown at the left. One plant of this set is in bud. All were in bud or bloom on January 19th. None of Set B bloomed. Fig. 4 shows the difference between Sets A and B for No. 108, for the same date. It is of interest to compare Figs. 2, 3, and 4 and to observe the regularity of adherence to the normal seasonal schedule out of doors that these three clonal types exhibit. None of them seem to have been disturbed by the transplanting operations and the spread of time between early vegetative development and bloomed, while somewhat telescoped is no more than would be expected from the continuous uni-



Fig. 5. Pumila. Set A to left. Photographed January 22. Neither set A nor B flowered.



Fig. 6. Clone No. 126. Photographed January 22. Set A to the left.

formity of environment that prevailed under the conditions of the greenhouse. In other words, the process that we have familiarly referred to as "forcing" under greenhouse conditions which is understood to mean more rapid development, is merely the result of eliminating the unfavorable effect of shifting temperature, light and water relations. For a record of growth out of doors of No. 108, the reader is referred to the work of Waller and McCormick, Bull. Amer. Isis Soc. No. 49.

The results of additional light for the *Pumila* are recorded in Fig. 5. This photograph was made at the same date as the three previously mentioned records, 38 days from removal from the garden. Its failure to bloom is not explained. Inferences that might be suggested are (1) that it cannot stand transplanting at this time, (2) contrary to the established opinion, its deciduous habit is not an evidence of better adjustment to low temperature conditions, (3) some other factor, not accounted for at present was unfavorable to it, (4) the sequence in applying control factors was unfavorable, (5) it should not be inferred that all *Pumila* irises would react in the same manner.

Fig. 6 shows three plants each of No. 126 on January 19th. All of Set A completed their bloom by January 22nd. One of Set B of this clone bloomed. The difference between Sets A and B remained about the same throughout the period of experimentation. Fig. 7 shows No. 108. Two plants of Sets A and B are shown as they appeared January 22nd.

Fig. 8 made on January 26th shows three plants each of Sets A and B of No. 108. Set A is at the left. The plants of Set A all bloomed by February 2.

It was at this time decided to continue the experiment by removing all of the set B plants to the extra light with the following results:

- (1) The *Pumila* continued out of bloom.
- (2) No. 2 gave no additional bloom. The pot which had bloomed erratically without extra light remained as inactive as the rest.
- (3) No. 126 gave bloom in two plants. These appeared February 24th.
- (4) No. 108 responded rapidly. By February 22nd when the experiment was discontinued all the Set B plants of this clone were in bud or in bloom. In all cases the appearance



Fig. 7. Clone 108. Two plants from each set. Set A at left. Photographed January 22.



Fig. 8. Clone 108. Set to the left. Photographed January 26.

of the scape and flowers was more nearly normal than in any of the previously bloomed flowers of Set A. The scape showed no twists as seen in Set A of this clone January 22nd, Fig. 7.

INFERENCES

The inferences and comparisons obtained from this continuation are possibly the most valuable part of this experiment. From the behavior of the plants I think we may justifiably infer that the operation of these factors is interrelated. As in a combination lock, the turus must be in sequence to open. Increasing temperature without increasing light was not favorable to blooming in No. 2 and No. 126. It was favorable for No. 108. Moreover in the cases of No. 126 that did bloom the blossoms appeared after what would be regarded as their normally allotted period of exposure. The fifty nine days of exposure to increased temperature with only a limited increase in exposure during the entire perior to slightly longer days was not favorable to flowering activity.

The inference from the behavior of No. 108 of the B Set is that exposure to increased length of the day is better suited to flowering activity after a prolonged exposure to increasing temperature. This fits with the normally developing season out of doors and accounts for the lateness of the tall bearded irises.

Another inference of genetic significance is that hybrids between *Chamaeiris* type irises and *trojana* types would produce offspring that behave irregularly. This seems to me to offer an explanation of the *remontants* or autumn flowering types which after a florally inactive season during normally long light days become active with decreasing length of day and decreasing temperatures. The conclusion is that hereditary and environmental factors are involved.

SUMMARY

Four clonal types of bearded irises, two dwarf and one intermediate and one tall were used for comparative behavior under controlled length of day and temperature.

Those receiving increased day length and increased temperature bloomed in sequence as it occurs in the garden.

Those receiving increased temperature without increasing day length did not respond in the same way.

Those which after a protracted period of increased temperature were then given greatly increased day length responded differently for the different clonal groups.

The conclusion is that for all groups indicated the behavior with respect to seasonal changes is dependent upon both hereditary and environmental factors.

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SOME NOTES ON GERMINATION

JOHN DOLMAN, JR.

■ The publication of Dr. Essig's article on iris breeding in the BULLETIN for July, 1934, suggested the need of similar data from other sections of the country, and of a little closer observation on the part of all breeders concerning the conditions governing germination. I hope that the notes which follow will contribute, in a very small way, to the accumulation of such data.

The region in which my garden is located (southeastern Pennsylvania) is very different in soil and climate from that in which Dr. Essig made his observations. Our soil is a heavy loam with a clay base, and is much more acid than western soils. Our annual rainfall is heavy, with great heat and humidity in the summer, early fall rains, very changeable winters with much freezing and thawing, and cold, wet springs.

I usually gather bearded iris seed early in August, dry them thoroughly, plant them in September, and expect no germination until the following spring. The germination then (provided the seed have been well covered and have not heaved out) is ordinarily very good—so good that I do not bother with second-year germination. I have tried the latter, but have found that in my soil very few seed that do not germinate the first spring germinate at all. Very few, in fact, can be found; they either germinate at the normal time or they rot. Practically all that do germinate do so between April 1 and May 10, the great majority between April 10 and April 25.

Because of the short summers and the winter heaving we seldom get bloom here on seedlings until three years after crossing the pollen. A few old plants bloom in two years, but usually with weak, undersized stalks (unless planted in cold frame); and many do not bloom for four or even five years. That puts us at a great disadvantage as compared to the California hybridizers, who can get good bloom in two years. Dr. Essig's remarks about the viability of seed taken from green pods, together with some of the observations reported by Mr. Gottschall in the BULLETIN for April, 1934, made me wonder whether I could speed up the process by planting earlier and trying to get some germination in the fall.

In 1934 I planted my seed on August 12, about six weeks earlier than usual, keeping a careful record of each cross, the exact number of seed planted, and their condition. Because of the early date the condition varied considerably. Some seed, harvested from the first pods to ripen, were dry and wrinkled. Some, after drying, had become mouldy, as they often do in our damp climate. Some were brown or yellow, but still fat and unwrinkled, while others were pale, moist, and immature, having been taken from very green pods.

The first seed germinated on September 2, twenty-one days after planting. They were from Primrose by mixed pollen, and had been very unripe when planted. Before the end of September this cross had germinated 13 per cent. One other cross—Flambeau by mixed pollen—also germinated 13 per cent, but the seed of that cross had been dried early and had become so mouldy before planting that I had considered throwing them away! Altogether, only .75 of 1 per cent of all the seed planted germinated in the fall. Of the crosses that germinated some seed in the fall, 5.3 per cent germinated. But there were only eight crosses that showed any fall germination out of a total of fifty-nine; and in five of the eight the seed had been planted green or unripe.

The low percentage of fall germination would seem to show the futility of early planting in this locality, particularly as more than half of the fall-germinated seedlings heaved with the frost and winter-killed, and all would have done so but for frequent rescue. The few that survived grew very slowly in the spring, and were soon dwarfed by the spring-germinated plants in the same rows.

On the other hand, the comparative results would seem to show that if you want fall germination you can get it better from unripe seeds than from ripe ones.

For spring germination, however, the ripened seeds appear to be better. My tabulation shows that dry and nearly dry seed stood the winter better than green ones. Not that all the green ones rotted; far from it. One cross, planted very green, germinated 57 per cent in the spring; another germinated 51 per cent. A cross planted in semi-mature but unwrinkled condition germinated 80 per cent, and several others 76, 59, and 58 per cent respectively. Nevertheless, the spring germinations showed a heavy advantage in favor of those seed that were fully ripened and dried before planting, and against those that were excessively unripe. The total percentage of germination, including both fall and spring, was 39

for moist and unripe seed, as against 51 for mature and nearly mature seed.

The most startling result was that from the seed that had gone mouldy, no less than 73 per cent of which germinated. However, as many of the mouldy seed came from one particular parent (a seedling blend of my own, the seed from which germinated 90 per cent), I am inclined to credit the viability of the seed from that cross rather than the condition of the seed. In fact, the principal point demonstrated by my tabulation is that there is far more variation in fertility with the different crosses than with the condition of the seed. As every breeder knows, there are some crosses that just do not germinate, and others that can hardly be prevented from germinating.

The only conclusion I can draw concerning the proper condition of the seed is that it should not be *too* unripe. At the same time it is encouraging to observe that a cherished pod broken off too soon need not be considered a total loss, and that seed that has gone mouldy need not be thrown away.

My tabulations are too lengthy to offer for publication, but a brief mention of the crosses that gave the highest percentage of germination might be of interest. They were:

Seedling 21 (blend) × mixed pollen	95%	(Seed mouldy)
Magnifica × Grace Sturtevant	83%	(Seed dry)
(Alcazar × ?) × Romola	81%	(Seed ripe, but not dry)
King Tut × (Iris King × ?)	80%	(Seed not dry)
(Alcazar × ?) × Andante	76%	(Seed not dry)
Amanecer × ?	75%	(Seed dry)
El Capitan × Moonlight.....	68%	(Seed nearly dry)
Andante × (Alcazar × ?)	64%	(Seed dry)
Dauntless × Grace Sturtevant	63%	(Seed nearly dry)
Amanecer × Cavatina	62%	(Seed nearly dry)
Bruno × King Tut	60%	(Seed unripe)

Many crosses gave fewer than 10 per cent germination, and some did not give any. It is worth noting, however, that some of these were crosses which in other years had given good germination, suggesting the presence of unknown factors that affect the percentage, but affect it differently for different crosses. It will be interesting, if possible, to run these factors down.

VARIATIONS OF THE NATIVE OREGON IRISES

CARL STARKER

■ The amount of variation in the native Oregon irises is really surprising. *Iris tenax* which is the common wild iris of western Oregon and Washington seems to vary to some extent according to the type of country in which it is found. In the Willamette Valley the prevailing color is a clear lavender more or less conspicuously marked with a white or yellow and white signal patch down the center of the falls. The color varies somewhat from paler to darker, but the main tone remains the same. In the foothills of the Cascade mountains there is a reddish tone to the blossoms so that they appear orchid, while near the coast the flowers become darker, verging on purple, and the foliage is deeper in color with shorter, narrower leaves.

These local variations, however, by no means exhaust the color range of this truly lovely plant. I have in my garden several plants which bear pure white blossoms of great beauty with a wide yellow signal patch down the center of the falls. Another lovely sort is marked with light blue veins on a white ground which gives the flower a definitely bluish, not purplish cast. Beside the white forms, there are creamy flowers marked with yellowish veins, and tawny buff blossoms more or less deeply veined with lavender. There is of course a whole range of plants that run the gamut of lavender and mauve. Beside this there are the gray flowers and a superb deep purple with a conspicuous white signal patch.

Iris Douglasiana presents a very great variation in size of plant as well as in the color of the flowers. I have plants which grow more than three feet high and others which never exceed twelve inches. The size of the blossom seems to vary very little according to the size of the plant, but in my experience the dwarfer plants do not produce anything like so great a range of color variation as do the taller ones.

The blooming season of the various color variants seems to be more widely separated than is the case with *Iris tenax*. I have a rare and very lovely pure white form which blooms very early, even before *Iris tenax* begins to flower. This is followed in a week

or so by a deep purple sort which is a little earlier than most of the *Iris Douglasiana*. Then there is a fine sort with a much frilled lavender blossom which comes on quite late after all the others have finished blooming.

Some types of *Iris Douglasiana* are not so desirable as others for garden plants because the leaves are so large and luxuriant that they detract from the beauty of the flowers and make a rather gross looking plant. This is not true of the white variety, however, and it is possible with a little care in selection to get fine plants of very great garden value in a wide range of color.

Iris innominata, too, varies both in size and in color. I have short stemmed plants with foliage not more than three inches long, and longer stemmed sorts with ten-inch foliage. The yellow forms vary from a very light creamy yellow more or less heavily veined with brown to a deep orange self color which is to my mind the most beautiful form. Some types are much more ruffled than others. There are also lavender and purple sorts, but these do not compare in beauty with the yellow kinds.

There seems to be no rhyme nor reason to all this variation and so far as my experience goes they do not come true from seed. At a recent flower show I saw a vase full of *Iris innominata* blossoms which came from plants raised from a single seed pod. The mother plant was deep yellow, and the seedling plants varied from cream to deep yellow, and there were two fairly dark lavender blossoms in the lot. The seed of white *Iris tenax* which I sowed a few years ago produced a number of lovely tawny blossoms a few lavender and one quite deep purple, but no white!

It seems to me that there is a change for a good deal of experimentation along this line. I have wondered whether the fact that the plants vary so greatly from seed is due to an inherent variability, or whether it may be due to cross pollination with flowers of other shades. I hope soon to find out whether this latter fact will account for the difference. My white *Iris Douglasiana* blooms so long before any of the other types of irises are out that its seed must of necessity be self fertilized. I have sown some of this seed and have small plants which I shall watch with great interest until they bloom.

Jennings Lodge, Ore.



Lilian A. Guernsey

Iris innominata

IRIS PERSONALITIES

THURA TRUAX HIRES

■ Nashville, the Iris City! What magic those words possess, bringing to us the memory of beautiful approaches to the city where irises bank the highways, filling the air with perfume; of angles where busy streets meet in which a few feet have been set aside where they can flaunt their gay beauty. Driving down from Lexington the Sunday morning before the Annual Meeting I found myself watching for these plantings and marveling at the fine irises used. Not the old *Honorabile* and *Flavescens* of the farm yard but real aristocrats, mostly unnamed seedlings, I fancy, from Chancellor Kirkland's and Mr. Connell's gardens.

Sunday afternoon Mrs. Connell and I drove out to Dauntless Hill, Mr. Connell's sanctuary in the hills. No need for me to tell of this lovely place as wherever I went after leaving Nashville I found its beauty had been blazoned by those fortunate people who had attended the meeting. There was only scattered bloom in the Iris garden that afternoon but within a few days the warm suns waved wands and lo! it showed its beauty for the party. The garden at Dauntless Hill has been carved out of the side of the hill so that one looks down upon the irises from the house. They are backed by magnificent cedars, so tall and stately, with roses to dip and sway from bark trellises, tumbling down in gay cascades to mingle with the taller irises. *Blithesome* is a beauty, quite the same coloring as Col. Nicholl's *Sunmist*, but giving a different effect. The standards are open, the falls flare, being set off by a brilliant yellow beard. The substance is heavy, the flowers having the beautiful finish of cream luster. *Parthenon* was a joy to behold, such a gorgeous white, of equal fine form. The cupped standards slightly ruffled, the falls flaring widely, each flower so perfect and lighted from within by its golden heart. It increases rapidly and is very free flowering so a mass planting is a beautiful sight. Great clumps of *Selene* bloomed in such purity against the dark green of the rose foliage one could well see how suited her name. I was sorry—and yet glad—to find her doing what she does with me, folding her falls tightly back toward the center. Sorry, because the standards are so perfect one wishes the falls as fine—

glad, because Mr. Connell and I had exchanged rather caustic remarks back and forth about her behavior. Always she had behaved so for me, never before like that for him. Was it because I was there? Had I cast a dark spell? Is it a matter of soil or of the atmospheric condition at the time of bloom? Who can say? Here, and now, I wish to apologize publicly to Mr. Connell for what I have said to him privately about Selene's bad habit, as two weeks later I was to find her at Mr. Grinter's with petals unfurled to the breezes, as perfect a beauty as one could wish, so at last I knew how lovely she must have been at the first blooming. Nevertheless, I was amused that afternoon when from looking at Selene "the despised one" Mr. Connell faced me about toward Parthenon and said "Lady, here is my apology." At last I knew I was forgiven! In the orchard he had scattered bloom from the seedlings but not what he should have had from the planting that is there. A fine blue, and a much redder Dauntless were two finds of the year. Dauntless, itself, in the garden was stunning. Only once had I seen this planting equalled and that in Mrs. Kellogg's garden where, when it was first introduced, it was better grown than I had seen it at Nashville the same spring.

Monday and Tuesday I spent becoming acquainted with the new seedlings at Chancellor Kirkland's and renewing my friendship with those named beauties I had met first as seedlings. How I blessed Mr. Connell for his suggestion that I travel down early to Nashville thus to have a few quiet days before the meeting. Seeing a long row of Hermitage, which I had liked so much during its early blooming, and to know its beauty, for me, has not been dimmed by newer introductions; to see a long row of Violet Crown in full bloom, where before I had known it only as small specimen clumps; to meet for the first time such personalities as At Dawning, Magnetawan and Copper Lustre; all this was a dream come true as, for five summers, I had dreamed of returning to Nashville at Iris-time. This time it did not rain as during my visit in 1930! The sun blazed, it beat, it scorched, but what cared I that my neck was burned so that cool pillows felt like hot cinders. I was to see lovely irises in many gardens during the days to come. How sad it is to be able to spend only a few short hours with new seedlings and to flit about from garden to garden trying to crowd into these hours all one should have

days to absorb. To see them at the dawnlight, under the midday sun and when twilight shadows throw their spell across the garden; to live with them in all sorts of weather is the only way to know them and to how few of us is this possible until the new have become the old.

“Which do you think the Chancellor’s best seedling” Mr. Connell asked me that first evening. “Junaluska,” said I. “And which the second?” “Violet Crown.” “You pass,” said he, “they are my choice.” Two days later I tried this game with Dr. Everett and was thrilled when he gave the same answer. I like what I like because I like it, but it is grand when others like what I like!

Copper Lustre is a decided break in color. It is a glowing copper of fine form and finish. The standards are cupped, with a green gold midrib that has the strength we look for in the modern fine introductions. The falls are semi-flaring, having a slight gold line through the blade; the reverse is green gold which, with the narrow deep yellow beard, helps to give the flower the golden shimmer that is one of its attractions. The flowers are large and have the necessary substance to last well through any weather as was proved this spring. The 36-inch strong stalk is high branched, carrying five blooms beautifully placed. With it I should like to grow a tall, very pale lavender seedling of the Chancellor’s named Twilight Blue. This is a seedling that has all the many good qualities we are looking for in the blues—fine form, smooth finish and very heavy substance with a perfect stalk. One afternoon I broke a flower to try the effect with Copper Lustre and left it in the clump caught in the branch of a stalk. The following afternoon Mrs. Ketchum and I passed that way and found the bloom of Twilight Blue as crisp and fine as when broken from its stalk, showing what exceptional substance it has, as the day had been a torrid one.

The Chancellor has been elevated to the ranks of plant wizards! I can prove it. Sitting on a bench near Copper Lustre while the bloom of Twilight Blue was caught in the stalk I overheard a visitor commenting on the irises to her friend. “See, this is the new Copper Lustre,” she said, pointing to the clump. “Isn’t it pretty, and how big,” was the friend’s reply. “And they say it sells at \$30.00, do you suppose that is because he has made two colors bloom on the same stalk?”

Junaluska is one of the copper race, with flowers borne on widely branched slender stalks that sway but do not bend. The domed standards are bronzed copper, the falls bronze red. It has most beautiful form and finish having all the glow of living fires—a very stately iris. Violet Crown, a gorgeous heliotrope self of quality, was stunning growing in a mass near a soft blue. I should like to try it with Gleam, possibly both planted in front of, and a short distance away from kolkowitzia, which blooms at the same time as the irises. Cyrus the Great is a very dark blue with semi-horizontal falls, graceful and yet giving a feeling of great strength. The falls are very wide at the haft which is flushed brown; the beard dark, deep yellow; substance fine with a smooth texture. The stalks carry three branches, beginning below center, the average height being 38 inches. Strolling through the field one day the Chancellor was speaking of the characteristics of the different seedlings. As we stood near this iris we noticed a stalk several rows away that towered above its neighbors. The Chancellor said “That is Cyrus on a horse.” What a difference a few yards make sometimes. Evidently there was some food in that particular spot that Cyrus liked and he had mounted his horse to survey himself in other places.

Aztec, Ojibway, Orillia, Timagami and Yucatan all belong to the copper group but each possesses some characteristic that gives distinction. Timagami is more rosy than Magnetawan. It is an early bloomer and is on the wane when Aztec comes to full bloom. The standards are a beautiful golden tan flushed rose, the falls a deeper rose coloring with a velvet finish. It is very fine. Ojibway is taller, the flowers of medium size borne on a high branched stalk. The standards are copper tan, the falls rose copper with much yellow underlay. The effect of the falls is that of coral velvet. The flowers are of pleasing shape, the standards cupped and the falls flaring, beautifully rounded. This will make a glowing garden clump. The standards of Orillia are more of a golden tan than those of Ojibway, while the falls seem a bit brighter, this due, possibly, to the flecks of gold running through. Yucatan, which is the latest of this series to bloom, does not have the depth of copper tones shown in the others. The arching standards are pinkish tan and are slightly ruffled, the falls droop but are not straight hanging, and have a heavy

gold haft. It is rarely beautiful and is to have for a companion in my garden the Chancellor's "Red Sir Michael" a seedling that is brighter and richer than Sir Michael. At Dawning is a beautiful blend, the flowers so well placed on the stalk that, though three are open together, none touch. The standards are a cool lavender on a soft yellow ground, the flaring falls of rose, all petals having a gold edge. An iris of the Isoline color group it possesses a rare charm which is aptly suggested by its name. Pink Glow, a fascinating blend of violet, rose and coral, with a yellow undertone which shows through the yellow brown wash of velvet on the flaring falls, is another of these lovely new seedlings greeting the visitor to the Kirkland gardens. You will all long for it as much as I when you see it!

At the center of the field were the seedlings blooming for the first time this year giving promise of the glory they will be next season. One, a yellow which was called Gazi is registered as Padishah. It is a pure rich canary yellow self, the flowers large and of pleasing form, lighted by a gold beard. It possesses a luminous quality that adds to its distinction. There were three blooms open, so well spaced one could see clearly the outline of each, the slender stalk being quite adequate for their support, yet graceful in itself. Without a doubt this will take rank with the finest of the new yellows upon its introduction. Another yellow bloomed much later, too late for the visitors at the meeting of the Society. This is 35-4, a Coronation \times Dykes seedling. It is as large and as finely formed as Padishah, the standards a clear creamy yellow, the falls of the same tone but washed on the blade with deeper yellow. The falls flare almost horizontally; the substance is that of a magnolia petal with a smooth satiny texture. The buds are most interesting showing a minute maroon line on the edge of the petals which disappears as the bloom unfolds. This is my favorite of the two yellows, though I long for the day when I may grow both.

Toward the end of my visit a long row of Blue Banner, giving the feel of a blue sea, impressed me with its landscape value. Such an even tone of clear medium blue, and so free flowering, it gives a fine mass effect. Then there was Beacon, a small bright yellow so useful for lower clumps toward the front of borders. During the two weeks I spent at Nashville I had a part of each day in this garden, with the exception of three when

we went to Atlanta, thus being able to see the seedlings under many weather conditions—hot suns—cloudy days—beating rains—winds, and was impressed with the uniform high quality they possess. They have vigor, fine color and a finish of form and texture that bears witness to the standard he has set for them to attain before he is willing to even carry them over to a second blooming season.

Mr. Washington had a fine yellow blooming for the first time. It was tall and clear and of fine form. It opened just in time for the meeting and on that day, though I tried several times, I could not get near enough to it to make a detailed description, so popular was it with the many visitors. A few days later I returned to this garden but the blooms were gone. A stately white was another greatly admired during these days. This is, I believe, one of Mrs. Nesmith's seedlings. Mme. Recamier, a tall yellow-pink blend, is a very free blooming variety bright and valuable for the garden picture. The standards are of a soft yellow undertone, heavily flushed pink, giving a soft pinkish tan effect; the falls are of the same coloring but deeper with a blue tint below the beard. The slender stalk is high and widely branched. Pink Butterfly is another pink blend, the center of the standards tan yellow with a heavy lavender pink flush toward the edges; the falls are a lovely strawberry pink with a heavy lavender pink flush through the blade. Dawning Day, another aptly named variety, is done in tones of fawn yellow and pink which will make a very bright light in the garden. All these pink toned blends should prove effective with the reds. Glint o' Gold is a tall yellow, the standards a clear canary while the falls of the same hue are washed brown across the blade, very evenly, which gives a burnished light. There was a large planting of Mary Geddes in one of the connecting gardens very brilliant in the sunlight, each blossom showing the fine quality that has made it famous. Jeb Stuart ranks high amongst the finest of the more recent introductions and should be as great a favorite ten or twenty years hence as it is today. Though it is called a brown red my memory picture always sees brown. It is rich and must have much yellow in its pigment as it glows as do some rich golden brown velvets. Brilliancy is added by the rich gold of the beard which adds intensity to the coloring in the falls.

Mr. Washington's Apogon hybrids were blooming before I left

so I was fortunate in seeing the fine blue Eska Holt, Mary Love an enchanting orchid pink, and a number of other beauties that will bring much grace to our garden pictures as soon the gardening world becomes aware of their value. It is a pity they could not have been in bloom ten days earlier as so many had been looking forward to seeing them.

Mr. and Mrs. Williams have a charming garden that covers acres, or rather should one say a series of connecting gardens. Their home, a few miles out of Nashville, is on a low hill shaded by magnificent old trees. Here, within two years, they have built gardens that give the feeling found usually only in those of many years growth. A long walk leading back between rose covered trellises connects the house with a quaint tea house where unexpected stairs lead up to an overlook from which one can look off across the gardens. These are to either side of this center walk, one planned to be a "courtesy garden" where breeders may send their seedlings to be grown and judged, feeling they will have the best of care and also be seen by the Southern judges. In the other garden is planted a general collection of the finest irises to be had, while beyond this is a smaller garden in which the Fall Blooming Irises hold sway. The gardens are built on virgin soil where the plants are splendidly grown.

In this garden Col. Nicholls' Sunmist was as fine as I recalled it to be at Ithaca and as greatly admired as it has been in mine for two seasons. It is an entrancing cream-toned beauty, heavily overlaid yellow giving an iridescent gold light. New, to me, was Itasca, Dr. Kleinsorge's rich deep purple seedling. It impressed me as a very fine iris of pleasing form and a splendid doer, as there were six stalks on the one year plant.

Mr. Williams has joined the ranks of hybridizers and seems to be going places, judging from the seedlings he had to show this year. There was Brentwood, with arching standards and semi-flaring falls, to join the "reds." Chinook, a white of fine form enriched by iridescent gold lights, the arched standards and flaring falls with uptilted tips giving it an airy grace that was most pleasing. Late blooming was Brown Mahogany and I was sorry it could not have been in bloom at the time of the meeting. Here is another color break as it is truly what the name indicates — brown mahogany. The standards cup and the falls flare, the styles the same self-color, the beard dull

yellow brown. The flowers are carried on tall wiry widely branched stalks. The only criticism anyone could make would be that the falls are a trifle too narrow for the standards, but who would be so hypercritical over such a minor point. There was a French blue seedling, 51-A, which is very fine. It is a self with a heavy lavender purple flush at the end of the beard and a solid brown-toned haft. This season I have seen several new irises that show a deepening self-color, or complimentary one, at the sides or end of the beard and find them most distinctive. Others were Ozone and Creole Belle. 210-A is a medium grey blue self with ruffled standards and falls as horizontal as those of Rose Dominion, with a dull gold haft. This, too, is very fine.

I had intended leaving Nashville May 6th so as to have ten days in southern Missouri and Oklahoma before the Iris Show at St. Joseph at which I had been invited to be one of the judges, but my host suggested I go to Atlanta for the flower show instead. As this would give an opportunity to see the late bloom at Chattanooga and a longer time at Nashville with my friends and the irises I rearranged my plans, knowing I could visit the other friends when irises were not in bloom.

During the days of the meeting many of our members had told me of Mr. and Mrs. McDade's beautiful garden and I had gathered interesting tit-bits about the irises therein. I had wanted to go there very much, indeed, but had become very tired of driving by the time I reached Nashville and felt I could not possibly give that steering wheel another twist. A golden opportunity had slipped by as Mr. and Mrs. Armstrong and Mrs. Benners had driven down there the day before our gathering and the latter told me they had called every hotel to try to locate me so I might share this pleasure. I did appreciate this thoughtfulness and was sorry not to have been with them, as I should have enjoyed a longer visit with them and also have seen some of the newer irises I missed elsewhere. But there are always compensations and Mr. Connell and I saw several very interesting novelties.

This garden is very lovely, old box dominating the picture, with beautiful trees, shrubs and rare plants as foils. Jean Cayeux, a study in golden tan, brightened with the lavender flush on the blade and a brilliant blue touch at the end of the beard, was very interesting. President Pilkington, of which I

had read much, but had not seen, impressed me greatly. It is a warm blend of pale lavender and tan gold with deepening tones on the blade. Golden Flare is a charmer with flowers of medium size. It has a certain style and finish that gives it an aristocratic appearance. Very gay coloring, this, pinkish yellow and peach with a deep narrow orange beard—one to weave into pictures. Then there was Ozone, one of Mr. Jacob Sass' new introductions. Mr. Connell and I decided it was the one blooming in this garden we most wanted to grow in ours. The flowers are nicely rounded, of fine substance and well placed on 36 to 38 inch stalks. Its color is a very even lavender violet with a beautiful sheen, set off by the heavy brown haft and deepening self-color at the tip of the pale beard.

The Atlanta show was an interesting one and covered much space, including as it did six large gardens, eight or more flower shops, arrangements and shadow boxes, tables, and sections for peonies, roses and irises. We were quite surprised at the number and quality of the latter as the season should have been too far advanced for any but the Apogons. A great pleasure for me was our visit with Mr. Graham, whom I had seen at Nashville only from a distance so much was he in demand. We had much iris talk and found a further common interest in the roses, one of the highlights of the show.

Leaving Nashville I drove west to Huntington and then north to St. Louis. This section of Tennessee is a treasure house for the searcher of Old Roses and I should like to make a leisurely trip through there in the fall as Mr. Morrison and I are off on a regular rose spree. In a cabin dooryard in Georgia we had spied one that had been used as a hedge. The flowers are very small, quite like those of the wild blackberry, and are in clusters. One traveled home with me and "Mammy" told me that if it did not live she would start some for me, saying "My mammy always told me I had green fingers." Green fingers—what could be more expressive than these words for those fortunate gardeners who have magic in their touch. A two days' drive from Nashville through southern Illinois to St. Louis and then northward across the state took me to Independence and the Grinter's hospitable home. I had thought Missouri a flat state, except for the Ozarks—my visual knowledge of it previous to this trip having been limited to St. Louis—and was happily sur-

prised at the beauty of the rolling hills and wooded stretches through which the St. Louis-Kansas City highway passes.

Mr. Grinter's seedlings were just opening when I reached Independence and so much had I looked forward to seeing them that days, and not the hours I had planned, were spent enjoying their beauty. Mrs. Grinter was judging the show at Kansas City the following forenoon, a most interesting one exceptionally well staged. After an enjoyable lunch with the Show Committee and the judges we started for St. Joseph where judging was to take place late in the afternoon. We started in a slight shower which turned into a torrent before we covered the fifty odd miles, arriving to find the committee wondering whether they would have even one judge as Dr. Everett had found he could not get there and I was "lost" somewhere between Nashville and their show room. We had intended driving back to Independence that evening but it continued to pour so we were very happy to accept the gracious invitation of Mrs. Callis to be her guests over night. The following morning we enjoyed a walk about her garden which is an extensive commercial one to which has been given the charming name "Wild Rose Iris Garden" in memory of her childhood home in the Ozarks, where the wild roses bloomed. The garden is very well planned and contains the finest of the older varieties together with an interesting planting of the novelties. To meet Mr. and Mrs. Byous, who have done so much to make their Iris Shows outstanding amongst the fine ones of the mid-west, was a great pleasure. Also to be welcomed by Dr. and Mrs. Schirmer, Mr. Carl Schirmer and Mr. McBride and taken into their circle of iris friends made it a Red Letter day for me. The South Side Garden Club's Year Book for 1935 is before me as I write, one of the most attractive I have seen, which tells me that today—July 15th—they are having a meeting in the garden of Mr. and Mrs. Mitchell and that Mr. Byous is talking on "Big Bug Hunt in the Garden." Could he but see the Japanese beetle here!

We have a host of fine dark irises but none more beautiful than Wotan, Mr. Grinter's dark gift to our gardens. It has most gracefully formed flowers, cupped standards and widely flaring falls. It is one of the "smoothest" irises I know, the texture so close, with a luster found in rich satins. Deep blackish royal purple with a brown tone in the haft and no reticulations showing, the flowers impress one with their fine groom-

ing. The buds are very black giving promise of the glory that is to be. I rated it well in the 90s. There was a gold seedling that impressed me very much. The standards a deep gold with a green midrib, tipped and flushed maroon, giving a bronzy pink effect at the tip—the Elsinore type of color placing—the flaring falls the same gold but lined maroon when first opening, these lines fading out within a few hours, leaving the effective gold tone only. The slender stalks are widely branched and carry eight and nine blooms. Another, 19-33, is a beautiful brilliant red self, the velvet falls giving a bicolor effect. It is of fine quality, the standards cupped, the falls flaring, and from a distance becomes a glowing crimson flower. Planted with the Gold, 36-33, it would be most effective. For several days Mr. Grinter and I had friendly arguments over our two favorite combinations for color amongst his seedlings. His was a lovely yellow with a blue that so far had not opened, and mine this red and gold. I felt I had the best of it until his blue opened and then had to agree that it made an equally fine color group—though not better! A small glowing rose red seedling that should join the ranks of fine Table Irises is 16-33. The slender 26 to 30-inch stalk carries four flowers of fine substance. There were two very pleasing blends, one a glowing golden fawn, the falls having a heavy blending of pink with the gold, with a deeper splash on either side of the blade at the tip of the beard, while a deep gold edge intensifies the gold of the standards, is numbered 32-34; the other, 35-30, has clear deep primrose standards, with falls the same tone with a soft lavender-pink overwash. For a taller arrangement this will be as useful as Cameo, of the same general tones, and as pleasing in its effect. A cool citron yellow self with a beard but slightly deeper, with blooms of medium size, has an allure that drew us back again and again. The slightly wavy petals have an unusual transparent appearance which caused it to look frail, but the very close heavy texture belied this and it held well through rain, sun and a very sudden drop in temperature.

A large clump of Classic seen with the sunlight shining through the petals was glorious; really a glorified Asia. It is quite easy to understand Mr. Cooley's feeling when he saw it blooming here. I have heard adverse comments about it and wonder if those who have criticized it have seen well established plants. Or is it a regional iris? The stalk is heavy of good pro-

portion to its height, high branched with two blooms open at a time. The color is deeper and more intensified than in Asia. The standards are arched, the falls flare, the flowers of fine quality. An iris for a sunny day, for a special place in the garden where in the early morning and late afternoon one can see the flowers with the sun behind them. Then the petals take on the glowing colors found in a rose purple orchid, while the soft blending of yellow seems to catch and reflect the light of the sun.

Blue Triumph and Missouri were not blooming in Mr. Grinter's garden but we found the former at Miss Stoner's and the latter was blooming in the Whiting's garden at Mapleton, Iowa, two weeks later. Both are fine, the former a heavenly blue self, possessing all the fine qualities Mr. Grinter intends his introductions to have. Missouri is of equal quality but of different form and with a deeper flush on the blade.

We spent a part of two days with Miss Stoner at Orchard Park, hours that were filled with pleasure. She grows her irises so well and has such a splendid collection we found it hard to leave, even though wrapped in coats, weighed down by galoshes and longing for fur gloves and ear muffs in lieu of furnaces. Eros, Mr. Mead's charming blend, was seen here and gave a good account of itself. Later I was to see it in its home garden at Ft. Wayne and in the Williamson garden and to find it of equally fine color in each. I feel it gives the freshest pink tone of any of the so called pinks of its depth. It is more of a light salmon very brilliant in effect. The stalk is typical of the pallida group and this should help to make it most effective in mass, as the flowers should thus be of an even height. I had seen Gudrun in the South so was glad to see it here where it was equally as fine. This stalk is well branched; the large flowers of pure white in the sun, while on dull days the yellow reverse of the falls give the blade a smoky look; the petals have a fine wire edge of gold; the standards are fluted, while a deep yellow beard, yellow lined haft and yellow crests give it brilliance. Surely an iris worthy of an Award of Merit. Imperial Blush had been but a name, though I had heard of its beauty. It is an iris of heavy substance, fine form and pleasing size, with a very even tone of pink which seemed to be deeper and more lavender than the pink of Pink Satin, to which I had heard it compared. It has most delightful fragrance.

Mrs. Hoyt and Mrs. Grinter were kind enough to take me to

Kansas City one day where we spent most enjoyable hours visiting Mr. Timmerman's and Mr. Branson's gardens and the many interesting drives about the city. No need to speak of the charm of Mr. Timmerman's garden, Miss Stoner did that in her review of Kansas City gardens for the "Midwest Bulletin" but I feel I must mention the tinkle of water, more like the muted chime of a wee bell that comes from a small cascade as the water tumbles into a small rocky pool. Hearing it one is transported in spirit to mountain forests beside cool brooks far away from the city street but a few feet distant. My first impression of the iris planting was that of airy charm, so skillfully have the light colors that make up two-thirds of the planting, been handled. Though he did not say, I felt Mr. Timmerman prefers the clear colored varieties—blues, yellows and whites—rather than the dark somber ones. This, possibly, an impression gathered from his own seedlings most of which are of the light colors. Seedling blooming time is joy-time to him, not that he is interested to produce world beaters but because he enjoys producing lovely irises for his own garden. I noted 32 K a clear rich yellow in the standards and flaring falls, white of blade with a yellow haft and edge on slender stalks; 34 C, a tall slender yellow and cream; 35 F, a lovely frilled white with yellow hafts, all three having much garden value. Another, 34 D is a tall raspberry colored seedling. The flowers are of nice form, the buds exceptionally lovely, opening like a rose bud. This caught and held our eyes from across the garden by its brightness.

As we started for Mr. Branson's the heavens opened and the rain descended. It seemed as though we would have to forego this pleasure but, after a leisurely lunch, we decided to try our luck. It did stop but it left the garden quite muddy. Adventurers all, what cared we for mud! Never have I seen better grown irises and I have seen plenty of exceptionally fine commercial plantings. Here were varieties many inches taller than they had any right to be; we vowed he had them on stilts or else how could it be. There were a few seedlings, one a tall heliotrope of fine substance and smoothness, with arched standards and flaring falls. Mrs. Grinter and I are to have the pleasure of growing this in our garden in memory of a very pleasant hour. We stopped by at "The Old House" where Mrs. Kenneth Browne conducted us up and down her hillside garden where are

growing many of Mr. Hans Sass' un-introduced seedlings amongst a sea of older varieties, peonies and other perennials. Then into the house to see her collection of pitchers. Big ones and little, fat ones and lean, squat and tall, in amber, green, yellow, white, blue, pink and black; lustre and glass and china, hundreds upon hundreds they overflowed three rooms and perched on table and sill as well as in corner cupboards and dressers. Such an array! Reluctantly we departed, Mrs. Hoyt vowing she must have a whole day the next time.

On through Missouri and across a corner of Iowa a half day's drive through the hills to the wide sweep of prairie brought us to Lincoln. There was time for only a "prevue" of Dr. and Mrs. Everett's lovely garden that evening but I was to have several days in which to absorb its beauty. I like it, as there are four separate gardens, each with its green background, so by the time one makes the circle it is time to start the rounds again and always some new impression is formed. Here the Californians, Sweet Alibi, Alta California, Tenaya, Sierra Blue, Neon, Lady Paramount, Brunhilde, California Gold, Dark Knight, Western Skies and many a numbered seedling, were blooming perfectly.

Sweet Alibi is the most perfect iris I have ever seen of its color. The Pied Piper of this garden it enticed all visitors. The flowers, most beautifully rounded, are rich warm cream of exceptional finish. Had Mr. White given our iris world no other seedling, still would we owe him our deepest gratitude for his great bounty. But to Sweet Alibi he has added Lady Paramount, Mohrson and others of which I know not. However, I did see several numbered seedlings and a number of very interesting pogo-cyclis crosses. Lady Paramount is a paler yellow than I had expected, but this was no disappointment as my fancy in yellows runs to the soft hues. It is a beauty, a clear primrose self, with a deep yellow beard and deeper yellow veins in the haft. Tall and widely branched stalks hold proudly the graceful flowers. Alta California, blooming near Sweet Alibi, gave better color than when I had seen it in Eastern gardens. The standards are a clear medium yellow, the falls duller, possibly from the brown haze that lingers on the blade as though a mist had flowed down from the brown veins of the haft. The stalks are magnificent and the flowers nicely placed. In Tenaya we find the ultimate goal for rich dark beauty. It is a smoothly finished red-purple self of fine form; a brown

gold beard gives a glow to the velvet that begins in the haft and spreads widely across the blade. Shall we give it other irises for companions? Perhaps Lady Paramount, or Blue Triumph, with heuchera nearby. Sierra Blue had bloomed in my garden last year and was everything I could wish in a medium blue. Perfect form for its type of flower, of the finest substance, poised on splendid stalks, it will fit into the garden and show bench pictures as well as will Blue Triumph, which is several tones lighter. Both are so fascinating I think I shall grow them together. Western Skies was another impressive medium blue. The flowers are large and of pleasing form, the beard deep gold in the heart, white on the haft. This depth of gold so far within the flower gives the effect one sees as the sun sinks low in the West at twilight when its rays shine out from low hung clouds. Neon, Mr. Salbach's brilliant variegata blend, could not be overlooked by the most casual garden visitor. It looks to be an easy doer and will add distinction to any collection. The bronze gold standards set off by a greenish midrib, the rich velvety red of the rounded flaring falls, the gold beard and golden haft combine to make this a glowing banner held proudly aloft on 3½ feet stalks. Though Mr. Salbach got away to as late a start amongst the breeders of irises in California as Dr. Ayres did back this way, his success in producing outstanding seedlings shows lateness no handicap. Brunhilde, a handsome blue violet-self, with a blue beard to give added distinction, is very worthwhile and will make a fine specimen plant. Dark Knight is tall, the beautiful flowers deep rosy purple the falls being enhanced by the velvet that gives a glowing red fire in certain lights while darkening in others; a yellow brown beard and dark brown haft help to bring out the lights that play through the pigment. The yellow of California Gold is not too metallic, though I think I should like to plant it with some of the whites to soften it a bit. The crinkled standards were slightly open, the midribs showing a green tone, the broad drooping falls heavily washed brown on the blade. There were four blooms of the heaviest substance on well branched stalks.

Long have I dreamed of California in Iris-time; to see this "Little California" renewed my faith in the pot of gold that to me would mean my dream realized.

For a week I was to absorb beauty under the kindly guidance

of my good friends, Hans and Jacob Sass, with young Henry always at hand with a refresher. What a revivifier a bottle of cold beer after one has spent hours in the fields! How the Maple Road garden has expanded since I was there in '27. Mr. Jake now has a steeper hill garden than Mr. Hans though his acreage is not quite so large. He has a new farm a few miles from the home place, a very fine one, with springs flowing down from the hills to form lakes where he has started waterlily plantations. From the twinkle in his eyes as he showed these to me I feel sure he is starting off on another hybridizing spree and, within a few years, expect to see him produce a new race of lilies, as he has bigger and better corn. It rained continuously, now a torrent, again gentle showers, with the sun peering out at times just for luck. We skidded about on the slope, performing acrobatic stunts to retain balance, scuttled to the shelter of the orchard when threatened with too great a drenching and found the hours of each day all too short. When the rain continued too long Henry brought blossoms to the house and we had a porch flower show. May I recommend this type of show if you want to see the fineness of individual flowers.

Mr. Jacob Sass has the whites! While other breeders, whose plantings I have seen, can introduce one or two, he could introduce a dozen, each of which is desirable. There are white whites, cream whites, yellow, pink and blue whites; such an array; it was a nightmare. Crystal Beauty is all its name leads one to expect, a flower of cool charm. The standards, slightly ruffled, are white with just the faintest suspicion of a flush, the falls very pure with a yellow beard and smoothly finished. One not yet named, 31-85, probably is the clearest white. It is an Aphrodite \times Trostringer, F 2 cross, and possesses very fine quality. The cupped standards are slightly ruffled, the falls flare; the beard is white, yellow tipped in the heart, while the flowers are quite iridescent from the silver flakes that give it a frosted finish. Then there is 35-8, a heavy smoothly finished flower, with green midrib in all petals and a very faint green wire edge at the haft; creamy buds of lovely form as they unfurl are well placed on nice stalks. Still another is 32-73 done in rich cream, the falls showing some gold; the buds are a creamy yellow. These are just "samples" of what you might choose from, were you there in blooming season. I chose at least

half a dozen I want for my garden, gorgeous beauties, the flowers varying in form and in hue.

Early one morning we wandered down through the field to the lower edge where the evening before we had spotted the opening bloom of a new blend. Standing there I spied across the long field an iris that blazed like a torch. Excited I pointed, shaking Mr. Jake's arm, "What is that?" "What, where?" was his reply, "I see nothing." Only much later was I to learn that our walk to the blend had been purposely planned and that he had meant me to get my first glimpse of The Red Douglas from a distance. Had I been watching him as he whispered to Henry I should have suspected a trap, as I have learned to recognize a certain facial expression and to be on the alert when it appears. Passing years will not bring more than the outward signs of age to him. At heart he remains a boy with all a boy's love of pranks. The Red Douglas is a beauty, indescribable in words, possessing the glowing silken luster of a Liberty scarf done in browns, reds and golds. The standards are a glowing deep rose, through which are woven gold, amythest and brown, while the flaring falls are velvety deep red, the haft clear brown and the blades carrying a black sheen. A deep golden yellow beard, brown style branches with deep yellow crests add an inner glow enhance its blazing brightness. The finely formed stalks are from 38 to 42 inches and the flowers are happily placed. The Black Douglas is a rich deep violet blue self, the falls carrying a glowing black sheen. The haft is brown toned, the beard blue violet. It will rank high among the dark irises. It was my good fortune to see Dore in three gardens, those of Mr. McDade, Mr. Hans Sass, and Col. Nicholls. In all it was fine. At Mr. Hans' there was a nice clump, showing that it is free blooming. I fancy it was the increase from the first rhizome to leave Mr. Jake's garden as always the first increase of a new fine seedling in either garden is quickly removed to share with the other brother.

The flowers have a crisp appearance, the soft primrose yellow of the standards reflected in the edge of the cream white falls, the yellow lines of the haft and the crests. Sir Launcelot is a golden brown that should be lovely planted with Airy Dream. Golden brown standards, with brown carmine falls set off by a deep gold beard and golden haft marked with brown carmine

veins, it is an iris for a treasured spot in the garden. Golden Helmet, introduced two years ago, is, to my way of thinking, one of the finest of Mr. Jacob Sass' introductions. The open standards are ruffled and of most brilliant golden tones with a green midrib. "Tush, tush, open standards!" I hear some of our judges say. Yes, they are and very lovely, too, being most suitable to this ruffling. I do not like open standards either, if they flop all about, but when they are crisp and belong, that is something else. The semi-horizontal rounded falls are brown red, with a black sheen set off by a glowing orange yellow beard. The stalks are strong but do not seem too heavy for the number of blooms open at one time. Spokane, in the same color range, is a much larger flower. In this the standards are a lighter golden bronze, the falls a brilliant red, wide of haft and drooping, with gold veins across the haft meeting a brown edge that flows to meet the golden beard on the blade. The reverse of the falls carry that greenish brown tone we now find so often in these rich variegata blends. War Eagle, another 1933 introduction, is a huge rosy purple self of satiny texture and fine finish. There is a luminosity that gives a glow often lacking in this particular color. A grand Iris. Joycette was lovely but surely did look very purple beside the Red Douglas.

The first of Mr. Hans Sass' newer introductions to catch my eye was a clump of Oriana growing beside the path in the exhibition garden. It is a beautiful white, the flowers large and of fine finish, the flaring falls gold lined in the haft and carrying a pale gold beard. It gives a very cool effect and is very desirable. Golden Light is easily recognized as a Euphony child. The 40-42-inch stalks are slender and well branched. The flowers are of beautiful proportion, glowing candles that radiate beauty as they sway in the breeze. Golden standards with a rose edge and falls the same gold and rose that give a decided orange effect which is intensified by the vivid beard. Mr. Hans has several of the most beautiful blends amongst his numbered seedlings it has ever been my good fortune to see. Seedlings we all would delight in having. Most of the visitors to the garden during my stay were quite impressed with them. 18-31 is a Rameses \times Midgard cross, a rose and gold blend with a play of lavender through the falls. The wiry stalks, 44 inches high, bear proudly the shapely flowers. Another, 25-31, has smoky lavender standards with bright lavender falls set off by a long

yellow beard. Almost as tall as 18-31 it has the same fine carriage. 52-33 has gold flushed standards tipped rose, the falls gold with rose overlay on the blade, giving the effect of rose falls with a wide golden edge. All are equally fine, being quite distinct and outstanding in a class so well represented in our gardens. Of Mr. Hans Sass' fine plicatas I had heard little and a long row of these as tall, and with several taller than I had seen San Francisco and Los Angeles, came as a surprise. There were two most unusual ones, more like amoeans turned upside down so evenly was the blue spread over the standards, so white the falls. One was a light, the other a dark blue. The iris of the season, however, was the yellow plicata. At last a plicata that is really yellow! Dark rich yellow ground with brownish maroon edge, it is a real break. The petals are thick with a smooth finish, the standards slightly ruffled. There are six and seven blooms on high branched stalks. This is 30-40 and Mr. Sass writes me that another, not in bloom when I was there, is thought by some of the visitors to be even better. This is 43-34.

There were some of the grandest yellows I have seen, easily thirty or more from which to choose, running the hue scale from pale cream to the depth of Golden West, and of fine form and finish. Several, blooming for the first time this season, showed characteristics that indicate they will have stalks well up in the world next year. Mr. Sass has been working for a number of years for tall fine yellows and, failing to get the depth of hue he desired through the tall bearded resorted to the intermediates. From these later crosses he is getting yellows of depth and clarity.

The spring having remained cool in Nebraska the pumilas and intermediates were blooming along with the tall bearded when I reached the Sass home. Such a wealth of bloom on plants that had been in bloom for more than a month. Henry had sent a box of the pumilas and his own pogo-cyclus seedlings to Nashville where they were on display during the two days of the meeting. Some of these I was privileged to see as growing plants. A bed of size, filled with the oncocyclus and regelias whose foliage was now browned to the ground, bore testimony to the amount of crossing Henry had done while his father tripped about the country. Such a wealth of fat pods ripening! To see Blue Topaz, Balroudour and Gray Cloud growing freely in the field, with no special care, indicates that we shall find

these quite easy doers. Here I have Sound Money with arched standards and flaring falls, is a vary clear pale blue with greenish lights—that green-blue one sees in the Brittany seas. OP 35-9, a cross of the regelia Eunice \times 29-5 (pink) gave a pale yellow self, quite rounded with flaring falls, these being marked with a blackish purple spot.

Sound Money is all the name suggests—a rich deep yellow, the flowers nicely shaped, cupped standards and flaring falls. It had been blooming for more than a month and gave a gay picture. Owaissa (Blue Bird in the Indian language) is a small clear medium blue-self, with a white haft and beard. It, too, has a long blooming season. Mr. Jacob Sass has some very rich dark dwarfs with small shapely flowers but they were out of bloom before I arrived. I noted two at Nashville, P 35-2 and P 31-13. Mr. Hans' Puck is an imp, one of the most perfect dwarfs I know. Very rich deep purple, on the red side, the flowers have exceptional substance and brilliancy. Amongst the great army of unnamed midgets he has scores of beauties. P 22-32 has deep purple standards and brownish red purple falls of very fine substance. P 7-33 is a dark velvety maroon. A very soft yellow with gold fleck is P 12-33. P 13-32 is a darker yellow. P 15-33 is a lovely mauve pink. All these are finely shaped with flaring or horizontal falls and with flowers held well above the foliage. Fortunate are those gardeners who live near enough to visit these gardens when the pumilas bloom, there to select wee treasures for their own.

And what of the intermediates? For several seasons I have had blooming a dozen or more under number that have come to my garden through the kindness of these brothers. All are finer than the older varieties I had grown and have displaced them. I was delighted to find some of the newer ones blooming and decided they are as fine but do not exceed some I have been trying out and want them to name. However they have extended the color range so that we now have the brown-reds and reds as well as lovely blends. Southland, a deep golden yellow with cupped standards and flaring falls, gives five blooms to the stalk which averages 28 inches. It is a handsome flower. Susa, one of Mr. Jake's contributions to this group, is done in tones of rich amaranth and red-purples, the white haft heavily

lined red-purple. How lovely it will be with certain tulips. Then there is Golden Bow, introduced this year, another interesting deep yellow, a longer flower than Southland. Eleanor Roosevelt, with cupped standards and long flaring falls, is a deep red-purple with brown haft and bluish beard. The branched stalk carries four blooms. Both this and Southland are fall bloomers. At Mr. Jake's there were two long rows of yellow intermediates so filled with bloom it was dazzling in the sun.

My next stop was at Mapleton, Iowa, Mr. and Mrs. Whiting having graciously invited me to be their guest during the Sioux City show. Driving along its tree shaded streets recalled familiar New England villages, so quiet and peaceful was it, the old homes with their sweep of lawn and lovely gardens. The Whiting's have planned their gardens with great pleasure one feels and the gardens reflect their own charming personality. There are two small pools, one an enchanting bit in which are reflected the swaying boughs of graceful tree—the other a more open one with a "rock bound" bank where *cristata* and *tectorum* wander at will. Lovely these, each with an individual beauty. The iris gardens are separated by a fence; the commercial one, farthest from the house, being planned to have many beds, each with shrubs in the center to form a background for the irises which have been carefully planted for color effects. The other is an exhibition garden where the newest varieties are planted in small specimen clumps.

Here I saw Beotie, one of the Cayeux introductions, a subtle beauty. It is nicely branched and the blooms are well placed. The standards are a luminous grey-violet with gold flecks, the falls a deeper hue showing some of the gold but not so much as in the standards; the wide haft is violet white with dull brown veins, while the beard is white tipped. El Tovar, which was not in bloom at Omaha while I was there, did open here and I was glad to be able to watch it for a couple of days. The buds unfold very slowly while after opening the falls seem to keep spreading out not fully developing until the second day. The standards are a cinnamon brown blending into green gold in the center; the falls are a very dark reddish black the reverse green gold with a wide red edge; the haft heavily lined gold. The stalk is pleasing, in height about 36-38 inches, and carries five blooms. Eclador is a large primrose yellow, the

standards domed, the falls flaring; the haft is very wide and is marked by brown veins which are not displeasing. There is a narrow deeper yellow edge around all petals and the flowers are nicely finished, with substance that held well through a hard rain. One of the very fine irises in this garden, filled with novelties and the best of the older varieties, was Genevieve Serouge very impressive in its soft beauty. The gold standards and lavender falls are flecked and veined gold which, with the golden haft and gold edge combine to give a flower of great charm, one that should be quite effective in soft lights.

Mrs. Collier, Mr. Snyder and Mr. Stephenson surely know how to grow irises in their Sioux City gardens. Mrs. Collier has wide borders on the house terrace and along the edges of the lawn, as well as massed in a garden back of the house. Her collection is very interesting containing as it does the very best varieties we have. Purissima was quite impressive and I was glad to see that it does so well. Mr. Snyder's garden is a backyard one where he grows a splendid collection and also does a bit of hybridizing. A seedling, L 32, 28, received a C. M. at the show. The cupped standards are reddish violet, the falls reddish purple with a pansy black sheen; the haft is white heavily veined brown, shading into blackish red-purple while the beard is antique gold. The 36-38 inch stalk is widely branched and carries five blooms of very fine substance and smooth finish. The coloring is very rich and the flowers quite symmetrical. Here, too, was Sir Knight, Mr. Ashley's superb dark beauty. The slightly domed standards of mauve violet and the flaring falls of reddish violet with wide hafts are of beautiful form and well placed on nicely branched stalks. Its brilliancy is remarkable, in some lights giving a blackish sheen over the falls. Mr. Stephenson's main planting is at Bagley but he has a number of newer varieties in his Sioux City garden. One could not ask to see finer growth, the height of some plants being quite amazing.

Reaching Des Moines I had a very restful week with Mr. and Mrs. DuMont. It was nice to have a change and look at peonies after so many weeks of intensive iris study. Mr. DuMont, aside from his extensive commercial peony planting, plays along with raising seedlings and had some that looked mighty good to me. Quite a few Japs and reds that did not seem so purple.

We stopped by one morning—for half an hour as Mrs. DuMont said—to see Mrs. Iltis and her most delightful garden. Such a restful place our hour lengthened into hours and still we chatted on. Dictamnus has been used with a lavish hand and its airy grace was a perfect foil for the irises. I know of no garden that gives one more of a sense of tranquillity unless it be Mrs. Wright's in Nashville. Some of my happiest hours at Nashville were spent in this garden where all growing things respond so gayly to the love Mrs. Wright bestows on them. Hers are truly "green fingers."

A long day's drive through southeastern Iowa, across the flatlands of central Illinois and Indiana took me to Richmond from where it was but a short drive the following morning to Bluffton. Only those friends of Mr. Williamson who have found the courage to return can understand the great peace that was to descend upon me like a benediction as we walked through the gardens amongst the lovely irises to which he seems to have given so much of his own joy of life. Mary has changed the arrangement of the back yard garden at home. Rows of seedlings have given way to a lawn with borders where the irises she wishes to use for hybridizing are grown. The Church lots and the Linn lot filled with seedlings have been abandoned. All have been transplanted to the main commercial garden where blocks have been set aside for the seed beds. Too late to see the height of bloom, there was much of interest remaining, especially two rows of amoenas, the type of iris the Williamsons have made so particularly their own. Tall, with heavy substance and rich velvety falls they are a distinct advance over the earlier ones. Next to these was a large block of seedlings from Mr. Williamson's last hybridizing. Mary was selecting the plants she wanted to replant for study and Mr. Cook and I selected a few for our own gardens. Across the field were Sandia, Moonglo, Varese, Sundipt and Amigo, Mr. Williamson's last selections. In Moonglo and Amigo I recognized old friends, seedlings at whose first opening I had been present. Early one morning in '31 I had made the round of the Linn lot before Mr. Williamson and was thrilled with the glow of a newly opened seedling, later to be called the "Pansy Iris." Returning with Mr. Williamson after breakfast I was happy to see he liked it as much as I. "The best of the year" was his comment. Later Mr. Cook and Dr. Kinsey confirmed our judgment. Last year when Mary was

ready to introduce it she wrote me regarding the name for it. It was my great privilege to name it Amigo, in memory of my friend. Seeing a short row of it in full bloom I was impressed by its great brilliancy. The waved standards are a soft lavender that glows; the falls are pansy purple with a narrow edge of the lavender and a velvety brown tone in the haft. The substance is exceptionally fine and the carriage of the flaring falls gives it quite a jaunty air. The stalk is well branched, showing three open blooms at a time, while each carries from eight to nine buds. Amigo shows all the fine qualities of the Dominions, while its brilliancy gives great carrying power. I believe it will rank as one of the most distinctive Longfield introductions and will share the place Dolly Madison has in our affections. Sandia is a quite distinctive rose-pink blend with a yellow undertone. The flowers are large with a beautiful finish and are borne on widely branched stalks. Varese is a blazing rose-purple that will defy anyone to pass it by unnoticed—one of those irises that catches the eye in the distance with its “come hither” air. There are eight blooms on a stalk, high branched, the flowers being large and of pleasing form. Sundipt is an aristocratic yellow, having that well groomed appearance we find so pleasing. The heavy substance and smooth finish of the flowers, together with the purity of tone which is enhanced by the deep gold beard, should make this one of the most valuable yellows in the garden. Moonglo possesses the power of a chameleon! It is like a golden tapestry, an iris of unforgettable beauty which to know will be to love. On opening the blooms give a lavender-rose appearance through which gold threads seem to weave; a short while later and it has become more golden as the rose cloud fades away leaving just a flush of rose and soft blue; as it ages the standards take on a clearer golden light, while the blue and rose flush on the falls soften. In all stages it is beautiful, a golden flower of great personality. Over the way was a stunning variegata blend which I learned was Shah Jehan. A late bloomer it will prove very worthwhile, and will hold its own with the group which our American breeders have made so greatly their own. The standards are a soft pale yellow which holds a glistening sheen from the rose lights that suffuse the center; the falls are red brown, with a narrow yellow edge of the same hue as the standards; the haft is brown with no veins

showing, thus adding to the richness of the flowers, which are of heavy substance.

Mary and I drove to Ft. Wayne one morning to see Mrs. Mead, being fortunate in finding her in the garden. Again I was to feel that great sadness as we passed along the paths that had become so familiar during the past eight years. Here was *Pluie d'Or* blooming in great profusion to remind me of the hour when Mr. Mead had taken me to the lower terrace to see its beauty at its first blooming. Further along Ion brought memories of a rainy day when we had watched to see whether it would blotch and how happy we were when it did not. Each turn of the path recalled my friend's happiness in the beauty of the garden and I left filled with great joy at the interest Mrs. Mead is taking in the plants and her friendly wish that all Mr. Mead's friends continue to return to enjoy its beauty.

Paul Cook has been carrying on intensive line breeding for at least fifteen years and has produced some of the finest pink irises I have seen. This year I was startled to find most of that planting had wended its way into outer darkness while a red blaze has taken over the garden. It was a hot day under a blazing sun when we went out to see the seedlings. Let your imagination play with a planting, easily 20 x 100 feet, of nothing but red irises and understand why bulls have brainstorms! The worst of it was, they are all good and we waded along through that Red Sea, blinking our eyes, trying to decide which were the best. Half way through the patch, back again to catch up from the beginning, trying to find the ones we decided were best on the first round. It is an iris jazz-mania! I hope his fancy will take him to whites next or that he will make a white planting by the reds, else we shall carry smoked goggles. A bit beyond was a smaller planting of blue-purples, with blue beards. It seems as though Mr. Cook can play along with his irises and produce at will whatever his fancy chooses. I think I should like to see a row of whites with bright blue beards for a change. Possibly he will have them when he tires of the reds.

Another six hundred mile-drive through Ohio, Pennsylvania and New York took us to Ithaca where I found only a fifth of the bloom there should have been. The drought had wrecked Col. Nicholls' hopes for bloom as it has that of the Sass broth-

ers. Row after row of fine healthy plants, with only scattered flowers. In the home garden there was more color but not what had been anticipated. There were splendid clumps of Crown Jewel, Sea Dawn, Boadicea, Gold Wing and Blazing Star. Lesser ones of the newer seedlings. Gold Wing, a very fine even tone medium yellow showed its value for the garden as the stalks are placed widely enough apart to give a clear view of each, the blooms seemingly poised as butterflies. Crown Jewel, a more rosy, richer Clara Noyes, planted beside this Sass introduction, made a perfect picture. I should want both, and together as thus planted the charm of each is enhanced. Jully Roger belongs to the group of brilliant dark purples and gives a very glowing clump. I thought I should like to try it with Gleam or perhaps place it near the rosy dictamnus. One of my favorites is the gallant Caballero, a grandee of this garden. The flowers are shapely and possess fine quality. Rose-purple in effect the falls have an added depth of hue that is set off by the clear yellow beard which adds a luster to the satiny finish of the petals. There were several seedlings under number that had been held over from other years. One, No. 12768, a seedling of Valor \times 4053 (Gaudichau \times Alcazar seedling \times Morning Splendor), has all the signs of race. The arching standards are a clear tone of rich bluish red-purple; the falls the same coloring, flaring widely with tips uptilted. The stalk is slender and high branched, while the buds are quite black. A very promising seedling it will be given the name of Mata Hari, if this name has not been taken. One of the most distinct varieties is Creole Belle. The colors is a clear brilliant heliotrope which is intensified in the falls by a wash of rich brown at either side of the tip of the black gold beard. The flowers are quite heavy with a very smooth finish and are of the cupped standard, flaring fall form that is so pleasing. There were several interesting seedlings opening for the first time that I shall look forward to seeing next year on established plants. Both at Ithaca and at Omaha 1936 should be a banner year for seedling bloom, provided the elements are kind, as in each there is a crop covering three years that should bloom. I had seen Valor in a number of gardens and had heard it highly praised so was glad to find a long row of it in full bloom, so tall and stately. A very fine iris, indeed.

Now that Noah is safely home in his garage stall for a deserved rest after his several thousand miles journey, and I have the time, before remaking the old garden and adding a new one, to look back over the seedling gardens it was my good fortune to see and the relatively fine quality of the seedlings as a whole, it is quite easy to see that the breeding of fine irises is making strides toward clarity of tone in the selfs, greater brilliancy in the deep rich colors, and a cleaner blending of colors in the blends. Too, the average of the stalks is better, as we do not find nearly so many giving that clubby appearance. The flowers are better finished and of thicker substance. Whites and yellows are taking on a velvety quality in the falls amongst the seedlings of Chancellor Kirkland and Jacob Sass. I had noted this in Col. Nicholls' yellows several seasons ago but it was more pronounced this year. Mr. Grinter believes only the edge of iris breeding has been touched and that we shall see within another decade irises beyond our wildest dreams today. Mr. Hans Sass and Col. Nicholls agree with him so what may we expect? I hope not varieties taking on the proportions of tall shrubs. So fine are the present day introductions one would have a hard time to eliminate any, so go out and buy a hundred acres if you can and prepare to enjoy full the iris season. In this resume of fine irises seen during my nearly eight weeks swing around this circle there is not one I should not be very proud to have in my garden and I am sure I should have seen as many more had I had seven league boots (or had Noah possessed wings!) and an opportunity to visit the gardens of our other breeders.

A PLEA FOR NEW ENGLANDERS TO TRY CALIFORNIA IRISES

CARRIE STOVER LEWIS

■ Having heard so much about the tenderness of the California irises, I cannot help feeling that an injustice is being done to the beautiful irises of the West Coast, by creating a doubt as to their hardiness, and I want to tell my experience here in Haverhill, the most northern city in Massachusetts, where the thermometer dropped in the winter of 1933-34 to 20 below zero, the coldest that anyone remembered.

I have at least seventy-five varieties, and after that winter, Happy Days, Alta California, Neon, Los Angeles, San Francisco, Sierra Blue, Shining Waters, Arbutus, Sacramento, some of them, first year plants, all bloomed.

Of those planted prior to 1934, many have increased marvelously, nearly all, if not all have bloomed once, most of them each year.

My garden is on a northern slope, and last year every plant was moved, as the garden was all remade. And 1934-35 was a trying winter, although we had a good covering of snow part of the winter. This year, to the amazement of all who have seen the garden, including most of the New England Judges, those newly set plants have given a good account of themselves, giving in many instances, tall stalks, and good size blooms that have compared favorably with those from other sections of the country.

I always cover all of my iris with salt hay, and last year after resetting, of course, I was especially careful. Some had boxes besides, which was lucky as we had a late frost. Some of them, of course, failed to throw blooming stalks, but so have others. It takes longer for some to become established, and it took two years for Wambliska to bloom, and Dog Rose is only coming into its own. These are only examples quoted at random to show that California irises are not the only ones that take a little time.

The first year that I had them, Wambliska and San Francisco stood side by side, and neither bloomed, as we had a very late

frost and I was caught napping, but the following year both made up for it. Last winter, after resetting, Wambliska did well, and San Francisco which in moving, separated into twelve plants, grew wonderfully, but only the largest plant bloomed, but that did finely. All the plants are now nice and stocky.

This year Neon, Natividad, Rubeo, Shining Waters, Sierra Blue, China Rose and El Captain have been wonderful, as well as Los Angeles, Autumn Dawn, to mention only a few. Never have I seen Frieda Mohr so large and tall!

Purissima was coddled in a seed flat in a cold frame so that we could guard against late spring frosts. But if you could have seen the results! Seven or eight stalks, with several blooms on each. In a shallow seed flat, mind you!

Neon, a seedling under number, planted in 1933, and moved in 1934, had three tall stalks, bloomed wonderfully, and was the centre of attraction, as it was I think, the only plant in the East.

In Miss Sturtevant's garden, Purissima has bloomed in the open for three successive years.

The California season is so much earlier than ours, that larger rhizomes can be purchased earlier, and so have a longer season of growth with us.

With good soil, well fertilized, I do not think that anyone need fear to plant the irises from the West Coast, and I know that any garden will benefit in beauty from their use.

IRIS PILGRIMAGE, 1935

BRUCE C. MAPLES

■ Our annual pilgrimage to the various shrines of the iris starts a little earlier and lasts a little longer each year, it seems. In the Spring of 1935 my diary reports that we started on April 29 and headed south into Arkansas. The annual meeting being in Nashville we chose this "longest way round" because we thought it would be sweeter and we have no regrets. In the first hour of travel we saw things and made quick stops at the side of the road to investigate splashes of color on the right-of-way and in the forests which push up to the highways all through the scenic Ozark Mountains. Beautiful colonies of *Phlox divaricata* in shades of pink and also in pure white dotted the landscape for the first hundred miles through south Missouri and North Arkansas. Near Pindall, Ark., we made our first contact with the native azaleas in full bloom in wonderful shades of pink and some occasional whites. And at this season we must marvel again at the wonderful little hepaticas cheerfully peeping up from the roots of large trees on north slopes just above colonies of bloodroots along the brooks. Farther south we encountered colonies of the red blooming buckeye livening up the landscape on hillsides and benches near the rivers and creeks. And just before arriving at Little Rock we spotted a few clumps of a deep golden yellow baptisia that I do not see quoted in the catalogs—not the common light yellow with drooping branches but a deep yellow with erect spikes of bloom. These baptisias are easy and help a lot toward relieving the sameness of an iris border; while most colors are native here at Ozark, Mo., or near here, this yellow is not and I should like to "contact" some of it.

This is primarily an iris note but it takes many kinds of plants and flowers to make a good garden and we had to pass many kinds before we discovered the first iris of the journey. At Little Rock we saw loads of beautiful roses in full bloom (our roses at home not even in bud). Here we struck the pavement in a northeasterly direction toward Memphis driving through the magnificent cypress swamps. Only fifteen miles out of Little Rock, Mrs. Maples commanded me to stop (I was getting used to it

by now) so that she could point out to us clumps of spider lilies, *Hymenocallis*, all along the ditches. And when we got out to look at these we discovered clematis in bloom. And then when we reached the Saint Francis River we discovered growing in the mud along the road quite near the right-of-way, our first iris. It was a beautiful colony of *Iris fulva* in full bloom on straight stems over two feet high and it was at that time receiving the full attention of two carloads of Oklahoma pilgrims on their way to the Iris Society meeting in Nashville.

Our next sight of iris came after we had crossed the corners of Tennessee, and Mississippi and across northern Alabama into the Tennessee River country. We crossed the Wilson dam near Muscle Shoals and drove on to the site of the Wheeler dam which is now under construction and there on the Government Reservation we found a colony of *Iris versicolor* and we noted one or two more colonies of this before we left Alabama.

We arrived in Chattanooga in due time and on the morning of May second we visited Lookout Mountain for a short time. We were sorry that we were obliged to hurry this visit somewhat; it is a wonderful place with its beautiful gardens, grand scenery and historical interest. But we were anxious to get over to the gardens of Mr. Clint McDade. Here we found Mrs. McDade in the gardens, Mr. McDade having already departed for Nashville quite early. And here we found that which we sought: the finest of iris in wide variety and well grown. The home and gardens are situated on a high hill above the Tennessee River and growing conditions seem to be excellent. Many interesting plants are to be seen here besides the fine collection of iris. He has a complete collection of hollies, and a complete collection of all species and varieties of hemerocallis. Here also were many fine old specimens of boxwood. His collection of iris is not limited to tall bearded varieties but contains many species of interest to the iris student. His interest in fall blooming varieties is well known to the more active members of the Society and he has the most complete collection of fall bloomers to be seen anywhere.

Red Indian, Mrs. McDade's own seedling, bearing an appropriate name, is a very good iris and if it blooms in the autumn, as may be expected, will be a stunner.

I liked Golden Helmet, Blue Monarch, Christabel and October Blaze as seen here.

And in this garden for the first time we saw Lucretia Bori, the new yellow being introduced this year by Robert Schreiner. A good sized bloom on a good stalk with a peculiar shade of yellow containing a touch of olive; standards hold well together, falls just right; this is different and one of the best.

Golden Hind comes from England. It is a stylish flower and clump. No, it does not have a tall stalk but the whole thing, plant, stalk and flower is symmetrical and I could not gaze on the beauty of it and recognize any defects. A good warm yellow.

At Nashville the first garden we visited was that of Dr. Kirkland on Vanderbilt Campus. We spent some time here among his seedlings and could have spent more. Not much time to make notes since we had arrived a day late and had to catch up with our visiting. Much admiration was expressed for Timagimi, a sort of strawberry red.

Cyrus the Great I saw here for the first time. A fine purple with a touch of brown on the haft.

At Mr. Washington's we found two of the best almost in the same glance. Sun Dust a magnificent yellow, and when I say a yellow is good I mean it is deep yellow, not having much use for light yellows with an exception which I shall note later. Sun Dust is large and tall with a stalk able to carry it's load which is plenty.

Sweet Alibi is the exception noted above. I saw this for the first time in Dr. Everett's garden in the Spring of 1934. Bloom was poor there owing to the unprecedented drouth, many things not blooming at all. But Sweet Alibi was holding forth splendidly combining a delicate shade of light yellow with a rather large bloom slightly crinkled on a tall stalk and with plenty of substance to withstand a high wind and a hot sun and still look well in the evening.

Four yellows have been noted above: Lucretia Bori, Golden Hind, Sundust and Sweet Alibi. These should not be considered one against the other; each is distinct, and each has it's niche to fill. There is room in the smallest garden for all four if the gardener loves fine iris as well as I do.

The other find at this spot was in the same bed quite near Sundust. It was No. 111, a grand white. I have always considered Venus de Milo and Easter Morn as hard to beat in the whites since I first saw them in Mrs. Pattison's garden side by side. But

other good whites are showing up and here is one. Large and imposing, it has substance enough to go through a hard wind and rain storm and look good the next day, and we saw it after this had happened.

When Mrs. Washington heard of our late arrival and how we missed the first day of garden visiting with the other members she very kindly offered to show us the garden of Mr. Williams and the seedling field of the Washingtons just out of the city.

Mr. Williams had on exhibit several stalks that had been sent from distant points we were told. Mohrson, a seedling of William Mohr and showing it's blood in the flower although much darker in the peculiar color pattern and on a very tall stalk.

Sierra Blue another good one.

Eleanor Roosevelt, Balradour, Blue Topaz, and others sent or brought by Jacob Sass were in good shape after a long trip and all looked desirable. Eleanor Roosevelt reported as one of the most dependable fall bloomers; Balradour and blue Topaz two representatives of the new class being developed by Sass by crossing pogoniris with regelio-cyclus.

After a most interesting visit to Dauntless Hill, the country home of Mr. Connell who gave us Dauntless, Rose Dominion, Parthenon, and other fine ones, and we were ready to depart from Nashville, retaining memories of fine iris and hospitable, delightful people.

We returned home in time to see the very first bloom in our seedling patch and to find William Mohr in perfection, Santa Barbara just ready to unfold a grand first bloom (how do people keep from raving over Santa Barbara? It is grand here always. Bloomed in late season this year with a second set of bloom stalks).

Burning Bronze has bloomed well here the past two years, a grand red with brown. Wish it would set seed for me.

Deputé Nomblot another brownish red that is wonderful and a clean bloom. We get seed from its pollen but no seed on it.

Here allow me to mention my frill bed. Here we plant Midgard, Noweta, Clara Noyes, Ophelia, Jubilee, Euphony, King Karl, Peaches, La Neige, the last being the only frill we have located in white. These rather short stemmed varieties with the crinkled blooms comprise some very interesting colors and this bed is always interesting. I think Crown Jewel would make a very interesting addition to this assortment.

Legend a wonderful type resembling Cardinal grows well here.

When I think of Los Angeles I also think of May Hall which I saw growing alongside Los Angeles in Jacob Sass' garden last year. It stood a foot taller than Los Angeles and had a much larger bloom with color identical, I believe.

Red Dominion a well finished red purple with clean haft. It is a willing bloomer here, four stalks on one newly planted rhizome.

Rose Dominion better this year than last, quite desirable.

In quantity of bloom our season this year was the best in years. Everything bloomed and bloomed well including varieties not usually free blooming. And some varieties followed the example of Santa Barbara and repeated. One seedling bloomed just before mid-season, then in the last of the season it came again with the balance of the rhizomes putting up stalks and in such a manner it bade us a graceful farewell. Other seedlings among the fall blooming prospects bloomed scatteringly all summer with many stalks showing up in October. For fall bloom on named varieties we have had to go begging. We had a very dry summer after our wet spring and did not get our rains in August; no rain until September and not much then. These autumn bloomers need some rain in August to start them off properly for fall bloom. I think we have a good climate here for them. My friend, Mr. Charles E. Simon, of Springfield, which is quite near here, has been blooming Le Correge and Gold Imperial in fine shape each fall although they are not classed as regular fall bloomers. Incidentally Mr. Simon takes Autumn Queen and Ultra which bloom as dwarfs for most people and gets stalks a good twenty inches tall and plenty of them.

But must pass on to Overland Park, Kans., where I went in late May accompanied by Mr. and Mrs. Simon, Mrs. Maples and our two boys. We found the bloom in good shape here.

Jean Cayeux is the best I have seen in the brown blends and seems to be dependable. I have been looking at it for three years and there is always plenty of bloom. President Pilkington came in with Jean Cayeux and seems to be dependable also. If you have trouble with Dolly Madison try Pilkington; it is just a little darker and I like Dolly Madison better but the new one seems to be a better doer in some regions and stands up well.

Again we saw Wotan, Mr. Grinter's fine contribution to the

Dominion aggregation. Those who have not tried this have missed a good one. It is in color somewhat like Red Dominion and is smooth and well finished well back on the haft.

Ella Winchester, a new red from Mr. Grinter, showed well here. It's getting to the point where a red must be good to attract attention but this one will do it. I have seen nothing like it. The shape and style is unique and the finish is superb.

Black Wings still good for a dark one.

Cryoro a fine deep yellow, intermediate in season and height. Southland, a fine contribution from H. P. Sass, intermediate and fall bloomer, good yellow even if it didn't bloom in the fall.

Eros, the new tall pink showing yellow influence is fine. Not the giant flowered type.

Golden Flare growing beside Eros is a flame in the garden. Not a tall stem but a good bloom with fine color described by Miss Stoner as a flame and yellow blend. This is worth trying. If you like such roses as Talisman, Autumn, etc., you will like this. But take Miss Stoner's advice and don't plant it with Eros. They don't scale together and the colors don't "nick."

Over in Independence, Mo., in Mr. Grinter's garden we again ran into Ella Winchester in fine form and also a fine deep blue which Mr. Grinter called Blue Satin. It is about the same stature as Sensation and the bloom is somewhat the same shape; the color is much more attractive to me. I hope this will be made available.

Mr. Grinter's Missouri and Blue Triumph have already reached the heights among the blues and he has other things in the offing which look promising. He is pursuing a cool, calculating course in his hybridizing which will lead to some astonishing results within a few years, I believe.

Speaking of Blue Iris: I am looking forward to seeing Blue June which I have from Mr. Donahue. This has, in my humble opinion, the blood of the very best blues and it should behave like a real aristocrat.

Another "blue blood" which we have been blooming for two years past is a seedling from Mr. Simon which carries the blood of my beloved Santa Barbara and another good blue. This is a good tall iris of pleasing blue shade with the very best of substance, and willing bloomer and easy to grow.

Two of the best dwarfs I grow are also Mr. Simon's seedlings: one a red and the other a deep purple, very small.

I have not mentioned variegatas at all. I do not like any of the

blended variegatas that I have seen. King Juba we bloom very well here and it is good. The cleanest colors in this type come in Gay Huzzar and Argynnis, both very deep bright yellow standards and good red falls and both small. But the king pin of all of them is Vision which I saw for the first time at Freeport in 1933. There it was clean yellow in the standards and flaunted that good old Dominion shape with flaring falls which thrill so many people. As we saw it at Mr. McDade's last Spring it carried standards not entirely clear yellow though we were told it came out clear yellow when the blooms were older. But still it is the best variegata I have seen all in all and I hope to bloom it here next year. Have not seen Deseret which is reported as very fine.

Ozark, Missouri



Iris ensata as it grows in the garden of Louis LeMieux,
Wauwatosa, Wisconsin.

IRIS NOTES, 1935

MABEL CARY TOBIE

■ Mrs. Thomas Nesmith had a bewildering collection of the newest irises.

MAYA (Washington, 1934) is an outstanding iris. Its flowers, carried to the height of forty inches, have tall domed standards of strawberry-red; falls are velvety and of the same tone as the standards, but with a subtle blending of coffee and gold at the throat. The styles are orange and strawberry-red and it has a brilliant orange beard. The stalk is splendidly branched.

WILL O' THE WISP (Washington, 1934) is a beautiful tall yellow bicolor. I believe it is a seedling of Mary Geddes \times Purissima. The standards are large, broad and well domed of soft canary yellow. Falls of cream white horizontal and of heavy substance. Styles are same tone as falls, with a deep orange beard.

LILY PONS (Washington, 1934). Of Mary Geddes form it approaches pink in color. The standards are buff overcast with pink, closely domed. The falls are semi-flaring of rose-pink with lighter edges. The styles are buff and yellow, with a medium yellow beard. It has well-branched stalks and is a prolific bloomer.

HASSE OOBEA (Washington, 1934) has flowers of very heavy substance which are borne on tall well-branched stems. Large well domed standards, closely held together, of buff with yellow undertone. The broad falls are semi-flaring, a blend of buff, copper and pink.

KING PHILIP (Fewkes, 1932). A very large light blue violet self. The standards are broad and domed; falls are large and well rounded. Deliciously scented.

MELLOW MOON (Washington, 1934). A pale blend of good form and height. The falls faintly veined. It suggests Helios or Marquita but is a more compact and larger flower, the falls smoothly rounded, the standards domed. The stalk is widely branched. Height 45 inches. An easily remembered novelty and might be called a more brilliant and taller Doxa.

SUMMER TAN (Kirk, 1934). It is difficult to describe this iris but the name gives some idea of the rich tawny coloring. A most

distinctive iris of luminous tan with undertone of apricot. Medium height.

EROS (Mead-Reid, 1934). A beautiful salmon pink self. It has an undertone of yellow. Tall and exquisite in color and well deserves its H.M.A.I.S. which it received in 1934. 42 inches.

ALTA CALIFORNIA (Mit., 1931). Clear yellow flowers, faintly bronzed, firm texture. Tall, well-branched.

VESPER HOUR (Washington, 1933). A lovely blend of blue and cream with domed standards and semi-flaring falls. A tall flower of beautiful finish.

AVONDALE (H. P. Sass, 1934). A bicolor of fuchsia-red with heavy yellow beard. Large flowers of fine form borne on tall stalks.

SWEET AUBURN (Fewkes, 1932). White with a delicate pink flush—sturdy, fragrant and delightful.

BLITHESOME (Con., 1933). A new yellow and white bicolor. An iris of unusual distinction—38 to 40 inches tall. The standards are high and arched. Falls ovate and widely flaring. The whole flower glistens with iridescent gold. Styles and beard rich gold.

SPOKAN (J. Sass, 1933). This is a red-brown blend of great brilliance. Rich and unusual coloring with an influence of coffee throughout the flower. The beard is orange.

BLUE MONARCH (J. Sass, 1933). A large flowered deep blue-violet self—giving the effect of clear blue. Tall and well-branched.

SHINING WATERS (Essig, 1933). The finest blue of 1934 or 1935 and we really need more fine blues. Beautiful clear campanula-blue. Tall well-branched stalks.

CAMIDA (Wareham). One of the best yellows. The standards are primrose-yellow, erect and domed, deepening in color at the base. Falls are wide and of a darker tone with deep yellow reticulations at the haft, bright-golden beard. Medium height.

SAM DAVIS (Washington, 1933). A glowing red flower of good form, with domed standard, and semiflaring falls of firm texture. The blooming season is long.

CHAMITA (Wmsn., 1934). A distinct bronze-brown overlaid with gold. Said to be good for breeding. It is unusual and beautiful in color. Medium height.

RUBEO (M. M., 1931). Standards are deep glistening rose; falls are broad, thick texture and of deep velvety maroon—on very tall stems.

COOL WATERS (Washington-Nesmith, 1934). A tall pale blue iris with flush of pink-lavender throughout the flower. Smooth finish and firm texture.

ROBERT (Ayres, 1933). A splendid medium yellow with very smooth finish and heavy substance; large flowers well placed on sturdy stems.

CORTEZ (Nesmith, 1934). This brilliant iris has well domed yellow standards which are overlaid with faint rose at the edge. The falls are intense crimson-purple with velvety substance and are very flaring. Flower of firm texture and one of the last to bloom. Tall.

PINK LADY (Washington, 1933). Standards are warm pink with falls of deeper peachy pink tone. A peach-pink iris of rarest coloring and outstanding garden value. Medium height.

GOLDEN FLARE (Insole, 1931). Very beautiful and brilliant iris. Orange, apricot and yellow on tall stems. A most striking orange gold beard.

CYRUS THE GREAT (Kirk, 1934). An early dark blue variety, flowers are borne on forty-inch stems. Gives a splendid mass of color. Seems to be good for breeding.

PARTHENON (Con., 1934). A smooth cool white with pale gold styles and gold beard. Tall and stately.

JUNALUSKA (Kirk, 1932). A flower of great distinction. A blending of rose, copper and gold which is difficult to describe. Stems are tall and well-branched.

PINK BUTTERFLY (Washington, 1933). A late blooming pink blend. Standards domed and arched; falls semiflaring with deeper pink markings in center of each fall. The lustrous flowers grow more beautiful on the second day.

MALUSKA (Nesmith, 1933). A deep black-red self, velvety and rich in tone; domed standards and semiflaring falls; brilliant yellow beard, which intensifies the color of the flower. Tall and well-branched.

DAWNING DAY (Washington-Nesmith, 1934). A beautiful yellow with just a flush of pink throughout the flower. The standards are domed and close; falls arched and flaring. Tall.

ORIANA (H. P. Sass, 1933). Large flowers of clear crystal white; splendid form and substance. Medium height.

MARY GEDDES (Stahl-Wash. 1930). A very beautiful blend of unusual coloring. Standards salmon flushed yellow; falls same

shade overlaid Pompeian red. The tall stalks are widely branched and bear eight to ten flowers.

EL TOVAR (H. P. Sass, 1933). A richly colored and tall variegata. Brown, yellow and black maroon with yellow at center. A very brilliant iris showing to best advantage when planted with bright shades of yellow.

GOLDEN HELMET (J. Sass, 1933). The standards are tawny brown and yellow-ochre blended; falls morocco red, overlaid with ox-blood red. The beard is orange.

GOLD FOAM (Nesmith, 1933). A deep golden tall yellow self with erect standards and ruffled horizontal falls. Veining of deeper yellow at the haft, rich orange beard. Well-named as the whole flower has a delightfully foamy ruffed appearance.

FRANCESCA (Douglas, 1934). A self of deep Pompeian pink. The standards are high and domed, the falls semiflaring. Tall and stately with most unusual and beautiful coloring. Many flowers borne on tall well-branched stems.

MARQUITA (Cay., 1933). Large outstanding flowers of creamy yellow, with rose pink lines on falls. As the flower ages the center of the falls turn red, leaving a creamy rim to the flower. Tall stems.

MME. RECAMIER (Washington, 1933). A real pink iris; delicate in color, and has no orchid pink about it. Standards beautifully arched, and falls semiflaring. The whole flower has a luminous undertone of ivory yellow. Tall.

GLINT OF GOLD (Washington, 1933). A burnished yellow flower of smooth finish and firm texture, borne on tall well-branched stems.

ECLADOR (Cay., 1932). A very fine yellow. Standards canary-yellow; falls of a brighter tone faintly veined brown, orange-yellow beard.

MOZAMBIQUE (Mead-Riedel, 1934). A brilliant red-purple; large well-formed flowers, borne on tall stems. Fragrant.

NORDIC (Kirk, 1931). An unusually brilliant iris in the garden. The large flowers are well-formed. Standards are golden tan, the falls bright red violet. Stems are tall.

GUDRUN (K. Dykes, 1930). One of the most impressive of the newer whites. Huge well-shaped flowers with a dusting of gold at the throat, and gold beard, giving a warm iridescence throughout the flower.

JEB STEWART (Washington, 1932). One of the finest browns seen in the gardens this year. The deep rich brownish red has some influence of copper in the tone. Standards are domed, and the falls extremely velvety. Tall and widely branched.

HAPPY DAYS (Mit., 1934). An immense clear yellow iris which is an improvement on W. R. Dykes, one of its parents. The falls are deeper in tone than the standards, and the orange beard giving a glowing appearance to the whole flower.

JEAN CAYEUX (Cay., 1931). One of the best iris ever received from France. The flowers are pale Havana brown, flushed with gold and a gold beard. Difficult to describe.

ISHPANEE (Washington, 1934). A glowing iris of most unusual form and color. The flowers have yellow standards which are well domed and arched. The horizontal falls are yellow with a patch of red in center of each fall. Styles and beard are intense yellow.

JEAN LAFITTE (Washington, 1934). A beautiful combination of coppery rose and deep rose copper. Domed standards and semi-flaring falls. Tall stalks and exceptionally wide and low branching. Many flowers on each stalk.

IRISES SEEN IN MRS. LEWIS' GARDEN

June 4th to 7th

ARBUTUS (Loth., 1933). Seen in a planting less than one year old. Shorter than its usual 36 inches. A very lovely large flower. It is smooth, well rounded and of good substance. An orchid pink self with shadings of light yellow.

ROYAL SALUTE (Mill., 1934). This fine purple has standards a little bluer than Mme. souv de Gaudichau, with larger flowers and taller stems. It is fragrant.

WESTLANDER (Essig, 1934). A striking bicolor of pale lavender-violet and velvety hyacinth-violet. Falls are flaring. Stalks well-branched.

BROWN BETTY (White, 1934). An unusual blend of brown, blue and purple giving a changeable silk effect. Well poised flowers on tall slender stems.

AUTUMN DAWN (Nies). A clear bright blend of gold and pink.

LADY PARAMOUNT (White, 1934). A large primrose yellow flower on tall stems. A splendid new Dykes seedling which proved to be hardy in Massachusetts.

UKIAH (Essig, 1934). Rich red and brown tones. The standards resemble "shot silk" rich velvety falls. Beard and center of flower are old gold. Well branched.

TENAYA (Essig, 1933). Very showy flowers of blackish red-purple with iridescent reflections. Yellow beard. Lighted up by patches of old gold at the base of the styles.

NEWTONIA (Donahue, 1929). An old rose and pink amber blend.

ELEANOR BLUE (Salb., 1933). A lovely chicory-blue iris about the size and form of Santa Barbara.

IMPERIAL BLUSH (H. P. Sass, 1932). Beautiful large blush pink flowers borne on tall well branched stalks.

CHINA LANTERN (Essig, 1933). Large flowers with standards of old gold. Falls bright Bordeaux Red on tall stems. Hardy in Massachusetts.

SUNOL (M. M., 1933). A striking blend of golden bronze with a faint lavender flush on the falls. Another California iris which has proved hardy in Massachusetts.

WISTERIA (Loth., 1934). A light blue-lavender almost self, it has horizontal falls and a bluish beard.

SIERRA BLUE (Essig, 1932). Another beautiful California iris which seems perfectly at home in the cold east. A clear soft blue of beautiful smooth finish. Tall and well branched.

MOURNING CLOAK (Essig, 1934). A very dark blue-purple iris. Medium height. Said to be a valuable breeder for dark iris.

SITKA (Essig, 1932). A beautiful white iris of splendid form and substance.

Portland, Maine

A WORD FROM ROME, 1935

COUNTESS SENNI

■ The latest BULLETIN, very interesting, has an appeal for contributions and you will probably be overwhelmed by them. My own will be that last year and this. I did what was advised in an article—I can't remember whether in your or the English bulletin—and sowed the iris seed as soon as ripe, not allowing them to dry, and the result in germination is certainly a great gain. In Rome, no fewer than 65, out of about 260, had germinated by November, from a late August sowing, whereas gen-

erally only two or three appears before the Spring. We had a severe winter, with such repeated deep frost that it killed many shrubs, and the seedlings were sometimes heaved completely out of the earth, but it was easy to cover and push them back. I also followed the same article in testing the seed in water, and this summer noted upon every label how many seeds sank and how many floated, for it was beyond my resolution to throw away plump, apparently good seeds, which floated like cork. It is amazing how some wretched little seeds, which seemed undeveloped, sink like lead.

How different seeds are—some like very small balls, others as large as marrowfat peas, others packed into an almost square shape. Their pods, too, are different, and one gets to know at a glance the long, narrow pods of Durandal and Marquissette, which dry like leather and never split open long after the seed is ripe, and the round bull-nose pod of Sensation and Mme. de Beaumarchais.

Since hearing from Mrs. Murrell that her beautiful Pervaneh was one of only two seeds, I have given especial care to the pods of few seeds. In several cases the pollen I wanted to use was so caked that it had to be broken and rubbed to powder before being used, and was in every case noted on the tag, but to my astonishment they all “took.”

When I read in the BULLETIN of your members visits to other gardens in the felicity of being able to see the outstanding collections like Mrs. Pattison's, it fills me with deep envy. They do not know how fortunate they are! Think of being able to see new irises and compare them and decide whether one wants them or not, without having to buy them blindly, from a catalogue description or bulletin notes! They are as yet so little grown or known in Italy that all those within my reach contain only the overflow from my own garden, and in eight years my only glimpse of something different was a visit in 1931 to Cayeux at Vitry-sur-Seine, and the cut flowers he once sent to a Roman flower show. But, I have one thing to be very grateful for—a second iris garden—and when everything in Rome is burnt at the end of May, and Ambassadeur and Hiawatha are the last representatives of the irises and roses, I turn my back upon its desolation and come to the mountain garden, 3,000 feet high in the Appenines, and there begin to enjoy a fresh season of bloom,

so beautiful that in the last two years, I have tried to duplicate all the best things of the Roman garden. They are planted on a steep hillside, for the most part, which is probably why Purissima and Nelle Schwartz thrive in spite of several feet of snow in winter, or far worse, ice and raw winds sweeping down from a mountain pass. For three or four weeks they continue to bloom, more slowly and with greater substance and deeper color in the cool air. The hills are covered with yellow broom, the cuckoo calls all day, the hybrid lupins in all colors are a beautiful companion to the iris. There is no telephone, no interruption of any kind, and it is possible to enjoy the irises in every light, poised against the morning or the evening sun as they never can be in the low-lying Roman garden.

They end between July 1 and July 15, according to the season, so that from the first, Loetitia Michaud in Rome, around April 20, I have two and a half months of irises, which is something to be valued.

From what I read and see, progress lags in the real pinks and is not really marked in the reds, for Cheerio and others sound as if they were bicolors and lack the solid color effect a deep self-color gives. There are some beautiful colors in red iris; Mr. Sass' 30-40, my favorite Victor Hugo, etc., but none with shape and size equal to the iris of other colors. Cayeux lists five new ones, Belphegor, Brasier, Rabagas, Voltigeur and Mme. Daridan, but they are very expensive yet, and may be no better than Vert-Galant. For general garden effect in a cheap very near-red, his Durandal is uncommonly good; it is tall, very free flowering, a self, and *with the sun behind it* is a very good red.

Zampa would always be a good blue for color, but its effect is greatly enhanced by being a self, and if its large flowers were more freely produced it would be a widely popular iris. How parsimonious some irises are! Rubeo has not flowered yet, after two years; Morera never, after five. Mme. Serouge once, three years ago; the good dark Chimene the same; San Luis Rey, only occasionally and Dog Rose the same. As for Pink Lustre, which has a beautiful color and a valuable lateness, I haven't seen it for three years, nor Wild Rose, though both are alive and well, and not too deeply planted—which prevented flowering before I learned better.

For those who like warm and brilliant mauve, Armide is very

handsome, a larger and better Le Grand Ferré, and Tartufe is very striking, a rich mauve bicolor. I have been given the Black Douglas and am very anxious to see if it or La Chouane is to be the "improved Louis Bel," which will be a great addition to our gardens. La Chouane was very dark and very large as I saw it this year, but the drought did not do justice to any iris, old or new. It is a pity M. Millet has given up iris breeding and his business; he had a good eye for color, and had achieved a fine shape and remarkably stout substance in his later seedlings.

There are many new pumilas and intermediates, but are there as many late-flowering iris? It would be a great boon to extend the iris season by two or three weeks, with varieties of better shape and color than Cayeux's "Art Series."

Chracea Coerulea is very late and has been widely used, but better things might be obtained from Reverie, Ambassadeur, Delicatissima, Corrida, and those very late (uninteresting but for this fact) Raffet, Velouté, La Baronne, Mme. Souesse, Suzon and Jacquesiana.

The other quest I would warmly recommend to your members with favorable climates is to try to obtain new "color breaks" from the old "purple flag" with its valuable habit of flowering from the New Year on in a mild winter. It is variously called florentina, Kharput, Germanica and other names; even Mr. Hoog, the head of the great firm of Van Tubergen, could not define it, saying they are too mixed, and all the satisfaction obtained from a Sweedish botanist, after long reflection, was, "Madam, it is what Linnaeus called *florentina*—and isn't!"

Rome, Italy.

IRIS OBSERVATIONS IN SOUTHERN CALIFORNIA

LENA M. LOTHROP

■ I have decided to divide these notes into three parts. The first to be devoted to comments on a few remarkable California seedlings, the second section will contain comments on named California varieties and the third, remarks about other irises as grown and seen in Southern California gardens.

All iris enthusiasts who are watching reports on the pogocyclus experiments at Whitehill will be glad to know that there is a marked advance toward the goal Mr. White has set for himself. Two very beautiful irises come from the cross of Jubilee on Polyhymnia. One of very large globular form is oyster-white covered with minute dots and veins of soft grayed-purple. The other has broad flaring falls and is heavily veined with intense red-purple. Lorteti \times "Yellow M" (an unnamed bright yellow from Prof. Mitchell) gives a beautifully blended rich purple flower with flaring falls on a thirty inch, three-branched, stem. An oncocyclus seedling (3-A-1) \times "Yellow M," bloomed rosy purple covered with fine veins. The upper part of the falls are burnished bronze. This seedling has elegance and finish. The cross of 2-A-2 (Sofarano \times Susiana) \times "Yellow M," however, produced the crowning glories of the season. Several of this cross have enchanting flowers on three-branched, forty-inch stems. One with distinct yellow ground is strikingly veined bronze-red. Another, over a creamy undertone, is most beautifully marked in Van Dyke Red and it is so perfect in form and construction that it would be hard to excell in any class. There was one having the very dark tones of Mars Violet. On another the color is quite smoothly blended from old gold to Neutral Red with rose-purple veins and a startling black patch. These hybrids were the sensation of the garden.

A great many choice pogon seedlings in all shades of yellow, with broad hafts and petals and heavy substance bloomed in the White garden. Most of them were related to Lady Paramount and to Dykes. With this splendid opportunity for comparison we are still of the opinion that the Lady will be hard to equal. As the season waned there appeared from a source unrelated to Dykes, a

remarkable yellow. The parentage is (Mirasol × Purissima) × Rubeo. It has a well-branched 47 inch stem with flowers $5\frac{3}{4}$ x 5 inches. In form, it is entirely different from the Dykes family, having more narrow hafts but broad round petals. The very clear color is a few shades brighter than Lady Paramount. The substance is good.

In the Reibold garden we found a charming yellow from Leonardo de Vinci × Easter Morn. It is being named Welcome. On a three-year plant were nine 53-inch well branched stalks. In form, it is like Easter Morn with wide flaring falls.

Mr. Milliken produced the most outstanding white seedling I have seen this year. 657-17 is a blue-white with surface of satin. In form and in texture it is unlike any of the California white Irises. It is superb on stunning stems sixty inches tall.

In blues, I have never before seen anything like an Aurifero × Sylphide seedling. Indeed Donald Milliken accused Mr. White of doctoring the soil, it was so blue! Whether Sylphide had anything to do with the production of this iris, who can tell? Perhaps its influence was responsible for breaking up and remixing the pigment but the flower is the flower of a pogon iris. The 36 inch stem (one only) is poor but the form of the flower is good and the substance exceptional. The gorgeous orange beard which glowed from afar grew on an embossed rib!

In deeper blues I remember with pleasure a very floriferous small seedling of the Reibolds'. It is from Mme. Gaudichau and Claridad, with much finer texture than Mme. Gaudichau and bluer. The Standards are satiny and the falls are like fine velvet. The blue beard is tipped with bright gold in the heart of the flower.

A long row of Acropolis × Modoc seedlings in the White garden gave a variety of blue-purples. The best one is being named Blue Peter. It is darker and bluer than Black Wings and much taller, having 42-inch stems and well placed flowers 5 x 6 inches. There is no white visible in the haft where the very velvety texture of the blade of the falls blends with brown. The color does not fade at the edge of the petals and the dark beard is lightly tipped with orange.

Modoc has always had to be discounted because of its short stems and the crowding of its blooms. Now there is a seedling like it but a little richer, a little larger and better in form, on tall perfectly branched stems. It is an orphan and is being named Incognito (White).

There are two lovely irises in shades of rose-purple among the Reibold seedlings that I advised having registered. Mr. White also has a rose-purple seedling out of Sequoiah × Dykes which has the broad flat flaring falls of the Dominions. It is a very beautiful flower.

The Milliken's have an intriguing "pink" from Mauna Loa × Dauntless. The perfectly formed flowers have heavy, smooth petals with evenly laid color. There is a distinct arrow of peacock-blue at the point of the beard. It is tall and large on a splendid stalk.

A more lovely Persia bloomed at Whitehill. The standards are lighter than those of Persia, a silvery gray with ravishing opalescent tints, and the falls, not so dark as Persia, are many shades bluer.

I think all of these bearded iris seedlings will be available for our gardens in 1936.

Of the newer named varieties I will first mention Kildea (Williams). I cannot say where the name came from. I have questioned the Doctor seriously about it but he insists it has nothing to do with his past or present. The iris is an apogon. The remarkable thing about it is its color for it is yellow—a beautiful, soft, primrose yellow. It is a seedling of one of the Louisiana white irises, selfed. This white iris posed first as *hexagona alba*, the next year it went under the title of *elephantina* and now it taking shelter under the name of *citrocristata alba*! Kildea is, however, a name we can tie to, having had the approval of Mr. Gersdorff. The iris is as lovely as anyone can imagine and is as husky as its very robust parent.

Sunny climes tend to the use of bright colors and hot dishes. Women wear colors in California that they would not think of wearing in the East and they want color in their gardens. I have heard more than a few gardeners (women) insist they do not like white flowers, yet how utterly oblivious to these expressed tastes have been the genii who determine the color of iris seedlings! The genii have at least recognized that white seedlings in California would have to be extraordinarily good or they would not be tolerated. In that famous C-4 pod which Mr. White produced (supposed to be a cross of Susiana or Purissima, and may have been for all we know) there were many beautiful whites. Since their first blooming in 1932 they have gradually been weeded out until only three remain. Honor Bright, with its enormous seven inch frosted flowers, and petals thick as shoe leather, is the most spec-

tacular. One visitor breathed "Am I really seeing such irises or am I just dreaming them!" Due West is another. I cannot pass it without chanting "Lovely, lovely," it is so full of grace, and Another Day is the third. This has pearly domed standards and wide flaring falls with fluted edges.

Purissima (Mitchell) is well known and it is as lovely and reliable as ever. Eastern Morn (Essig) also has made a name for itself. Prof. Essig has another white iris that I love, in New Albion. It blooms early with San Gabriel. It is simply perfect and will be a joy forever to those who grow it. Sitka, another Essig iris, in white is not so good. It is late and it is large but the hanging falls pinch and the texture is coarse. Ivory Coast, also an Essig iris, might be called a white although it is tinted greenish-yellow. It blooms in season and out—most out, and is rather messy.

Sierra Blue (Essig) is a stunning iris of distinct form and metallic sheen. It is one of our finest irises. More in the blue tone are two other of the Essig irises, Pale Moonlight and Shining Waters. I cannot make up my mind which one I like better. The vertical edges of the standards of Shining Waters roll out—a trait which I consider to be a fault. All of these irises are vigorous growers, prolific in bloom and are very large.

So far as I know Fair Enough (White) is the bluest of the tall bearded irises and it is one of the choicest. It has large flowers made up of broad, crisp, sparkling petals. The well spaced blooms are on tall stems from which issue many flowers over a long season. Another Whitehill blue that humbles me in adoration is Early Mass. The color is very pure and although the flowers are not so large as the others I have mentioned, they are poised with lovely grace on slender stems.

Westways is a little blue iris that will grace any garden or any home. It is an *urmiensis* seedling crossed by the little yellow bearded iris, Bonita. Both parents are yellow but all of the children are blue. This particular seedling, Westways, is one of the most adorable flowers in existence. The small globular blooms are light violet-blue with a solid patch of deeper blue at the end of the glowing, golden beard. The stiff, little, branched stems are slender and graceful. Westways was constantly surrounded by a group of admirers when she made her debut in a bowl at the Pasadena Show. She is a rampant grower and free bloomer.

Among the large dark blues we have Royal Salute (Milliken),

Aeropolis (Berry), Tioga (Salbach), and San Diego (Mitchell). All are good but we have better dark blues on the way. The huge and impressive hybrid, Morrison (White) is a blue-purple but it is really in a class by itself.

Prof. Essig has given us fine irises in the red-purples; Tenaya, Little Smoky and Ukiah which has blended, red standards and dark, rich, velvety falls. With ordinary culture it grows 36 inches tall, with a fine stem. I would rate it high. Ahwannee (Essig) has a nice stem—otherwise it was not attractive, as I saw it. Red-glow (Essig) is a darker Beau Sabreur. The beautiful, dull gold standards are delicately veined. The rich velvety falls are pale at the edges to harmonize with the standards. In reality, it is a blended variegata. It is a good iris. My own Gift has metallic gold-brown standards and rich velvety falls of solid color with no white in the haft or near the beard.

Also among the red-purples of high standing are Berry's old Mauna Loa, which, like San Gabriel and Purissima, never grows old, and Erebus, which is not so well known, and Carnelian (Lothrop) which is good when well fed. Rubeo (Mitchell) is not new but it still is an impressive iris. It would be in greater favor if it were more vigorous. I have lost it three times, once from rot and twice it bloomed itself out.

Red Flare (Milliken) is a free flowering iris of bright color and a pleasure to have in the garden when it does not grow too tall.

I do not know where in this list to place Hollywood (Essig). It is an iris to enjoy, forgetting to be critical of the stem, placement, form and other qualifications, for where else can we find the same lovely color—unless it be in a faded version in the impossible Isline.

Blended colors are not so attractive as others to me but I like Brown Betty (White) for it is a graceful iris. The color runs the gamut of browns, from gold through to brownish purple. I also like my own child, Theme (which is a much larger iris), with its blending of grayed-blues and red-purple. Gold Lace seems to sell well. It is a blend of old gold and pinkish lavender. Mr. White has a beautiful copper blend, Fiesta, which he extracted from Vishnu by the use of a yellow. Many foreign blends lack substance but these will endure anything except a burning wind from the desert.

Mr. White has created a variegata which grows well in California. It is registered as View Halo. The standards are bright

and clear and the falls are rich. It is tall and has a well branched stem, is floriferous and increases rapidly. What more could we want?

We are proud, indeed, that Lady Paramount (White) originated in our neighborhood. When it first bloomed in 1932 some thought that it might soon be followed by better large yellows but so far as I know at this time its most serious competitors are growing in the White garden. It has height and proportionate size with rare grace for so large a flower. It has firm substance and close texture. The color is good and because it is so pure in tone it carries well. It is a vigorous plant and blooms freely over a long period. In the large and finely executed Milliken exhibit at the Pasadena Show, Lady Paramount was the magnet which drew all eyes.

Lucre (White) is a very deep yellow. There are those who like them that way but I have always contended that it is the lighter and medium toned yellows that we need for our gardens and for exhibitions. Lucre is tall and has good size. It blooms freely and multiplies rapidly.

California breeders have introduced two beautiful light yellow irises in Natividad and Sweet Alibi. Natividad is creamy yellow on a beautiful upright stem. There is deep yellow in the haft and on the edges of the petals near the center of the flower. This is one of Prof. Mitchell's originations. Sweet Alibi (White) is more glistening and is in tones of brassy yellow with deeper shades in the heart of the flower. The petals are broad and flat and remarkably thick.

Alta California (Mitchell) is much liked here. It has an opaque quality.

Although most of the eastern and foreign irises do not perform so well as those bred at home, there are some of us who read the catalogues and send away for irises whose descriptions are appealing. It is a good thing to know what is being done in breeding in other localities.

I took notes on a number of these irises which I am listing alphabetically with brief comment. They were carefully grown in good soil but the climatic conditions are entirely different from those in which they were bred.

Anna Marie Cayeux. Thirty-six inches tall. Flower rounding in form, good substance and texture. Standards crisp. Lovely blending.

Aurex. Dull color and lacks substance.

Beau Sabreur is a lovely variegata. As I have written before, the standards are like beautifully veined, palm-leaf fans with tips touching. The falls are of fine, bright velvet. Stems perfectly branched. Not tall but it has "class."

Black Wings. It is a nice, rather dwarf, iris. It never grows more than 24 inches tall. It has no "life" in color or sheen to brighten the garden.

Blue Banner is a small iris with beautifully poised rich flowers on nicely branched stems. A lovely blue bicolor and a free bloomer.

Burning Bronze is a dull red-purple blended with brown at the throat. It has good form with flat falls and conic standards. The veins in the standards are not attractive and the falls are not very velvety.

Cheerio. As far as color is concerned. Cheerio is IT and the falls are most certainly a fine piece of velvet, but the falls do pinch and the vertical edges of the standards roll out, which is a fault.

Coralie is just another prettily colored iris.

Deputé Nomblot. I saw several healthy clumps of this variety but altogether only one stem of flowers was produced. I was told that it had performed in the same fashion in previous years.

Duart is large and tall but the upper part of the fall is white. Not good as I saw it.

Erebian is a well branched dark iris but it is not rich—there is too much white on the falls.

Festive, Mr. Morrison's variegata, is very festive indeed. The stems are well branched, the standards are a clear bright yellow and it is floriferous.

Gold Standard is bright but it has small twisty petals.

Mary Elizabeth is insignificant. It has too much white on the falls.

Mary Geddes is a pretty piece of color.

Nurmahal resembles Sandakan but is not nearly so good.

Nusku is a soft rosy blend but is not outstanding.

Persia has well branched stems forty inches tall. It is an interesting and pronounced bicolor. The standards are gray, tinted lavender and edged blue-lavender. The falls are blue-purple with white near the beard but the hafts are bronze. Petals are not very wide but it is a distinct iris.

Picador is as reliable as Sequoiah. The clump was packed with

stems fifty-three inches tall. It is a good blended *variagata*.

Pink Satin is at last becoming acclimated. It is taller and more attractive this year than ever before.

Red Dominion is a lovely iris. It is lovely in color, form, poise, stem and in its freedom of bloom. It is a red-purple bicolor.

Red Ember has smoky standards, red-purple falls and orange beard. It is a nice iris that possesses what I call "finish."

Red Robe lacks substance and the color fades.

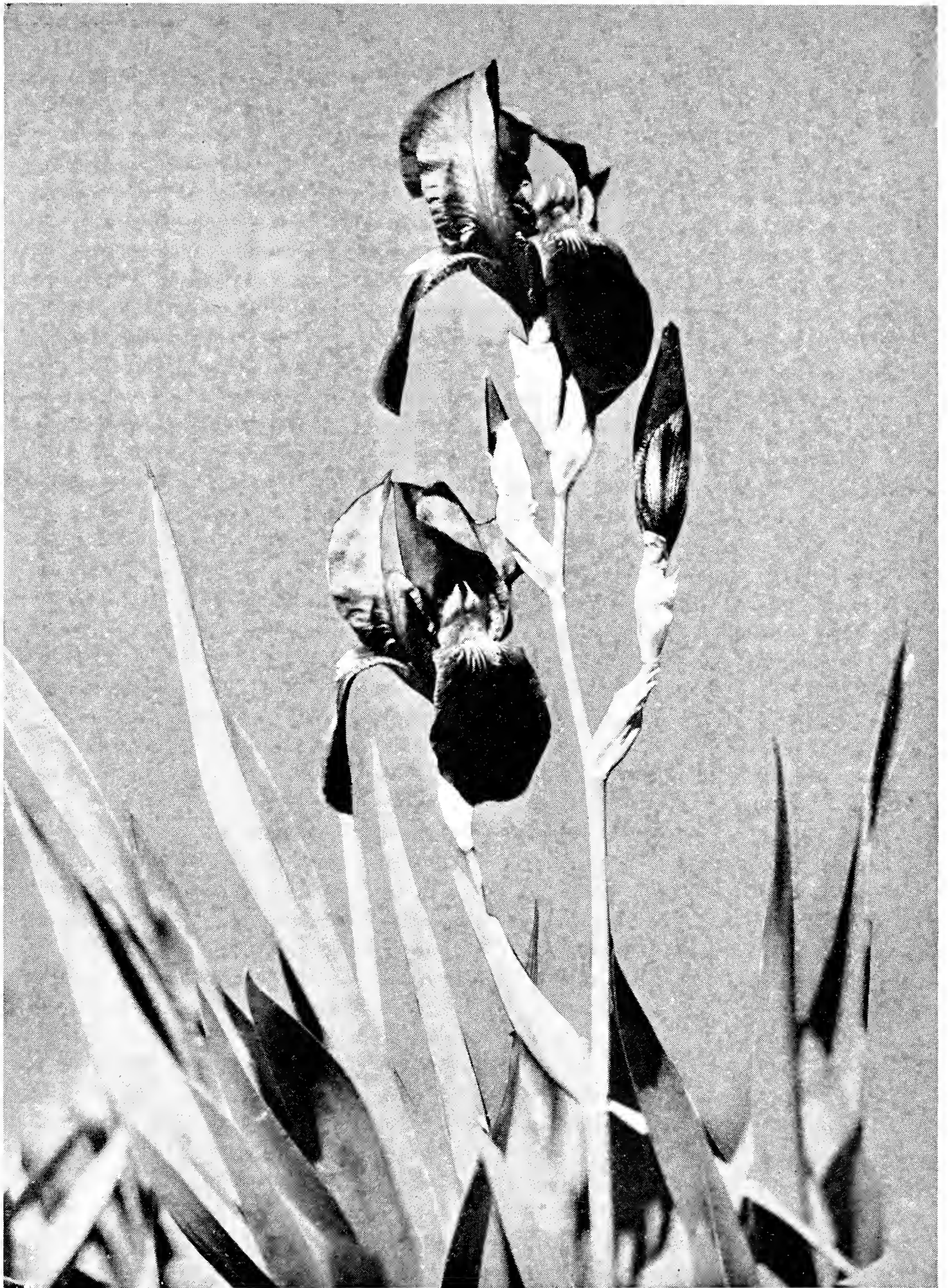
Rob Roy has a bright color which attracts but the petals are so thin that the flowers begin to shrivel almost as soon as they open.

Sandakan is a very fine iris. Thirty-six-inch, well branched, stem with flaring flowers in proportion. Excellent substance and fine texture. The standards are bronze flushed lavender. The falls are very velvety red-purple, with brown at the sides of the beard and in the haft. I suppose one does not know, seeing it is a Williamson iris, but it appears to have Dominion blood.

Trails End was a disappointment and it also made me sad as it is not up to the high standard of Mr. Williamson. I saw four stalks thirty inches tall. It looked like a cross of a yellow on Nancy Orne but was not nearly so good as Nancy. Where there is white in Nancy there is pale yellow here. In the mature flowers of Trails End, the standards gap wide open. The small flowers (4 x 4 inches) bunch at the top of the stem in a mussy boquet.

Yves Lassailly is pretty when newly opened but the flowers fade badly and are small.

Zaharoon is well branched and has interesting color but the petals are very thin and the flowers transient.



Iris, Hon. H. A. Bruce. A Groff seedling

TRITE THOUGHTS ON THE DISPERSAL OF A COLLECTION

RICHARDSON WRIGHT

■ Providence (or the elements, if you will) is always doing strange things to my garden and playing ducks and drakes with my fondest dreams. It sends pests that turn a pleasant pastime into a warfare. It endows everything hereabouts with diseases that make the tool shed look like a clinic. It permits the ugly to grow rampant and grudgingly allots only short life to the beautiful and tender. And those past two winters, it has called a final curtain on what was to be a solace and beguiling interest for years to come: it reduced a respectable iris collection to a shambles.

I call it a respectable collection because it was composed mostly of the conservative and tried Tall Bearded Types. Begun in a small way, since my purse was small, it grew by the kindly accretion of friendly gifts until, one July in the Platinum Era, I defied Fate and shot the works—indulged myself to the extent of everything I wanted. In the succeeding years a rhizome here and a rhizome there was added until a little over 200 varieties were ranked along the pathsides of the Top Garden, giving, with dignity, an edge to cutting flowers and cabbages alike.

As all the books and the BULLETIN told me I should do, I dutifully ticketed these and set down their location in a note book and presumed to make what the ladies call color schemes. The labor was all very pleasant, and when blooming time came around the reward was worth the trouble. Not only could we feast our eyes on well organized beauty, but we filled the air with the music of their names. It gave a cachet to our garden perambulations to recite such pretty phases as Midgard and Prospero, Candelight, Canopus, Afterglow and Wyomissing. The various ladies became our intimate friends: we held converse with Her Majesty, Mme. Henri Cayeaux, Mrs. Valerie West and Mildred Presby; we even grew familiar with Aphrodite. It was pleasant to find Lord Lamborne always at home when we called and Queen Alexandra and Lady Sackville.

This intimacy was due to the labeling, of course, and the fact that the ranks kept their place and did their "routine" with the regularity of a well-trained pony ballet. Never did one of them get out of step.

Then, every third year, they were lifted and replanted and re-tagged and the increase handed to neighbors, thereby gaining for us no end of a reputation for generosity. Perhaps it was this tri-annual labor that I enjoyed most. I figured, the last time I lifted and reset this collection, that I would be an aged person of 48 when next I should have to do it and the next time in my early 50s and so on until that day when I would be pushed around a la William Robinson and give planting directions in a squeaky voice and with a cane.

But Providence and the elements had other notions. There came the last two hard winters. Long stretches of sub-zero weather, with sudden flights into tropical temperatures. The borer, unnoticed because I was intent on other garden affairs, moved in and made the rhizomes their home. It must have been a satisfactory home, for they stayed, increased and saw that their progeny was well housed about them. The desolation in that collection the second spring could not be overlooked. The serried ranks were shot full of holes. Instead of orderly lines of sprouting leaves there dangled indiscriminate copper tags that my wife referred to as "wet wash."

There was nothing to do about it. In spite of maps and notes, the neatly ticket dreams were hopelessly jumbled. My plans for the future and all that vision of a William Robinson old age went by the board. I called Charlie, told him to lift 'em all, and plant 'em back as he felt like.

And yet I feel that there will be compensations even in this chaos. It will be like pushing through a crowd and seeing a face dimly familiar and the next block saying, "Ah, yes, that was Mother of Pearl!" Or, like meeting a person you thought surely ought to be dead by this time—Zwanenburg still flopping its falls and Shekinah still as subtle as in the old days.

As for those tags, so laboriously embossed in those far-off evenings—I'm thinking of nailing them up in the tool shed. Making a sort of "Our Boys Who Died For Their Country" memorial plaque out of them. They can join all those Primulas and Roses and Clematis and hosts of alpines which fought and bled on this Connecticut hillside and finally went to whatever Valhalla there is for good flowers. And maybe on Memorial Day I will make a wreath of all the things I can't kill in this garden and hang it reverently beside the names of all those that Providence, the elements and I have annihilated.

OUR MEMBERS WRITE

Native Iris and Others

■ 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 shoots on 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 Olymic 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 beside 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.

On our rounds we heard of *Iris tenax*, and it grew to the south; we went and added to our collection.

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.

In the mountains of southern Oregon, I want to do more work for the knowledge of them in that region is rather meagre. This summer we found one with spathe valves at least four inches long and very pointed.

To the west, along the Coast from northern California, Redwood Forest *Iris Douglasiana* is seen everywhere, with its evergreen foliage and light blue flowers. Although we have seedlings that are supposed to be bronzy golds and whites—maybe and maybe not.

In one place, we found a dwarf variety that is quite short in stature and the three years that it has grown in our garden it has not reverted back to its normal type. What a treat for the rock gardeners. It has some foliage and flower but is only about five to six inches tall. Whether the seedlings revert to type or not awaits to be seen.

Where the *Iris Douglasiana* and *tenax* meet in southwestern Oregon we found natural hybrids of the two. They have the evergreen habit of the former but the leaves are narrow like *tenax*. The flowers are the most beautiful violet that I have ever seen on any iris. I hope to make more of this hybrid because it is too choice a gem to let go unknown.

On farther north the *Iris tenax* predominates with its beautiful flowers of lavender shades. These western iris seem to be perfectly hardy in our temperature here, down to six and eight degrees above zero, without any fuss or bother and stand lots of abuse in way of lack of attention and competition of other vegetation.

I was glad to see some comment in the BULLETIN just received relative to *Iris xiphioides*. Seemingly nobody knows much about them. We have looked through all the literature we can find and through correspondence we have tabulated over sixty named varieties, and are attempting to secure as many of them as possible. To date we have planted about twenty named varieties and will try to eliminate the duplicates in name.

The English iris does exceedingly well with us. Our soil is about pH 6 or 6.5, with generous share of sedge humus in the soil on a heavy clay subsoil, and a shallow water table. They do not make top growth in the Fall like *xiphiums* (Spanish and Dutch) but wait until Spring, hence are hardier with us than the latter, which sometimes receives frost injury. But, when they do start they shoot right up and close the iris season with their wealth of unrivaled color. They multiply like weeds, both in seeds and offsets. This Fall when digging them, I counted six and seven sizeable bulblets besides the mother bulb.

So here's to the orchids in the iris family! May their tribe increase.

HARRY L. STINSON.

From Connecticut

■ The Iris Garden of an enthusiast is never finished because one is always finding new color schemes and new iris to try, which means almost constant shifting.

Two changes noted for next year are the grouping of Solferino, Ernestine, Pluie d'Or and Santa Barbara in front of white.

At the entrance to the garden this year was our first bloom of William Mohr, all alone and breath taking. A little farther on Micheline Charriere and Van Cleve majestically held their own; next, Lona and Apricot with Sweet Lavender.

The next group is the largest and most satisfactory one. It starts with Churchmouse, then come Elsinore and Ballerine backed by Mme. Gaudichau; Midgard and Tenebrae with Mother of Pearl in back. Black Knight breaks this group and Pluie d'Or with Santa Barbara follow.

A group of Peonies, Delphinium, Bristol Fairy and Lilies intervene, then, Santa Fe, which after three years, blossomed all by itself with the turquoise lining of the pool and the dark green of cedars behind it. It was worth waiting for and was greatly admired by everyone. Balancing it on the other side is Wambliska which was disappointing. Freda Mohr, however, keeps the balance of interest on that side of the pool which is more or less surrounded by Japanese and Siberian iris.

After Wambliska we have Dauntless alone, then Snow White, followed by Yellow Moon with Queen Caterina and Mother of Pearl in back.

The rest has grown very much out of hand.

I like to cut groups of iris with other perennials or with large clumps of white or pale yellow iris which not only cut the other colors, but tie the whole planting together.

This year seemed to be a very good one for seed pods to form, but so few of them came through without being riddled with worms. Does anyone know how to combat that pest?

RUTH ADT.

For 1936

■ Buffalo Gardens should be visited by fellow-members on their way through to Hartford next June, especially that of Mr. Charles K. Bassett, since it is so easily located, at 2900 Main Street. Mr. Bassett has been a member of the society since 1927 and is an enthusiastic iris lover. He has discovered the secret of just the right environment to grow iris to perfection in our climate. His soil is naturally rich in lime, but still he adds about 50 per cent finely ground Michigan limestone.

Among the varieties which were unexcelled by any we have ever seen were noted the following:

Blue Velvet, Cinnarbar, Coronation, Depute Nombot, Desert Gold, Dorothy Dietz, Fulgore, Helios, King Juba, King Tut, Mary Geddes, Mrs. Valery West, My Maryland, Rameses, Red Dominion, Rosakura, Souflot, Vert Galant, Victor Hugo, and Wm. Mohr, and Zaharoon. It is surprising to see what grandeur a perfect environment will impart to our long discarded Prinzess Viktoria Luise.

His garden, like that of Dr. Ringueberg in Lockport, is surrounded by huge elms which do not cover, but offer just enough shelter to keep the fragile blooms from drooping in the hot afternoon sun.

M. F. S.

Iris Pallida Dalmatica at Home

■ Every reader of "Illyrian Spring" by Ann Bridge, the talented author of "Peking Picnic" and "The Ginger Griffin," must have paused in delight at her description of *Iris pallida dalmatica* growing in its native haunts. Those particularly interested in iris must have been doubly enchanted by the picture her pen has painted. Is there room to quote from her book in THE IRIS BULLETIN?

"But Nature in Dalmatia is singularly open-handed, and distributes beauties as well as wonders with lavish impartiality.

Within a few hundred paces of the source of the Ombla they came on a thing which Grace was to remember all her life, as much for its beauty as for its incredibility. The road here swung round to the right, pushed out towards the valley by a spur of the mountain side; some distance above the road the slopes of this spur rose steeply, broken by ledges and shallow gullies, the rocks of the usual indescribable tone of silvery pearl color. And all over the ledges of these pearly rocks, as thick as they could stand, grew big pale-blue irises, a foot or more high, sumptuous as those in an English border, their leaves almost as silver as the rocks, their unopened buds standing up like violet spears among the delicate pallor of the fully-opened flowers—*Iris pallida dalmatica*, familiar to every gardener, growing in unimaginable profusion in its native habitat. Now to see an English garden flower smothering a rocky mountain side is a sufficient wonder, especially if the rocks are of a silver color and the flowers a silvery blue, and Nature, feeling that she had done enough, might well have been content to leave it at that. But she had a last wonder, a final beauty to add. In the cracks and fissures of the rock another flower grew, blue also, spreading out over the steep slabs between the ledges in flat cushions as much as a yard across—a low-growing woody plant, smothered in small close flower heads of a deep chalky blue, the shade beloved of the painter Nattier. Anything more lovely than these low compact masses of just the same tone of color, but a deeper shade, flattened on the white rocks as a foil and companion to the flaunting splendor of the irises cannot be conceived.” (*By permission Little, Brown & Co., Boston, Mass.*)

Could even the pen of Reginald Farrer have given us anything more exquisite! And for the benefit of those who have not read the book I will add that the lower growing blue flower was said to be one of the Boraginaceae. More than that this family has blossoms of a delicate azure blue I do not know.

ELEANOR P. JONES.

Re Iris Fan Letters

■ Not all of the questions that come in fan letters, when one happens to have put out a successful iris or so, are of the casual order. Most of them are easily, and I might add, gladly answered.

Such requests, for example, as parentage and how to set out, notice I say set out, to improve color and substance belong in the latter category. Occasionally, however, comes a question to which

you wish you could send a useful reply and for whose answer you have yourself been seeking a solution for many moons. That, of course, makes a fan letter more interesting.

I refer to the question—what can be done with or about a seedling that has come into the world minus side shoots or sprouts with which to carry on in the orderly manner of a normal iris?

Certainly more often than usual these plants are crowned with a flower of such beauty and perfection that you wonder why nature has played that kind of a trick on you.

It is a tantalizing thing to see a splendid blossom of a brighter red, or perhaps a finer blue, and known that as a flower its time is marked, that it is fated to go out of the picture unheralded in any catalog (where had its courses been normal, it surely would have found a place). What you see before you is not a promise for the future but a one and final effort to show what the chromosomes could do if they really tried.

As a hybridizer, you know, too, full well, that to recreate again its tone and colors would be impossible, unless, some strange break in the wheel of fortune should smile twice and I have never known that to happen. Mate it as you will with your best of a similar color and use their pollen on it in reciprocal crosses, its issue still will be different, never the exact replica of the one you brought into being but could not hold.

The real name of these freaks is a non-branched rhizome, a miscast. Somehow, I like to use these technical terms. It makes me think that others will think that I am a “scientific,” not just a “hibridizer” as the British would say, or just an eye doctor studying heredity as all doctors do and must. One who often wondered why a cross-eyed parent with the right eye asken begat a seedling with the opposite eye turned sideways. Anyway it seemed to me that often happened. Perhaps that is why they call them cross eyes. But to get back to the subject—these terms are not mine but come from my good friend Haller, just forty leagues Northwest of my garden, who has given on many occasions of his technical skill and knowledge when called in consultation. Of course, these real “scientifics” tend to think in terms of heredity always. Perhaps they are right. He says that it probably works as a multiple factor. I like that phrase, too. A recessive coming out rarely but capable of being transmitted by the pollen parent. He had one among his seedlings but before he could set the camera

to perpetuate its particular deficiencies he says it disappeared. Mine are not as speedy as that but they go out just as inevitably. He also says that in looking over the thirty thousand seedlings Bruce Williamson used to grow, he saw only two or three during many visits there. Among such a vast number, a few more or less might have been overlooked. The number in my garden seems fairly constant, about two every year whether the seedlings number three thousand or only five hundred strong.

I have used the pollen to the last granule when these miscasts were good and crossed on them heavily as well. One would almost expect the garden to be dominated by sproutless miscasts. Fortunately, this has not happened, but as my ratio is higher, heredity may have had its influence. Unfortunately, records that were started as to the transmission of this defect were not followed up. It would only take a few generations. Perhaps some other "hybridizer" has tried and can tell us.

Some years back, by far the best red I had grown or have ever seen, previously or to date, came marked like that among my seedlings. Knowing how they acted, yet hoping by some chance, I could force fate to change its course, I said to my gardener, "Bill, I'll give you twenty-five dollars on my return if you keep that fine red one going and make it send out some side shoots. I'd rather lose a fifty dollar note than that iris."

Bill's ears pricked up. He knew he was up against a proposition, because he had failed to make two splendid ones survive the year before when I had offered him ten dollars apiece for them alive and kicking when I came back. And did Bill love these little extras! No use—! I knew the answer as we stepped out of the car that brought us from the station. Barely stopping to greet the gardener and others there to welcome us and not even giving the dogs a friendly pat as they bounced around, I made straightway to that part of the seed bed. One gets that way when he is a hybridizer. The stakes were there conspicuous in their white paint that had been used to keep Bill's attention focused on that spot. Where the flower had been was only the dried up remains of the fan and rhizome with just as much life left as in any mummy found in the Valley of the Kings. And what can we do about it?

Let me tell you what was tried at Edge Hill, not for what it is worth, for the very good reason that not a single method used

was worth a tinker's darn, but just as a matter of interest to the real iris seedling grower.

As follows—extra care in feeding, special watering, keeping dry, a condition supposedly desirable in the good old days, withholding pollen so that no strength required in the maturing of seed pods would prevent the formation of sprouts, taking off the bloom stem at the base as soon as the first flower had fully opened, removing both stem and leaves down to the crown which sometimes encourages sprout growth, scarifying the rhizome and re-planting in the choicest soil and place, and with a sharp knife cutting it as we do potatoes into five or six sections and planting in carefully sterilized sand in my greenhouse. Only once did I see one making any apparent effort to maintain its hold on life. This showed an enlarged root extending about two inches below the base of the rhizome with a bulblet or corm the size of those seen in gladiolus. As it happened by some strange perversity of nature, this one possessed no value whatsoever and was discarded. Perhaps this bulblet should have been planted—but why did not that red one have a corm? It may easily be that some one has been successful and learned a trick or so about keeping them going that has not been broadcast. If so, what a big fuss about nothing all this is. Tucked away there is a dim recollection of someone telling me during the rush of a blooming season, when many were coming into the garden, how he or she had kept one of these freaks alive. Inquiries made among a few hybridizers have failed to locate the one holding this secret.

Microscopic sections should, I grant, have been made to disclose the presence or absence of embryonic buds. A splendid yellow miscast showed up this year and again it was beyond peradventure the best, among a score in form, branching, substance and depth of color. I bred every flower and used its pollen freely on other yellows. That is what I do now. They mature the pods well and germination seems normal. One that was not bred passed out earlier than a similar miscast with seeds to mature. That, at least, shows the good intentions of these non-branched recessives working as a multiple factor and coming out rarely but capable of being transmitted by the pollen parent.

Iris Performance in the Spring of 1934, Following the Very Severe Winter

■ I grow upwards of 400 varieties, including a considerable num-

ber of the Californians of "tender" ancestry, and others supposedly susceptible to winter injury. Of these, I divided and reset in new locations quite a number of varieties in the spring of 1933 immediately after flowering. The fact that certain of them did not bloom in 1934 may not connote any winter injury reason, but may tie back to plant habits not to bloom *annually*—that is, as Mr. Morrison suggested in an earlier BULLETIN a general disinclination to bloom the first year after transplanting.

Of my varieties believed susceptible to winter injury, and which were *not* one year plants, or 1933 transplants, I can report as follows: One block of a dozen or more established plants of Moonlight failed to bloom at all—not even one bloom in 1934. No other variety here in quantity similarly failed altogether. Both Micheline Charriare and Shasta in quantities of established plants bloomed in 1934, but with fewer bloom stalks and this I attribute to winter injury. So also, Magnifica and Monsieur Steichen. And that is about the sum total of definite opinion that I have to report. Of course, many varieties showed variability of stem height in 1934, which usually bloom of practically uniform height. Frit-zof was conspicuous example of this result which I attribute to the severe winter and early spring conditions. And, generally speaking, the dwarfs and the intermediates were late in starting blooming, but by late midseason the latter types seemed to come on with blooms on about their normal dates according to definite records that I have kept.

Among the supposedly tender ones, or of tender derivation, I had fine or good blooms on W. R. Dykes, Leonato, Ballerine, Los Angeles (1 year plants), Pacific, Wambliska, Istria, Leverrier, Ann Page, Brivoness, Rhadi, El Capitan, Frieda Mohr, Mlle. Schwartz, Morwell, Santa Barbara, Soledad, Sophronia, Theseus, etc. I had no known case of winter injury to any variety as to which no warnings of tenderness are available in print.

A question: Just how does one determine beyond question that bloom failure with a particular variety is caused by winter injury? Precisely how? Suppose I go to my blocks of Easter Morn, or Souvenir Loetitia Michaud, or Mme. Cecile Bouscaut, or Mirasol, etc. Suppose I go to them in their beds, say, May 1, or May 15 next: By what ocular visible evidence shall I say that a given plant has had winter-damage done to it that will prevent appearance of bloom stalks? Say I am a "doubting Thomas" and wish to see the nail prints. Are they there?

■ Massachusetts Gardens in late summer are as charming in their age-old settings as they are in the springtime, when covered with the many-hued blossoms of our favorite flowers.

It was our particular delight to enjoy a short visit with Miss Grace Sturtevant, whom most of us regard as a sort of patron saint of the American Iris Society, since she has always taken such an active interest in it since its inception.

Sitting in one of the comfortable rockers on the immense veranda of her home (immense is right, since we of western New York are accustomed to the modern small porch serving more as a protection to the door-way, rather than the broad welcome envisaged as one approaches one of these hospitable New England porticos), Mr. T. F. Donahue, Miss Sturtevant, and the writer indulged in the every-entrancing theme of iris lovers as to the best red, the best yellow, or the best blue, carefully avoiding any reference to the best white, since Polar King was not in bloom, but the leaves of some of his plants were so puffed-up that we believe Mr. Donahue's assertion of its being a fall-bloomer must be correct.

In spite of the magnificence of Dauntless, the brilliance of Numa Rumestan and Apache we believe James Storer will outshine them all!

California Gold is Miss Sturtevant's favorite yellow, but both Mr. Donahue and the writer have seedlings which *we* think far, far superior. Perhaps the dream of a pure deep yellow of the standards of old Honorabile is yet to be realized, although Mr. Donahue thinks he has it in Golden Imp (is gold in color), a dwarf, and Miss Sturtevant in her yellow Elf.

In the blues, Mr. Donahue will not yield ground to any, with his Ann Stodder, clear sky blue, or Blue June.

We talked of the coming annual meeting of the A. I. S. at Hartford next June, when all these weighty questions will be settled (temporarily).

From the spacious porch one obtains a beautiful view of Wellesley Farms iris gardens, surrounded with grand old trees, planted in slightly raised small beds upon a high knoll sloping down toward the house and road. In the border Miss Sturtevant has many varieties of hardy plants and shrubs forming a delightful background.

Across the road, opposite the old yellow homestead, is a con-

tinuation of the garden, surrounding a large patch of greensward. What a temptation to loiter are the rustic chairs and table under Miss Sturtevant's favorite old *Hydrangea grandiflora* with its mass of enormous blooms!

We noticed the strips of mulch paper between the rows of her seedling irises. Miss Sturtevant informed us that it not only conserves moisture but eliminates the monotonous weed-pulling chore.

Among the newer annuals Klondyke Cosmos was conspicuous in a large background planting with its brilliant deep yellow blooms.

Mr. Donahue's garden could well be a model for all iris fans. It is just around the corner from Wellesley Farms in Newton Lower Falls. Here we had a most delightful visit, including luncheon, which the Donahues with typical New England hospitality insisted we have with them. In Tom's den (all the neighbors call him Tom) we enjoyed his other hobbies. Walls are covered with trophies of gun and camera. Loads of good books, magazines, and A. I. S. BULLETINS are within reach.

Like so many iris fans Mr. Donahue is also a stamp collector. Although the writer has left this hobby dormant for some time, it certainly warmed us up when we saw that wonderful assortment of first-flight air-mail covers.

The first impression as you enter the gate in the white picket fence and gaze upon the noble old Colonial home is that it seems like a big white hen benignantly watching over the chirping little flock around her. For those tall spires of *Lobelia Cardinalis* scattered here and there almost chirp with their brilliant red note of color among the healthy clumps of iris. The house sets back some distance from the road and is, as the old schoolbooks say, like an island, entirely surrounded by irises.

One of the characteristics which make the iris our favorite is that it retains its foliage all the year and forms a splendid background for later blooming perennials. Mr. Donahue's collection of phlox is especially fine. Von Lassburg, the late white, forms a splendid contrast for the more brilliant Beacon, Fire-Brand, Thor, the deep reds B. Compte, Camillo—Schneider—and his favorite red, Rosenberg. I wish we might mention all the new ones but those we remember as being especially gorgeous are Columbia, Morganrood, Daily Sketch, and Dainty, his own lavender seedling.

One of the largest and most brilliant hardy phlox we ever saw is Mr. Donahue's seedling Humming-bird, immense with deep rouge eye, an improvement on Richard Wallace and Bridesmaid Blue Hill and Progress are shades of blue still very rare in hardy phlox and we were especially happy to obtain slips from our host.

At the rear of the house the garden slopes down toward the Charles River with an expansive lawn and large flower bed near the middle, with a statue of Ceres in the center.

Like sentinels on guard at strategic points are cedar, savon or arbor vitae. Some fine specimens of tree lilacs are in evidence. We noted Mme. Lemoine, Congo, Bertha Dammann, Pres. Lincoln, and Ludwig Spaeth. Sheltering almost the entire garden is a huge oak, its enormous branches bending down to touch the water.

On one lot he has an old barn, built in 1790, and with his own hands remodeled into an artist's studio. In one corner he puts his practical skill as a contractor to good use by constructing a fireplace of ancient bricks which he dug out of the cellar, ornamented by an authentic colonial dutch oven. One is overcome with a feeling of reverence as you contemplate the historic associations of those staunch hand-morticed beams, the old H door hinges, and the almost seamless floor made with pine boards two feet wide. The cat-hole in the door made famous by Mark Twain, is seen only in these old structures.

As we looked over the garden we noticed two tall pear trees laden with fruit and Mr. Donahue saw three big crows having a greedy lunch. A stone catapulted from Tom's long arm put them to rout. All along the border are stretches of white English violets, a beautiful dark green mass; but we can imagine its beauty when transformed into vernal bloom.

We must mention the old wooden garden gates of which there are several, with round pickets and a tall arch, covered with the beautiful vine *Akebia quinata*.

It was with genuine regret that we left this beautiful spot, to say nothing of our host's effusive enthusiasm on our favorite theme—iridiae.

M. F. S.



Iris Pictures

Iris, H. H. Groff. A Groff seedling

The pictures on pages 75 and 90 come from Mr. Miles and show two Groff seedlings of promise. Does your garden notebook yield others that would be of interest to our readers?



Lilian A. Guernsey

Iris, Balroudour

Iris, Balroudour

■ If you will look back in your July issue you will discover a note on this charming hybrid written by Mr. Duffy at the Chairman's request. My apologies, therefore, are recorded here, that in departing for Europe I did not make clear to my assistant, Mrs. Simpson, that picture and text must go hand in hand. Perhaps the separation will serve a good purpose, nevertheless, in that it will remind you again of this very distinct plant which must not be judged by the standards of ordinary bearded iris since it has in it regelia blood that makes itself apparent not only in the color but in the carriage of both standards and falls.

Here it grows well in the ordinary border with various dwarf bearded nearby over which it towers in comparison, its tall two-flowered unbranched stalks reaching all of 18 inches.

B. Y. M.

THE AMERICAN HORTICULTURAL SOCIETY

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THE AMERICAN IRIS SOCIETY

ALTHOUGH all readers of the *BULLETIN* are supposed to know that the annual dues of the Society are three dollars payable by the calendar year, it has been called to our attention that there is a chance that someone who is not a member may read your copy and wonder how he too may become a subscriber. If you happen to be such a reader, let us assure you that the Society welcomes to membership all persons who are interested in iris who feel that special knowledge of iris would be welcome in their gardening.

Make your check or money order payable to the American Iris Society and send to Mr. B. Y. Morrison, Secretary, 821 Washington Loan & Trust Bldg., Washington, D. C. Please follow this instruction. It will help us all in the record keeping.

