



SIGNA

THE SPECIES IRIS STUDY GROUP
OF THE AMERICAN IRIS SOCIETY

SPECIES IRIS GROUP OF NORTH AMERICA
APRIL, 1987 NO. 38

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CHAIRMAN'S MESSAGE

SIGNA is in its twentieth year now, still pursuing its original aim of distributing seeds and information about iris species. Our membership has grown gradually, but in nineteen years there have to be some losses.

David Sindt died in the midst of his outstanding work with the miniature bearded irises, and even as his friends heard of his loss, they were--many of them--planting the seeds he had harvested for the SIGNA Seed Exchange. His memorials will be growing all over this country, and perhaps the world.

We have strains of Pacific Coast Native Irises named for collectors and breeders who in some cases are no longer with us, and there are certain strains of Louisiana irises which we still associate with their discoverers, and also there are exceptional plants like "Elwood Molseed" that remind us of exceptional students of iris species.

Probably most of us would be happy to think our favorite species and cultivars would go on with or without our personal name-tags. This is not likely to happen, though, if we do not plan for it. Nothing is harder than to keep a garden intact when the gardener is gone. Even with hefty endowments and the devoted efforts of friends (who are mortal too) most of the great gardens of the past have deteriorated, or changed into public pleasure-grounds with little regard for unique plants.

The best way to preserve an iris garden or any garden is surely to distribute it as widely as possible through gifts of seeds or plants. Your promising but weakly-growing seedling may even find a better home away from its seed-bed. And at the very least, the eggs have been divided up between baskets. SIGNA is trying to put gardeners of similar tastes and complementary needs in touch through what we print on these pages. And let us remember that there is no reason why an iris can't be immortal, so long as the chain of its caretakers is never broken.

Elaine Hulbert, Floyd, VA
February 4, 1987

TREASURER'S REPORT

December 31, 1986

Gene Opton--Treasurer

RECEIPTS

Memberships	\$1100.50
Publications	112.50
Seed Exchange	588.25
Donation	400.00
Slides	22.90
Interest	591.48

Total \$2815.63

DISBURSEMENTS

SIGNA 36 & 37	\$1656.54
Slide Preparation	91.34
Secretarial	20.63
Editor 37	66.97

\$1835.48

CASH ON HAND \$11,453.62

1,325.22

ANNOUNCEMENTS

PUBLICATIONS: Still available at \$1.50 each are SIGNA issues 10 through 36 excepting #16; the Species Iris Study Manual (parts issued to date) for \$5; and An Alphabetical Table and Cultivation Guide to the Species of The Genus Iris (BIS 1974) at \$1.50.

We have just heard that the other issues, i.e. 1 through 10, and 16, are now available also, but whether the price remains the same or not we do not know. We anticipate that a price will be set for the whole set of past issues as well as individuals. We suggest that you write our Publications Chairman, Alan McMurtrie, address inside front cover, if you are interested. Make checks payable to SIGNA for any publications ordered.

DUES for the Species Iris Group of North America are now \$3.50 annual, \$9 triennial for individuals; 4.50 annual and \$10.50 triennial for families (for this you get Mr. and Mrs. on your label--if you both enjoy species, it is nice to be a real part of it). Lifetime memberships are \$75. These new rates make it worth your while to go triennial and we think we did not previously have a lifetime rate.

EXCHANGE MEMBERSHIPS: This is an invitation to iris societies, especially those in other countries, to arrange for the editor of SIGNA to get a copy of your magazine, bulletin, newsletter or whatever in exchange for SIGNA. Please contact the secretary, Florence Stout, as she prepares the mailing lists but mail the publication to the editor, Joan Cooper, both addresses inside front cover. We wish to acknowledge acceptance of our offer by the Aril Society.

MEMBERSHIP LISTS: Our Secretary, and Membership Chairman, Florence Stout will send current membership lists to members who send her \$2. Her address is inside the front cover. We are unable to publish the list as part of SIGNA any longer since we now have some 500 plus members!

AIS SPECIES INDEX: B. LeRoy Davidson has finished his Species Index to the first 25 years of AIS BULLETINS. He describes it as "A Topical Index of General Iris Interest." It includes those articles that pertain to care, cultivation, hybridization, etc. and, of course, those relating to any of the species. He will provide a copy for \$3.00. Roy's address is 2500 Richards Road, Bellevue, WA 98005.

SIGNA INDEX: Eric Tankesley-Clarke continues to work on the Index for SIGNA. When the Index is completed for those issues never so far indexed, it will be available. Eventually Eric hopes to combine this with previous indexes to provide a complete Index on computer so it can be updated with each issue.

DAVID B. SINDT

David Bailey Sindt died in his home in Chicago on December 3, 1986. He was 46 years old.

David's passing is a loss to all collectors and hybridizers of the bearded species. His catalogue, published annually since 1976, offered many clones of small bearded species. David took pride in carefully examining and accurately identifying the clones in his garden. His collection of I. pumila was probably the largest in the world. Seed from the Sindt garden was often listed in the SIGNA exchange.

David introduced six selections of I. pumila: SUN SPARKLE (1968), GARNET GLEAM (1968), GAY SUNSHINE (1973), SNOW SPARKLE (1978), EGRET SNOW (1985), and SUN TIGER (1986). SUN SPARKLE won the Caparne Award in 1972. SNOW SPARKLE has its AM. Two more have their HMs.

I. pumila entered into several of David's MDB and SDB hybrids. A much more far-reaching project involving the species ultimately produced a line of 48-chromosome MTBs. Completely independent of the Hager MTBs (which go back to I. aphylla 'Thisbe'), David's line rests on I. aphylla (via Warburton's ANNIKINS) and a tetraploid form of I. reichenbachii (balkana). After several generations, two selections were introduced: ECHO POND (1984) and EVENING POND (1985). ECHO POND just won its HM. David had also used this line to introduce the dominant amoena factor (I₁) into 40-chromosome SDBs; none of these have yet been released. Experiments with 24-chromosome diploids, especially Ii. suaveolens (mellita) and timofojewii, were eventually discarded in favor of other projects. In total, 43 seedlings were registered by David.

David's collection of Iris will survive intact, as he had arranged for its care before his death. He is survived by his parents, Mr. and Mrs. W. G. (Gus and Char) Sindt, a sister and nephews, other relatives, and numerous friends.

Eric Tankesley-Clarke

And new creations do the old succeed,
As late and unknown beauties rise from seed.

*Lawrence: Paradise Regained, or The
Art of Gardening. (1728.)*

HINTS ON GROWING THE CRESTED IRIS

From Fall, 1963 Region 14 Bulletin

Jean Stevens, New Zealand

The Evansia or crested irises are members of the subsection of the iris genus which has as its distinguishing character a more or less ragged crest on the falls, in place of the beard on the falls of the pogoniris, or the median line or signal patch on the falls of the beardless iris. The subsection is a small one comprising not more than a dozen species, and one would expect to find that amongst so few plants of one section there would be many general resemblances both in plant and in flower. But this is far from being the case. In fact I cannot think of any other section in which the species differ so widely. Compare, for example, the miniature flowers and creeping habit of the lovely little ground carpenter, *I. cristata*, with the 4-5 ft. tall, wide-foliaged *I. wattii* with its widely branched flower scape, and lush tropical appearance. Again think of the hard upright narrow foliage and miniature blossoms of that Hong Kong plant, *I. speculatrix* with its evergreen habit, and compare it with the soft broad leaved, large flowered and deciduous *I. tectorum*. One is amazed that among so few species, all belonging to one subsection, there could be such wide divergence. The more the crested irises are examined and studied the more certain it appears that most of the species have been separated and individually evolved over vast ages of time. It is therefore all the more surprising to find that though their physical characteristics vary so greatly, they still retain many characters other than the fall crest, in common. All, from *cristata* to *wattii*, from *speculatrix* to *tectorum*, are shallow rooting plants, all prefer a loose, rich, open soil containing leaf mold and forest floor debris, and all produce their finest blooms and clearest colors when grown in partial shade. So many other irises prefer full sunlight--many will not tolerate climates or aspects which deny them a few hours at least per day of hot summer sun. But the crested irises are basically woodland plants, and in growing them in our gardens we should never lose sight of that fact. Some of the species, such, for instance, as *tectorum*, *japonica*, *wattii*, and *milesii*, will survive and flower in full sun, but the semi-bleached foliage and pallid blooms are a sure indication that under such conditions they are under a real handicap and are hardly more than just existing. Certainly they are not producing for us the beauty they can give under happier conditions.

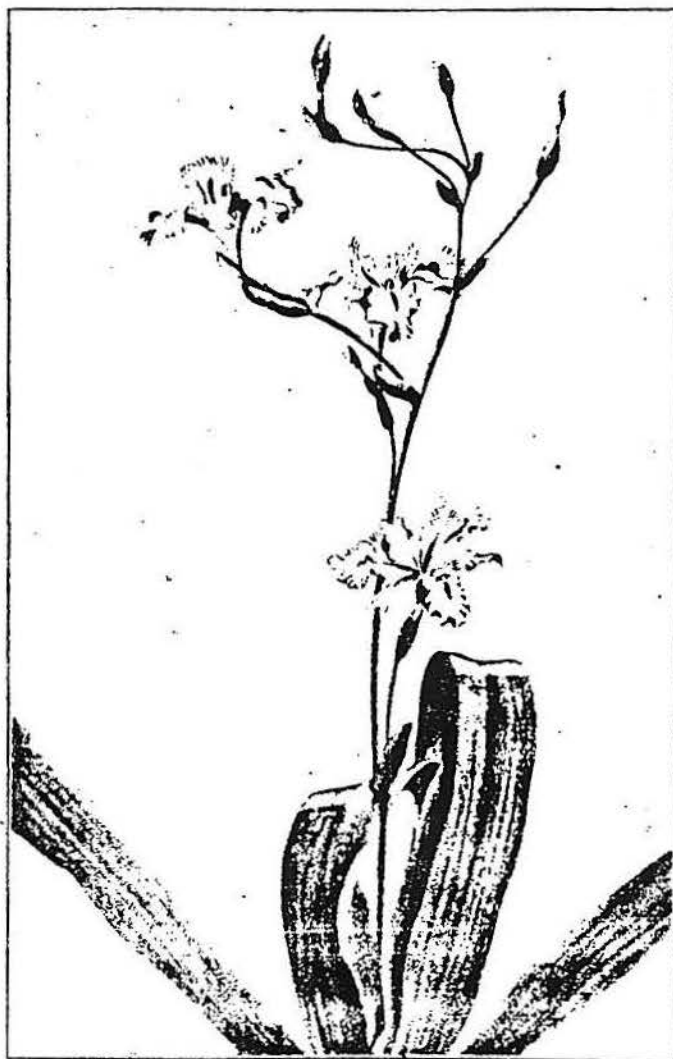
The shallow roots which are common to all crested irises, their preference for some shade, and their love for leaf mold in the soil around their roots are key facts which guide the gardener to real success in their culture. Except in the "wild" garden, where conditions approach those of their natural habitats the crested iris do not find the conditions of our gardens normal, even in partial shade.

In normal gardens there is no natural, constant, renewing of the humus content of the soil such as is found in nature, and this is a fact that we are apt to overlook. The semi-shade lovers with shallow roots are the first to suffer amongst plants when we tidy up our gardens, rake off dead leaves, and generally remove all decaying vegetable matter. The leaf mold, compost, natural humus and manures we have added are quickly used up by the plants that must have them to grow well. For this loss we must compensate them. With the crested irises we must either lightly and constantly topdress them

Plants which prefer semi-shade and leaf mold almost invariably dislike alkaline conditions and the incorporation of acid peats to the situation for growing them is a help in reducing the pH of such soils.

One of the handicaps under which many gardeners suffer is that the water available for watering the garden is very definitely alkaline. Yet more particularly in the case of shallow rooted plants the soil cannot be allowed to dry out.

Necessary watering can be very greatly reduced by keeping the compost or leaf mold enriched soil around crested irises friable and loose. Following watering the soil should be stirred just as soon as it has lost its soggy and will break up. There are few mulches more effective than an inch of loose dry soil over moist soil, and to create such a condition it is essential to water well and deeply and then--usually within hours--loosen the top soil so that it, and only it, dries out quickly. Such dry soil becomes an insulating blanket against the evaporating draw-off of the water in the soil below. Another way to produce this dry soil mulch blanket quickly, is to wait only until the watered soil has taken up the last drops of the water applied, and then topdress the plants heavily with some really dry compost, leaf mold, or prepared fine soil to the depth of the mulch required. If this procedure is carried out it will be found that the need to water more than very occasionally indeed has been circumvented and with it the build-up of the alkalis from the applied water.



I. CONFUSA illustration from HANDBOOK OF GARDEN IRISES, W. R. Dykes 1924, where it was labeled "I. wattii (1/3 natural size)." This is a well-known ID error, but size is reduced to 1/6 or less from Dykes description of the plant as 2 feet or more.

EVANSIAS IN MISSOURI

Bob Pries, High Ridge, Missouri

My first exposure to the evansias came with the discovery and planting of the native Missouri wildflower, I. cristata. Being a wildflower enthusiast long before I became an Iris enthusiast, I was only familiar with the blue form which increased to form a large mat covered with blue towards the end of April. Even out of bloom this colony formed a very attractive ground cover about 8 inches high. Most appealing is its ability to be virtually trouble-free in our rather harsh climate. Some summers we have drought for two months with temperatures near 100 for a week or two at a time. Winters normally are supposed to only cool to -10°F but recent years have reached as low as -25°F for a week or two with no snow cover. Worst of all maybe, are extended periods of freezing nights and warming days which make newly-planted bearded Iris stand with their roots like stilts from heaving.

A trouble-free plant such as I. cristata should have other useful varieties, and I've been searching them out. In the fall 1982 issue of the Bulletin of the American Rock Garden Society, Roy Davidson writes of 'White Pearl,' (probably PEARL WHITE reg.) CRESTED IVORY, the pallid 'McDonald' 'Millard' and 'Whisper,' the shade darker 'Skylands,' bicolor CRESTED FAIRY, and 'Gold Crest' a mid-lavender with a greater number of yellow lines, and finally a dark true violet-blue 'Abheys Violet.' Only a few of these have I been able to locate. Three names I can add are 'Eco-Ruffles,' 'Eco-Little Bluebird' and, introduced last year by WeDu Nurseries, VEIN MOUNTAIN. As far as I know unnamed, but unique, are a double form, an eyed form, and an elusive pink. Sounds like a good beginning for a potential hybridizer. Wouldn't it be delightful to see ten or twelve registered varieties displayed at an Iris show, each eligible for a ribbon as its own variety. Perhaps this would encourage exhibitors to grow this group and thus help preserve their diversity. [Those capitalized are registered varieties but I may have missed some. ED]

Missouri's difficult climate will also accommodate I. tectorum, I. gracilipes, I. lacustris, and I. milesii as long as additional water is provided in summer. All of the above seems to require some shade with the exception of tectorum and milesii.

I have had no success with I. tenuis although I have only received plants late in fall. This brings me to one of the problems with Evansias--most nurseries want to ship in the fall. My best success with transplanting has always been in spring immediately after flowering. Cristata is tricky the first year in that it likes to creep on the surface and dislikes being covered with anything but a light layer of leaves. Although it must not dry out until it has sent down some new roots. Tectorum has a rhizome almost like a tall-bearded and is easily transplanted.

I. confusa, and I. wattii are two tropical species which can't take frost. I. japonica, a third, tolerates only a light frost. These elegant Iris grow nicely in pots although if allowed to get soggy have a tendency to rot. I've tried potting Iris tectorum hoping to bring it into bloom with these species in the hope of crossing them. Jean Stevens in New Zealand and Dr. Ellis in England have demonstrated that these crosses can be made. I. japonica, I. confusa and I. tectorum have grown well under fluorescent lights in my basement. Tectorum will begin flowering for Christmas when brought inside in

October and left under light 24 hours a day. I suspect the long day triggers flowering. Unfortunately, I. confusa and I. japonica have not responded to this treatment.

The Evansias are an exciting group, giving diversity to the shady garden. The most discouraging part is finding the different variations. The variegated I. japonica 'Aphrodite' still eludes me as do several registered varieties of I. confusa. Fortunately, I just discovered a source of I. wattii: Sun Sweet Fruit and Bulb Nursery; Sumner, Georgia 31789.

Some of the delicate beauty of the Evansias is combined with the sturdy vigor of the bearded iris in PALTEC, a pallida-tectorum cross. It's easily grown but sterile. Dykes pictures another similar cross called Loptec which is said to have died out, but what has happened to Arieltec, another bearded iris x tectorum? With the advent of tetraploid tectorum a marvelous new group of Irises could be formed.

OUR READERS WRITE

I must say that I was thrilled to see Mr. Ernest Luscombe's "Iris Species Native to North America" in the last SIGNA.

I belonged to the British Iris Society some years ago and loved his articles. I wrote the secretary asking for his address and if she knew whether his articles had been published separately as a collection. She sent me his address and wrote that as far as she knew his contributions were not published as a collection. So, I wrote Mr. Luscombe telling him how much I loved his articles and drawings and that I was trying to grow all the iris species possible. Soon after he sent me a very lovely letter showing his appreciation for my admiration. Later he sent me a copy (1965) of The Iris Year Book in which were four articles, including a book review and two drawings, one of which was an oncocyclus iris which he thinks is the best one of his published by the British Iris Society.

Of course, I wrote him but he could never know how pleased I was. Through my Robin S/N#8 some lovely members who belonged to the British Iris Society were kind enough to xerox a great number of his articles which I keep in a special folder. I believe that I missed only a very few.

I can't understand why the British Society hasn't published his articles in a special collection. I can't help but wonder if SIGNA can do something about this and I will be willing to make a donation toward the cost.

Dot (Mrs. Karol) Hujsak
Tulsa, OK

SOME THOUGHTS ON THE EVANSIA TYPES OF IRISES

Larry L. Harder, Ponca, Nebraska

From the time that I first saw a large clump of I. cristata in bloom in the Alma and Ernie Emery garden in Sioux City, Iowa when I first visited their garden in 1958, I have loved the daintiness of the flower and the plant. Alma was always very generous with her plants, so it wasn't very long before a small start was taken for me, to try in my garden out on the family farm. I didn't have the sheltered location that a town garden receives here in the midwest. My garden on the farm received the full bluster of all types of winds--those bone-chilling winter winds from the north, and the south winds in the spring that you hoped would die down so that the spring flowers could last. Anyway, my plants of I. cristata didn't last but a couple of years. By that time I was collecting tall-bearded irises at the rate of several hundred a year, so I didn't miss the demise of my I. cristata.

When we moved into the place here in Ponca, I had a "town" garden, and protection of the surrounding homes from the winds, especially the winds that blow from the south in the early spring. I discovered a mail order source of I. cristata at cheap prices and placed an order for 100 plants, thinking that I could get it started in all kinds of places in the garden, and that I would find out exactly where I'd be able to grow it. I did plant groups of it all over the garden in shady spots. And slowly they all died out, except those that I had placed in a very sheltered location on the east side of the house next to the house foundation. Here it grew, prospered and has flourished. I did find out that I needed to add a bit of compost over the rhizomes when it was in the process of multiplying and expanding in its location. It multiplies and blooms each year, and I've often thought of trying more types and some of the named varieties, but so far have not. I have never noticed that my plants at any time have ever set seed.

I have tried to grow I. lacustris too, but have not had success. I would like to try again with it, as I think that I might be able to give it a better chance this time around. I'd use more peat and compost in the soil, and a place on the eastern side of our house foundation. The same might hold true with I. tenuis. My first plant was dug from the wild many years ago, but it was unable to survive the trip home from Oregon and probably was dug at the wrong time of year (July). It would be interesting to find out if the plant would be hardy in our area.

I have grown both I. tectorum and I. tectorum alba in my garden. They do freeze out some winters, but they are very easy to grow from seed. I've often wondered why the white form always has a different flower form than does the blue one? From seed, one usually gets a slight variation in flower colors in the blue forms, but after a while they settle down to be almost identical in color.

I. japonica is a house plant for me. I've bloomed it, and I. wattii, at various times. The variegated form of I. japonica never blooms for me, but does make an interesting plant for the garden. I carry it over the winter inside under the light garden I have in the basement.

I have always been very interested in the Taiwan form of *I. tectorum*. When it was first offered in the seed exchange, I sent for a packet and received three seeds. All three germinated and grew. Each fall I potted them up, but it took me a few years to discover how to get them to flower. I found that they needed to be left in the garden until we had a light frost. That cooled them to the point that they would send forth bloom. So now I have them in bloom at Christmastime each year. I now am growing some of the tetraploid forms that were recently offered. One bloomed this year and it seems to be more robust with many more flowers than the first ones I raised. I have found that they are not hardy here for as plants increased I had to leave some in the garden and they have never survived. They have multiplied quite well, but I am unable to pot up all of the increase. I would love to read of someone who grows both the regular *I. tectorum* and the Taiwan forms to tell me if they are truly different. The Taiwan form seem to have more flowers, but, is that true? Or am I just seeing them more often since I am growing them indoors. If anyone wishes to have some of the increase, please let me know. I'd like to exchange for other species irises.



I. cristata
-- drawing by Jean Witt



I. tenuis
-- drawing by Jean Witt

from the British Iris Society Yearbook, 1956

Note on Transplanting Apogon and Evansia Irises of Dwarf Growth

BY ERNEST G. B. LUSCOMBE

IN his *Handbook of Garden Irises*, p.236, and at appropriate places in the descriptive text, Dykes stresses the importance of choosing the right moment for lifting and moving those Apogon and Evansia iris species which are of frail structure, the occasion being determined by observing the commencement of the active production of new roots by the plant, which in these particular cases occurs at about flowering-time or shortly afterwards, say in late spring and early summer. The particular iris species here in contemplation are those within the Apogon group Californicae, and *Ii. verna*, *ruthenica*, *gracilipes*, *cristata* and *lacustris*. In general, these plants either possess few root-fibres or have a distinctly limited season of root activity.

If it is desired to divide a clump, thus increasing one's stock of a particular species, then there is little doubt that the season of the formation of new root-growth is the best time, but, as pointed out in my article in the 1955 *Year Book*, in the case of the most vigorous "Californian" irises, e.g. *Ii. douglasiana* and *innominata*, the emission of young root-growth is not confined to the period around flowering-time. It occurs also in late autumn to winter, and it has been clearly demonstrated that lifting, dividing and transplanting can be safely accomplished then, during mild, humid weather, provided the plant is kept moist throughout the process, and that the "increases" are carefully tended afterwards.

This note is, however, intended to make one point especially clear, viz: that if it is required simply to move a single whole clump to a different site in the same garden, without division of the groundstock, it can usually be done successfully at almost any time of the year, during a spell of mild weather, if the job is done quickly and carefully, seeing that these plants are shallow-rooted, and can be lifted with a firm ball of soil intact, supporting all the root-growth. This can certainly be accomplished with *I. ruthenica* and *I. verna*, this latter plant, if the true species be obtained, being a much easier subject for ordinary garden cultivation than is generally supposed. In the writer's experience it presents no difficulty whatever when grown in a well-drained, somewhat acid soil containing an ample supply of good, well-rotted natural leaf-mould or similar humus-forming material, kept reasonably moist in spring and early summer, in a site which is lightly shaded, or shaded for part of the day.

Small irises of this kind are delightful subjects for the rock-garden, but apart from a suitable site and good, non-alkaline soil, a vital consideration is to adopt persistent and thoroughgoing methods to destroy slugs and snails.

NOTES ON SOME SMALL IRISES

Laura Louis Foster

It is surprising how frequently Iris cristata and Iris verna are confused when they are scarcely similar, really. You order I. verna from a nursery list and you almost always get cristata (collected plants I'm sure). We find here in northwestern Connecticut that cristata does well in either acid or limey soil and will thrive in partial sun (quite a bit really) as well as in shade, and that it can stand a very dry situation. I. verna on the other hand insists on acid soil though it too needs a well drained or even dryish site and seems to do best in light to moderate shade. I. gracilipes also insists on acid soil but can take more shade and moisture than either--though not a soggy condition.

We grow lacustris in both acid and limey soils and find that it does well in either; the limey site has a fairly light, sandy soil which is perpetually moist from underground seepage, and in this fairly sunny area it has spread and even self-sown. In the acid site the soil is much drier, full of sandy leaf-mould and it is also in more shade; though the plant does very well it has not spread so far nor seeded itself as in the sunnier, moister limey site.

We have tried I. tenuis, the little one from Oregon, and it did well for a number of years in the acid, rather dry section in part sun, but then it gradually petered out over a couple of years. It may have been a slight change in the amount of sun, as the trees above thickened or it may have been a weather condition. We frequently can grow western plants for quite a period and then, bang; too wet in summer or too cold in snowless winters put "PAID" to them. [Too dry in growth maybe? B.L.D.]

The garden has a limestone bedrock in its lower reaches while above this the soil is underlain by schist and is naturally acid; here under hardwoods, pines and hemlocks, such things as rhododendrons thrive with no special soil preparation or amendment. Therefore a great variety of sites are available, and over the years we've observed irises and many other plants coping with life very satisfactorily. [The Foster's Millstream Garden is at Falls Village, Connecticut. B.L.D.]

THE LAKE IRIS (1931)

"Iris Lacustris grows in enormous quantities along the east shore of Lake Huron from Southampton northward and probably on Manitoulin Island as well. Along these shores flowering is so profuse that it is difficult to place one's feet on the ground without crushing this dainty species. Last June a friend surprised me with a small package of the white variety which, though it was to be expected, had never been reported to me, nor had I found it on the few occasions I had visited its haunts."

(We have lately read that at present lake-front developments have largely destroyed the habitat of this most delightful of little irises, and that only in obscure places and established sanctuaries does it persist. BLD)

THE LAKE IRIS AND ITS DIFFERENTIATION FROM CRISTATA

From AIS Bull. 47, April 1933

Wm. H. Atwood, Milwaukee, Wisconsin

For several years I have been collecting and studying the rare and little known lake iris, Iris lacustris, and have been advised that iris growers might be glad to know more about this tiny relative of the better known I. cristata, which it so closely resembles that Gray's Manual of Botany, 7th edition, says it is "too near it;" but it is a distant and non-variable species.

Lacustris is more hardy and multiplies faster than cristata. It thrives equally well in slightly acid or alkaline soil and can withstand extremes of sun, shade, water, drought, heat or cold. It grows best in noon shade and stands as thick as lawn grass. Because its stems grow on the surface if the soil is hard, it should be covered with moss or straw each fall, and inspected in the spring to see that its rhizomes are covered. In its native haunts it grows in moss.

This iris is a choice rock garden plant and is entirely free from insect pests or diseases, but is crowded out by tall grass which seems to be its only enemy. It was formerly thought that the moist air of a lake shore was necessary for its propagation, but it has been grown far from water in as great luxuriance as on its native beaches. I believe that it will thrive anywhere in the United States.

The best known stations where lacustris may be found are the following: Fish Creek, Ephrium, Bailey's Harbor, St. Martin's Island, and Washington Island, Wisconsin; Presque Isle, Mackinac City, Bois Blanch Island, and Drummonds Island, Michigan, and Bruce Peninsula and Southampton, Ontario.

The chief distinction between lacustris and cristata is the habitat. Lacustris is found wild only on a few sandy ridges (old beach lines) along the shores of Lakes Superior, Huron and Michigan, whereas cristata grows in the Eastern States from Pennsylvania southward. It is because of the geographical locations that cristata blooms in April-May whilst lacustris blooms in May-June, but when grown together they bloom at about the same time. Lacustris has always bloomed for me again in the fall. I usually have flowers on lacustris from about October first until frost. Fall blooming is not common to it, however, where it grows on its native beaches.

Lacustris is only about half as large as cristata in flower, leaf and rhizome. The flowers of cristata are about the same diameter as a silver dollar, and lacustris is about the size of a half dollar. The corolla tube of cristata is very long and slender and extends well above the foliage; whereas the tube of lacustris is yellowish and very short and does not extend above the foliage. The petals of lacustris are relatively shorter and broader than those of cristata, causing it to look more like a bearded iris; Cristata has the fragrance of the wild crab-apple, but lacustris is nearly odorless. In color the flower of lacustris is a deeper blue.

The foliage of lacustris spreads out on the ground and is much less stiff and erect than is that of cristata. Finally the seed capsule of cristata is sharply triangular in cross-section differing from lacustris which is more ovoid.

from the British Iris Society Yearbook, 1947

IRIS SPECULATRIX

From Mrs. GWENDOLYN ANLEY, of Woking, Surrey.

Dr. Geoffrey Herklots gave me roots of this iris when I left Hong Kong and I was able to keep it in good condition during my two months' stay in Ceylon and the voyage home. I decided to travel overland from Marseilles and gave the small box containing the roots to a friend to post when she arrived in England by sea. In spite of the number of my special licence being shown on the parcel it was seized by the Customs and retained so long that the plants were dead when they reached me many weeks later.

Iris speculatrix (Hance) is the only species of iris found in Hong Kong though another representative of the Iridaceae family, *Belamcanda punctata* (Moench) (*Pardanthus chinensis*, Ker) is also found in the colony. This iris was not known to Bentham when he wrote his "Flora Hongkongensis" published in 1861 and was first described by Dr. H. F. Hance in 1875. The plant was first discovered on a hill between Victoria Peak and Mount Davis by a Chinese employee of the Botanical Department. *I. speculatrix* belongs to the Evansia Section. On first opening, the falls are a deep violet changing to a uniform violet-mauve. The standards are a slightly paler shade and the crests are orange. The leaves vary in length from 6 inches to 3 or even 4 feet in shade-grown plants; they rarely, if ever, exceed half-an-inch in width. Fortunately this lovely flower is by no means rare and though local in its distribution is abundant where it does grow. It settles down very happily in private gardens and I saw it in quantity in a garden in the New Territories. On the island of Hong Kong it is recorded from Victoria Peak, High West, Mt. Davis, Mt. Kellet, Mt. Violet, Stanley Peninsula, above Repulse Bay, Cape d'Aguilar and above Shek O. In the New Territories it occurs in several districts on the mainland and on Lan Tau island. This plant is protected by law and must not be dug up without permission from the Botanical and Forestry Department. It is not hardy and it is doubtful whether it would survive an English winter in a cold house.

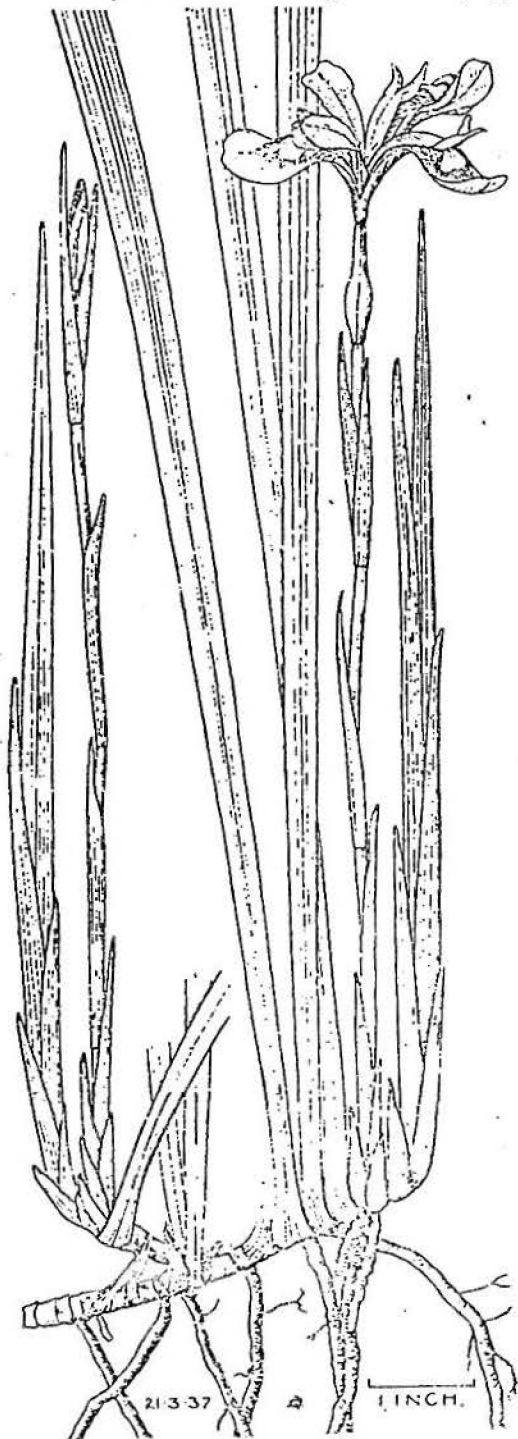
From the Rt. Hon. THE EARL OF ROSSE, of Birr Castle, Ireland.

In answer to your enquiry, I raised *I. speculatrix* shortly before the war from seed sent from Hong-Kong by Dr. Herklots—I think the same source as Mrs. Anley's. I had two boxes each containing some two dozen plants and a few flowers were produced in either 1940 or

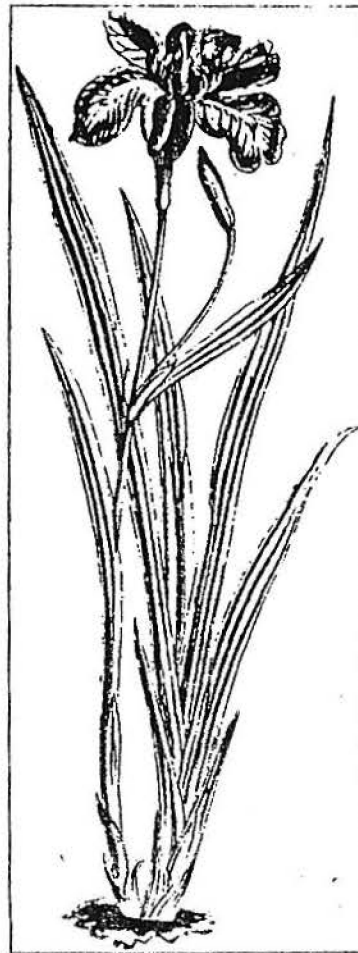
IRIS SPECULATRIX - continued

1941. The unfortunate part is that I was away on active service throughout the war and was only able to come over here for an occasional few days' leave. In consequence, I only know of the fact that the flowers were produced, from my head gardener, who has since died. Moreover, the plants have since been lost together with many others owing to the neglect inseparable from the war years.

They were never planted out of doors and I am afraid that the only possible statement I can make is that the plant is capable of being raised from seed and housed in a cold greenhouse in this climate. My head gardener told me that he was not very struck with the flowers, but then professional gardeners so often prefer the gaudiness of modern hybrids.



I. speculatrix.
By Geoffrey Herriot



I. gracilipes

--drawing from BIS Yearbook 1942

from the British Iris Society Yearbook, 1937

Iris tectorum.

By PETER R. BARR, V.M.H.

THE tourist in Japan must often wonder at the ridge of green flag leaves surmounting most of the straw-thatched cottages which prevail in the country villages, and if perchance his travels are made at the end of April and in May, a great mass of beautiful blue flowers will meet his eye, rising from this rich green foliage. This is *Iris tectorum* as shown in illustration.

Should his curiosity lead him to enquire the reason of a flower garden on the ridge of a cottage roof, he will find that it is more of an economic than aesthetic one. All thatched roofs must have a ridge of some kind to throw off the water, and as the Japanese generally cast about to find something in nature to answer their purpose, they discovered, in early times, that the close-growing and twining character of the roots of this *Iris* formed a compact water-resisting protection, and therefore used it on their cottages. As high winds prevail in Japan, to prevent the plants from being torn off, they used lengths of split bamboos tied into the thatch which kept all in place until the roof was re-thatched later on. It is no uncommon thing to see *Lilium elegans* and even *Hemerocallis* growing among the *Iris*. As *Iris tectorum* is quite hardy, it has been suggested that it might be used in the same way on many of the old thatched cottages in Great Britain and Ireland.

There is a legend of a woman who went to a Shinto Priest to enquire how she could give a blue tint to her black hair, and he told her to get the colour from the flower which grew neither on the heavens nor on earth. She tried the *Iris* flower from her cottage roof and obtained her wish.

ABOUT IRISES ON ROOF THATCH AND OTHER THATCH

"About the end of May the Roof Iris of Japan comes into flower (Brooklyn, NY) growing on rocks covered with bearberry (*Arctostaphylos uva-ursi*). This iris seeds itself among the old leaves and stems of the bearberry which forms a sort of thatch over the rocks and takes the place of thatching on the roofs of Japanese houses where it grows abundantly. The fact remains that these self-sown plants do much better than any that are planted in soil -- no matter how well drained."

Alys Sutcliffe in ROCK GARDEN HANDBOOK
Brooklyn Botanic Garden, Vol. 8 No. 3

IRIS TECTORUM - the Orchid's Rival

From No. Illinois Iris Society Bulletin

Helen Tarr, Lisle, Illinois

Iris tectorum, one of my favorite irises, is as delicately luxurious as any orchid AND grows outdoors here...like an ethereal angel dancing above shorter spring flowers.

It's probably THE most beautiful of the species irises hardy in our area. When even neighbors who never notice flowers ask in awed tones: "What is it?" you know you have a winner. It's fun to answer "another of the many irises" and then tell its story.

Known as the "Japanese Roof Iris" because the first western iris collectors discovered it growing on the thatched roofs of Japan, for years gardeners gave it a lean diet and total sun as its meager habitat would seem to dictate. And they thought it temperamental...although enough of this graceful beauty survived to keep fanciers growing it, thus proving its ruggedness.

I. tectorum is actually one of the hungriest of irises, and quickly exhausts even its correct rich soil. And while it will tolerate the most sun of any of the crested irises, it prefers half shade - preferably morning sun and afternoon shade, or high or dappled shade.

Why was it growing on Japanese roofs? The most likely answer, reported by the late Jean Stevens in her book THE IRIS AND ITS CULTURE, is that when westerners discovered it, there had been a famine in Japan and the emperor had decreed that only edibles be grown in the ground.

Rather than give up their face powder which they made from its roots, (and I suspect also not to lose a favorite flower), the resourceful ladies planted beautiful, useful I. tectorum on their thatched roofs.

Another less romantic version is that the beauty-loving Japanese grew it on their thatched roofs for its roots to help bind together the clay and thatch while at the same time adding a decorative accent.

Introduced to Japan from its native central and southwestern China, tectorum has been loved in both countries, and its cultivation is recorded for nearly two thousand years.

I. tectorum alba is a large, ruffled white flower about 5" across, of good substance with cockscomb-like crests tipped with gold. Gold also edges the short, almost tubular haft of the standards, while the hafts of the falls are both edged and briefly veined in gold.

Both the fuller, obovate standards and the almost orbicular falls arch out nearly horizontal, and the short, fringed style arms angle at 45 degrees--creating a total vision of beauty in pristine white sparkled with gold.

The "blue" form, the basic I. tectorum - thought to be hardier and more vigorous - is blue-lavender with darker blue veining or mottling on the falls and a contrasting white crest. (The English consistently call it "lilac" and Dykes GENUS IRIS shows a solid lilac flower only lightly veined, so I wonder if they don't have a color variation different from the one normally described here.)

I. tectorum alba bloomed for me about the third week in May last year (an early year), and the blue form is said to follow the white in bloom. So one or the other tectorum could be expected to be in bloom for our "Late Show" ...if you could bear to pick it.

The flowers are held above the foliage on the stems about 15" tall, showing off beautifully above late spring flowers. In my garden it bloomed next to a flower-studded fountain of I. graminea and above yellow Japanese spurge and blue forget-me-nots. I had only two blooms per stalk, but under perfect conditions I understand the white tectorum will branch like the blue one.

The hardiest of the larger Evansias, or crested irises, tectorum (which looks somewhat like a larger, more lavish cristata) in our area should probably be given a somewhat protected spot, mulched in winter. Mine is close to the house on the east side...moved there in September from the colder, lower location where I had first planted it in June.

Some references say it should be given a light top dressing of lime in early winter, although I doubt this would ever be needed with our alkaline soil! Others say it needs an acid soil, but it obviously is the most lime-tolerant of the evansias and thus adaptable to our area. The soil should, however, be made loose, friable and well-drained with organic matter, adding humus with leafmold, peat, compost or manure--or a combination. The slender rhizomes ramble around on top of the soil putting out short feeder roots that quickly exhaust the soil, requiring transplanting every two or three years, and an annual top-dressing with rich, humusy soil or leafmold. It is said that even dead-looking rhizomes often burst into leaf when moved to fresh humusy soil.

Transplanting is generally recommended for immediately after bloom, but some irisarians report success in transplanting spring, summer or fall (after fall rains begin). The plants should be kept moist after transplanting, and when spring growth begins, but good drainage is especially essential in winter. Some report lush growth but no bloom in too damp a location, and successful bloom on dry, shady banks. So it seems quite adaptable so long as the soil is rich and humusy.

I. tectorum was successfully crossed by Dykes with bearded I. cengialti LOPPIO (See Plate XXIV in GENUS IRIS), and by Scheubel with a dwarf bearded, probably an I. chamaeiris...while the familiar PALTEC is bearded I. pallida x I. tectorum. All are sterile.

With attention to replenishing an originally rich soil, and avoiding voracious spreading plants that would smother the rhizomes, I. tectorum should be lovely with many spring treasures, including dwarf columbines, coral bells, and even other dwarf bearded and beardless irises. I can hardly wait for it to multiply so I can enjoy its large, frilly flowers fluttering above spring plants throughout most of my gardens. But then I especially love all the crested irises.

A LEGEND LAID: THE ROOF IRIS

From AIS Bulletins 1929-1931

Extracted by B. LeRoy Davidson

"It is so useful to have plenty of plants with a history." writes E.A. Bowles in My Garden in Summer, "When one trots a Nature-study class or a local Horticultural Society round the garden it is enough to point out interesting structures, botanical peculiarities and relationships, but bodies of non-gardening folk require condensed novels, weird legends of plants with a past, such as Mistletoe and Mandrake.* * * * I. tectorum always makes a good text, but is better when in flower. You can work up the agony of the awful famine and the wisdom of the Japanese Government in ordering every scrap of garden ground to be planted with grain, and the despair of the ladies who depended on the Iris for hair-dye, face powder, or corn-plasters, or anything you think interests your audience--even the love of Beauty which led them to almost worship its flowers, if you have an Art class before you. The final brilliant idea of planting it on the thatch of the houses, and how it thrives there, &c., and then you had better hurry on to your next penny novelette before too many questions are asked about this none too authentic story. If only the Burning Bush, Dictamnus Fraxinella, would burn when you wanted it to, and New Zealand Flax, Phormium tenax, grow as freely here as in Ireland to provide enough leaves for each visitor to scrape and extract the strong fibre to twist into whip thongs, one could do without lying about I. tectorum."

"The roof iris of the Orient has been the subject of various stories which are everywhere repeated until one wearies of them as of Bacon's inevitable essay on Gardens! The species is by no means only Japanese as one might think, but grows on the continent, China particularly. Like many other plants which come from regions where winter cold is tempered by fog and rain, with little sunlight, this iris suffers in American winters with their freezing temperature, sharp winds, and brilliant sunshine. It seems to be hardy enough as far as its roots are concerned, but the broad green leaves suffer and in time the plants may be weakened enough to succumb. It is easily raised from seed which is produced rather freely and the little seedlings soon come to flowering. The exquisite white form will also breed true from self-fertilized seed. The type varies somewhat in color but is usually a rather rosy lavender with blotches and marblings of a slightly deeper hue. Both types increase naturally by means of the spreading rhizome, which travels in somewhat the same way as our native I. cristata."

This quotation from the January issue of the National Horticultural Magazine, where Iris tectorum is well illustrated, has reminded me of a rather entertaining discussion that I am having with Mr. and Mrs. Herbert Durand, who have made so deep a study of our native plants and their needs. Mr. Durand casually spoke of I. tectorum as so common on the thatched roofs of Brittany and Normandy, and I immediately questioned the accuracy of the statement if only because I had remembered early references to "flags" and knew that I. tectorum had not been introduced into Europe until around 1870. The question is now open to discussion and every few days I hear new echoes pro and con. I wonder how many of our members know the answer.

Robert S. Sturtevant

Editor Sturtevant's comment brought this from M. Truffaut of Paris, France: "These irises are usually *pumilas* (either the type or one of its varieties) and sometimes. . . *germanicas*." Dykes had mentioned the latter as grown on thatch in Normandy and Brittany. Whether M. Truffaut meant the true *Iris pumila* is much in doubt; very likely the roof irises of France were the so-called *chamaeiris* Dwarfs. (Bull. 32 p.63) and in Bull. 33 p.52 was reproduced a photo of an open-sided, thatched garden structure with a four-pitched peak-roof on the crest of which irises held the whole thing together in Deauville, Normandy, while in his article reporting his study of irises in Japan, Dr. Reed submitted a photo of



Pogon Iris peaking thatch of a gardenhouse near Deauville, Normandy, France.

I. tectorum growing luxuriantly on the long ridgetop of a thatched farmhouse, with barley and vegetables in the front yard (Bull. 40).



Iris Tectorum on the ridge of a thatched farmhouse in Japan. The front yard is planted with barley and vegetables.

How familiar! Barley rows just as I saw them, always interplanted with a follow-up crop of peanuts.

Roy Davidson

Sketches by Roy Davidson from AIS photos

Iris Fimbriata. Ledger's Variety.

THE photograph that appears opposite page . . . is of a plant of a form of *Iris japonica* *syn.* *fimbriata*, and various other synonyms, including *Evansia chinensis*, that has been growing and flowering in the open for several years. Its origin, however, is unknown, and the farther one seeks for information on this point, the more mysterious it becomes. There is I think no doubt whatever in the minds of those familiar with the species *Japonica* and this form, that it is distinct. I am sorry that so far as my own observation is concerned, it has never been my good fortune to get a bloom of the older and less hardy form for comparison at the time this one was in flower. Relying upon memory, however, I have always thought that Ledger's is a paler colour form and that there is much less of the lilac mauve colour in the falls. I have never seen the older form flowering out of doors, indeed, have always regarded it as a plant for the cool greenhouse, although I once saw a fine clump of it in a Norfolk garden that was said to flower occasionally.

A second difference is that whereas the older *Japonica* flowered very early in the year (Mr. Dykes speaks of a late January frost in 1911 destroying all the flower shoots), this flowers much later in April. The photograph was taken on April 26th, 1927, in the gardens of Mr. J. E. Harold Terry, in the Isle of Wight, where everything was a fortnight earlier than in most gardens on the mainland. This would make it early May-flowering in, say, the London district. In the gardens of Messrs. Wallace & Co., at Tunbridge Wells, I photographed it in the year 1924 in the first week in May.

Neither of these differences are sufficient to claim for it real varietal distinction, though they do point to its being a geographical form collected elsewhere than in the districts of China and Japan, mentioned in Dykes' "The Genus *Iris*." The colour variation, if such really exists, goes for little as it is known there are different colour forms in China and it is even claimed that a pink-flowered form has been found there.

The plants that are at present distributed under the name "Ledger's variety" are, I believe, the progeny of plants given to friends by Mr. Walter E. Ledger, of Wimbledon, who, writing in "Gardening Illustrated," on July 16th, 1927, says, "I do not know how it has come to be styled Ledger's variety, it is none of my doing. Possibly friends who had it from me passed it on with that description to distinguish the form from the type plant." In the same note he says he received his original plant from Major Lugard, who had it from his brother Sir Frederick Lugard, who found it growing in the gardens of the British Legation at Tokio, and brought it home in 1912.

Mr. Dykes, in his "Genus *Iris*," was evidently not familiar with this form, indeed it could hardly have flowered in England at the time he was writing. One *Iris* enthusiast has suggested to me that it might be a geographical form collected in Chitral, but Mr. Ledger's note rather upsets

this theory. Moreover, Mr. Dykes spoke of it as having been "Naturalised in Chitral," and stated that he received plants from Major General Lorne Campbell, of Abbotabad, and goes on to say: "I had hoped that this undoubtedly hardy strain would perhaps consent to flower in England, but, unfortunately, this has not proved to be the case." This appears to eliminate Chitral as a possible source of origin, and throws us back on Japan. But why is it that a plant known as early as 1794 (it appeared in *Curt. Bot. Mag.*, 1797,) should have been considered as having only one, and that a comparatively tender form, until 1912. And whence came this hardier form? Surely a plant growing in Tokio in 1912 would have been introduced into Europe long before that date.

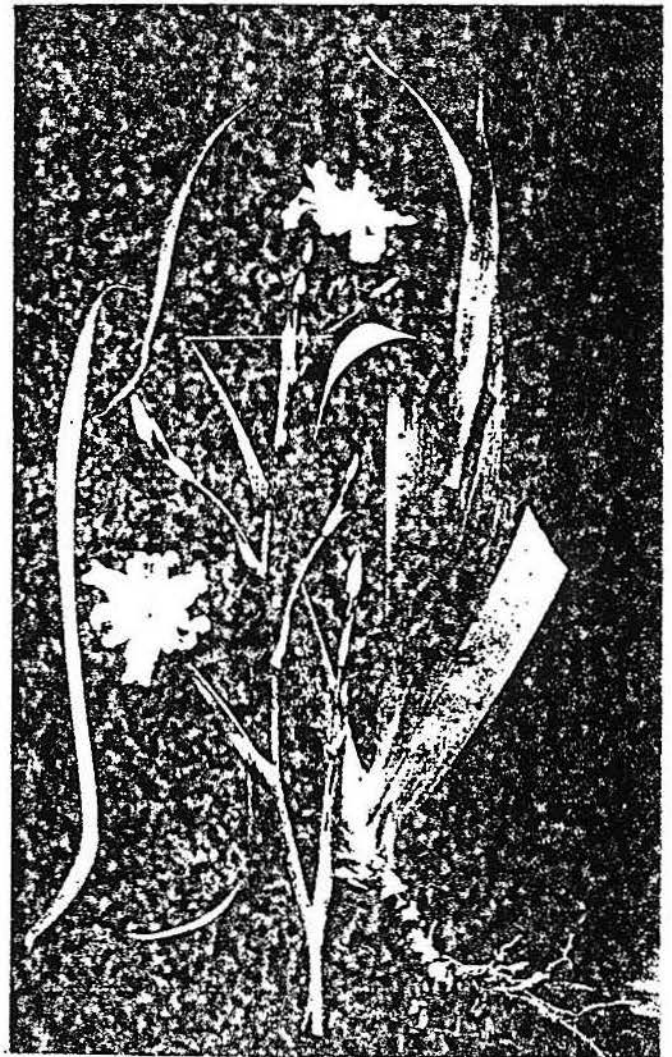
Whatever the answer may be, it is certain that in it we have a valuable garden plant that is worthy of cultivation, and easily grown in most English gardens. In the Isle of Wight it becomes rampant and flowers with great freedom. When the Committee on Iris Nomenclature is appointed, I think they will have to re-name this form.

D.



By courtesy of "Gardening Illustrated."

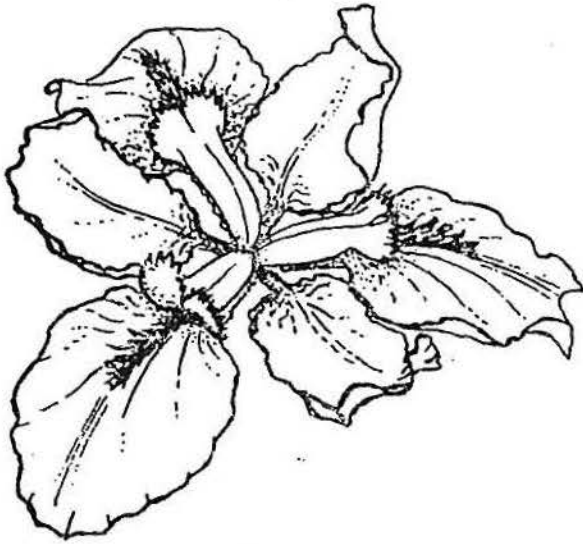
Iris Fimbriata, "Ledgers" Variety.



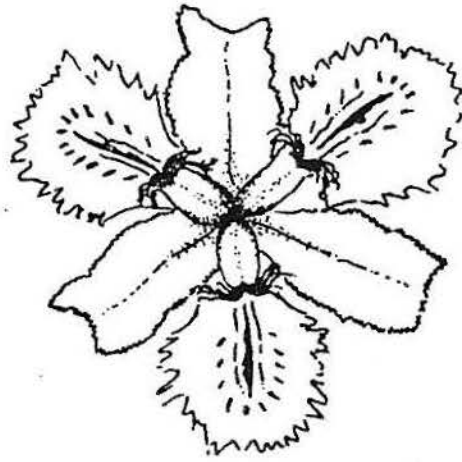
IRIS CHINENSIS from BOOK OF THE IRIS - Lynch 1904

Both are synonyms of *I. japonica*.

AND A FEW EVANSIA PICTURES THAT CAME LATE



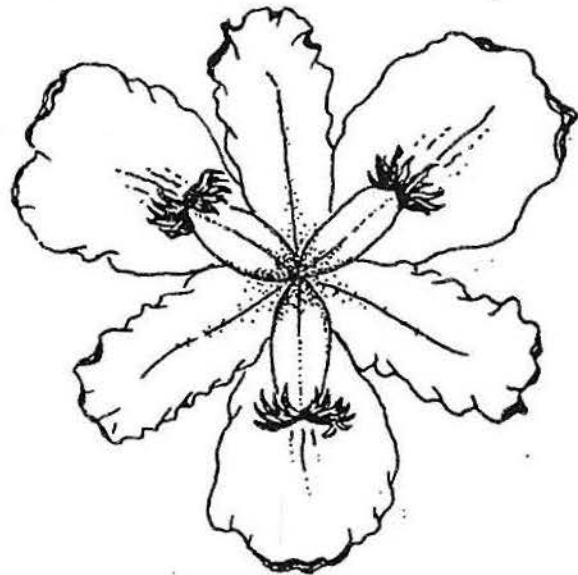
I. tectorum Taiwan form -- drawing by Jean Witt



I. Japonica
-- drawing by Jean Witt



Iris formosana
From a colour transparency by H. Veebles



I. wattii
-- drawing by Jean Witt

THEY HAD TO CALL IT "IRIS CONFUSA"

Elaine Hulbert, Floyd, Virginia

Frankly, I would never have cared so much about growing the tender evansias if they had not sounded so exotic and so difficult when I first read about them in the early issues of SIGNA. Pictures I saw of Iris japonica in bloom and descriptions of "Nada" in frilly white flower in February had a certain effect too.

I started collecting all I could buy, and soon had added "Elwood Molseed," "Darjeeling" and "Bourne Graceful." Not really difficult, I found, if they were not exposed to cold temperatures. That meant pots for six months of the year, where I live, but all these evansias thrive under a regimen of continual uprooting.

So where was the challenge? Well, for one thing I now had three hybrids of japonica and confusa, three clones of japonica, (if the variegated "Aphrodite" is indeed another clone from "Ledger's Variety"), and not one species confusa. Where could I get one? There was no such thing in any plant list I subscribed to, neither seed catalogs nor nursery catalogs. In fact, further reading showed that as the name had teasingly suggested, there was no real agreement about the plant used to get the hybrids "Nada," "Elwood Molseed" and "Darjeeling" with I. japonica.

I had just about concluded that there was no confusa in the Western Hemisphere when I ran onto one by accident--across the Atlantic. One afternoon in London I noticed that there was an autumn flower show in Vincent Square, on my way between the hotel and the Tate Gallery, so I dropped in. A booth with the sign "Queries" prompted my question: "Where can I get Iris confusa?" I was asked to come back in ten minutes. And when I did, I was handed a little green catalog open to the page where a tick-mark indicated Iris confusa. No trouble. No problem.

It was six months before the plants arrived from the Birch Farm Nursery in Sussex, and another year before they bloomed. Everything up to that time had led me to think that I had another "Elwood Molseed": it was a small, slender, close-clumping light-green plant, and its flower opened in proportion, white and lightly marked--but with no scent at all. "Elwood's" good, sweet smell had been its great virtue, to my way of thinking, but unless it had lost all trace of this sugar-apple-blossom perfume somewhere along the line, it could hardly be the same. There was every other sign of a close relationship, though.

(The faint sour-apple-blossom smell of I. japonica is not altogether different from "Elwood's," but in the hybrid the smell is "cleaned up" and intensified to one of the ten best, surely, among iris fragrances.)

THEY HAD TO CALL IT "IRIS CONFUSA"

Well, much of what I was now reading in British publications did seem to confirm that it was an iris very much like this one that they had in mind when they referred to "confusa." I first labeled it "ICI confusa (?)" and later shortened this to "Icy." But that year I also bloomed a rather different plant under the marker "ICS confusa." It had come from Eberhard Schuster in East Germany, and in response to my inquiries Eberhard said that he had received it from West Germany as a seedling of confusa. Nicknamed "Isis," this plant easily made three or four of "Icy" under the same conditions. Its burliness made me think of the much more robust (than the species) hybrids "Nada" and "Darjeeling." There were interesting differences, however: the short, thick "cane" of the hybrids became a much taller (twenty inches, twelve nodes) stalk; the bloomstalk was almost completely out of the crowning leaf-fan before any buds opened; there was no purple coloring on the cane--although fine purple margins could appear temporarily on the new leaves--and the flowers were whiter and less flat than those of the hybrids, with markings almost invisible except for the light yellow of the crest. Except for size, these characters were really pretty close to the British confusa, "Icy." Tentatively, I thought I might have two clones of confusa now.

Bees were buzzing around all the evansias that April, so I left it to them to give me an idea how the fertility factor might operate. "Isis" was as fertile as its hybrid relatives, but I got no buds on "Icy." Since its blooms were few and soon over, it may not have had a reasonable test.

The next bloom season gave me a chance to prove that "Isis" was self-fertile but my attempts on "Icy" again were fruitless. At the same time, my project was happily complicated by the much-appreciated gift of the "Chengdu" iris.* Could this be the blue-violet form of I. confusa not seen for some time, if ever, in the West? "Chengdu" in plant habit is very close indeed to my first two confusa clones. They all grow without spreading widely, on short stolons, and "Chengdu" takes the middle place in overall size. It gives a rather different effect, though, with its brighter green and rather crisper and wider foliage; by its side "Icy" and "Isis" look rather lank and pale, though all three grow and proliferate steadily. "Chengdu" is fertile with "Darjeeling," but I have had little chance to work with it yet.

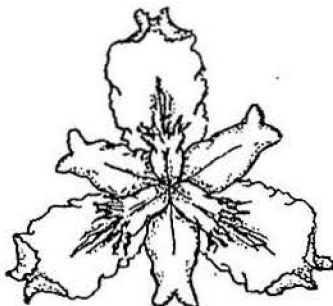
In the year since, I have not made any headway at discovering whether I have the real confusa even once, let alone more than once. But I am now looking at buds -- and January is just over! -- on still another plant that came labeled Iris confusa, but accompanied by a question mark. Its origin is the very Bay Area of California where Elwood Molseed made many crosses, including a couple I have. The bloomstalk on the new plant comes out of a fan of firm, shiny green leaves purpled at their base, and the leaves in turn crown a very thick, short, green-brown-purple cane. Since among the other evansias only japonica "Ledger's Variety" is showing signs of budding at this early date, and I do not expect to see buds on the other three possible confusa's for at least six weeks yet, this sets Number Four apart. But if it is in fact another hybrid, it is unique among those I know of in being completely sterile -- So I am reliably told by the kind donor.

The whole problem of fertility and sterility needs a lot of work if anything is to be deduced as to these plants' identities. Even chromosome studies could not provide instant illumination, since hybrids here are commonly more fertile than their parents, and if the parents are polyploid the children could have a really wide range of chromosome numbers. All japonica clones now in circulation seem to be self-sterile, though they will apparently cross with those of their own hybrids now in circulation. Of the so-called confusa clones, one is fertile with itself and everything tried; one is of doubtful or low fertility; "Chengdu" is at least to some extent fertile; and Number Four is completely sterile.

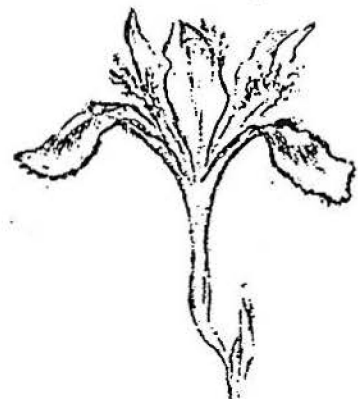
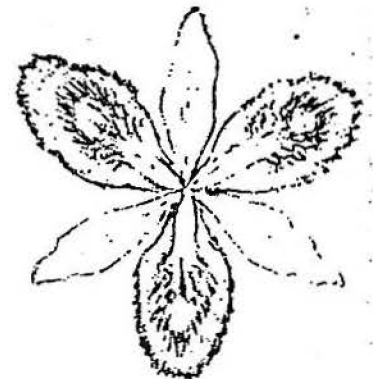
A better observer than I could perhaps construct the real Iris confusa -- or at least the one that existed in the Bay Area when the hybrids were made -- from features of the hybrids which known clones of japonica seem to lack. Comparing the bloomstalks as Jean Witt does on pp. 1204 and 1205 of SIGNA leaves you wondering, for example, where the branching of "Nada" comes from. Still, hybrids can exhibit characters that were suppressed, or never coaxed out, in their parents.

Perhaps it is a little late in this article to bring up the garden or greenhouse or windowsill virtues of these plants, but I think everyone who has grown one or more of them has found them very satisfying, and no more trouble than the most popular house plants. The flowers of "Isis" are especially big and fluffy, and are produced almost as freely as those of the hybrids. "Chengdu" is very pretty, first choice I should say among the medium-sized subjects here. But "Elwood Molseed" is almost hardy (at least if not frosted too often), is tidy to a fault, and of course has that marvelous fragrance.

* Read about it in SIGNA, p. 1039.



I. confusa
-- drawing by Jean Witt



I. "Chengdu"
-- drawing by Jean Witt

Notice the fimbriate style arms and toothed edges to the falls on these and on I. japonica.

IRIS WATTII* IN THE EAST

From AIS Bulletin 30, January, 1929

James C. Stevens, Greenville, N.Y.

After seeing *Iris wattii** growing in Mr. Berry's garden at Redlands, California in March of 1927, I was determined to try it here in the east, although I knew that it was tender. My root (which was the end of a long underground runner with new roots well started) arrived toward the end of April and was planted in an old agate sauce-pan about ten inches in diameter and five or six inches deep with several holes in the bottom for drainage. A dish of this kind I find much better than a clay pot. As most Evansias like humus, a mixture mostly of leafmold with a little sand and good garden soil was used.

The main stalk only grew to a height of about eight inches the first summer, but several new shoots started toward the middle of August and two more appeared in the fall.

During the fall the pan was taken into the cellar every freezing night and set out again in the morning in the sunniest location possible. It is said



that *wattii* as well as *japonica* likes half shade, but I find that full sun here in the east is better for them unless possibly in the very hottest weather. But they must have sufficient moisture all the time. When the weather became too cold through the day the pan with other plants was placed in a frame covered with glass-cloth and built over a cellar window. This faced the east and the window was kept open all the time so that it was heated from the furnace in the cellar. During severe weather the plants had to be taken into the cellar but most of the temperature was between 40 and 50 Fahrenheit until March at least.

About the middle of March the flower buds began to show. Not only the main stalk but two of the smaller fans also produced buds. The plants were left in the window frame until the first of April and then were taken upstairs to a sunny window in the living-room. The first bloom opened on the eighteenth and the accompanying picture was taken on the twenty-ninth. The last bloom faded on the first of May.

After blooming the roots were moved to a larger pan and two offsets were started in other pans. By the fall of 1928 there were six fans in each group besides four that were removed and started by themselves. This year the stalks are very typical in growth and some are over two feet in height.

I have found *wattii* very tender and not able to withstand as much frost as *japonica*.

*This is the plant misidentified by Dykes, later named *Iris confusa* by Sealy. Stevens was to later register FAIRYLAND from his mating of (*I. japonica*, var. UWODU x *I. confusa*) which was distributed by Berry. B.L.D. [I have changed the spelling from *I. watti* to *wattii* in conformance with the spelling in Mathew's THE IRIS. ED]

from the British Iris Society Yearbook, 1938

Iris Wattii and Some of the Evansia Section.

By F. C. STERN, O.B.E., M.C.

IN "The Gardeners' Chronicle" of December 4th and December 11th, 1937, Mr. J. R. Sealy, of Kew, has written an interesting article on the botanical affinities and descriptions of some of the Evansia section of the genus *Iris*, with special descriptions of *Iris Wattii* and *Iris confusa*. It might be useful to consider this article from the point of view of the gardener and the grower.

First of all we have to change the name of what we have always known in gardens as *Iris Wattii* to *Iris confusa*. It is always a pity to have to change the name of a plant well known in gardens, but in this case, owing to the clear account given by Mr. Sealy, the reasons for this change are obvious. *Iris confusa* (late *I. Wattii*) is a very attractive plant and is quite hardy in the gardens in the South of England. Its long, bamboo-like stems with the leaves growing out from the top of the stem are striking and decorative even in winter. After the plant has flowered in June these old leaves die and look untidy. The old leaves can then be cut away; the young shoots have by that time already begun to grow from the base and will soon take their place. The small white flowers with the orange spot on the falls make a good showing as there are plenty of them. Mr. Sealy refers to the flowers as "faintly tinted with mauve". This is strictly true, but out of doors in cultivation the look of the flowers gives one the idea of white flowers.

Iris confusa appears to grow best in a southern aspect in among shrubs where the plants do not get the full force of the sun and are out of the way of the East and North wind. It does not seem to mind what soil it grows in: it has no dislike of lime. *Iris Wattii* was originally described in 1892, but I do not think the true plant was introduced to cultivation till Major Laurence Johnston brought the plant back from Tengyueh in Yunnan in 1931. It grows well in Major Johnston's garden near Mentone in the South of France. It is a most lovely plant after the style of *I. confusa*, with bamboo-like stems and the tuft of leaves on the top of the stem, but the flowers are far finer than those of *I. confusa*; the flowers are larger in size and their colour is a delicate form of mauve. It grows and increases easily in the happy climate of the South of France. I am not sure whether it will be hardy in England. I lost it when I first grew it, but perhaps that was not a fair trial.

There is another *Iris*, Kingdon Ward No. 8,154, collected by Mr. Kingdon Ward in the Delei Valley of Assam, which may be the same as the true *Iris Wattii*. It may, on the other hand, be something different or perhaps a hardier form of *I. Wattii*. It is growing at Highdown, but has not yet flowered. The leaves and manner of

IRIS WATTII AND SOME OF THE EVANSIA SECTION - continued

growth look different from either *I. confusa* or *I. Wattii*; so far it has not been touched by frost. It is very difficult to describe on paper the differences in the leaves of these species, so we must wait till it flowers before one can truly say to which species it belongs.

The other three Iris—*I. tectorum*, *I. Milesii* and *I. japonica*—are all well-known in gardens. They all seem to grow best in among shrubs, where they do not get the full glare of the sun all day. *I. Milesii* is, perhaps, the least beautiful of the three, and seems less tolerant of lime than the others. *Iris japonica* is a very lovely plant and there is no more beautiful sight than a large patch of this Iris in flower in May in a half-shady place. The white orchid-like flowers against the deep green leaves are very beautiful. The variety known as Ledger's variety seems to be hardier than the type. *Iris tectorum* is also a beautiful plant and seems to like the same sort of position as *I. japonica*.

from the British Iris Society Yearbook, 1941

I. Wattii.

I. WATTII has flowered in several gardens during the past spring. It is a noble plant, the flower stems 3 ft. 6 in. to 4 ft. in height, each stem carrying a number of lilac-lavender flowers with wavy margins. The character of the flowers and growth resembles the plant which used to be called "Wattii," now called "confusa," but the shade is richer and the size of flower considerably larger.

It has to be admitted that it cannot be classed as a hardy plant, though in favoured localities it may stand the winter in the open.

Major L. Johnston writes :—

"When travelling in Yunnan with Forrest in the year 1931, I was taken ill and went back to Tengyueh (on the frontier between Yunnan and Upper Burmah) and was sent to the hot springs, about one day's ride from there. It was on the way to the springs that I found *I. Wattii*. The specimen I collected seemed to be a fine variety and darker in colour than the general run. The shade of the flowers growing there varied a great deal. It was growing in a ditch by the roadside in more or less cultivated land. It was really a small irrigation canal leading to the rice fields."

I. Wattii was shown by Lord Aberconway at the R.H.S. meeting on 5th April, 1938, and received an A.M. as a tender plant.

It is described on page 292 of Vol. LXIII of the *R.H.S. Journal*.

C. W. C.-M.

From the British Iris Society Yearbook, 1953

SEEDLINGS FROM *IRIS WATTII*

By Jean Stevens

For many years I have grown my Evansia irises in a small section of the garden facing east, well sheltered from our sometimes very boisterous northwesterly winds. *Iris Wattii* has now flowered for five years in this garden, and is proving a very easy subject, but, unlike most other species when doing well, is not easy to induce to set seed. Two years ago I tried crossing some of the flowers with *I. japonica* and DARJEELING, the latter, of course, being an F₂ derivative of *I. japonica* and *confusa*. I failed to set pods in either case, though many flowers were pollinated. Becoming progressively busy during the many weeks that *I. wattii* is in bloom, I gave up all hope of getting any hybrid - or even self-set seed on it. However, towards the end of its flowering a number of seed pods formed, and these were duly harvested. The small pods, about an inch and a half long and half an inch in diameter, gave from a single good seed up to a dozen to a pod, though from the quantity of undeveloped seeds the species is obviously capable of producing a much larger number. Most of the seed harvested was sent off to gardeners abroad, but as I have never seen any record of *I. Wattii* having been raised from seed, I sowed a few myself. I understand that when Major Lawrence Johnson collected the species in Yunnan in 1931 he brought the plant back - not seed. I was therefore interested to find out if there would be any variation in colour from seedlings.

Only two seedlings germinated from the seed sown, and these were planted out in the garden last spring. They rapidly made good-sized fans, and towards winter began to throw up increases. This encouraged me to hope that I should not have long to wait for the plants to reach flowering size, and this proved to be the case. Growth continued throughout the winter months until each plant had a number of well-developed fan growths.

Iris Wattii usually comes into flower in this garden towards the end of August, just before the hybrid show daffodils. It was not until the end of September, however, that these two seedlings opened their first blossoms. Until the flower-stems began to run up, the only difference I could see between my old stock and these seedlings was in the colour and ribbing of the foliage. The colour of the leaves was a definitely paler green, and the ribbing much less defined. Naturally I attributed these differences to the age of the seedlings. It was not until the flower-stems left their enclosing fan-growths that I found that neither seedling showed any of the purplish basal colour of the normal stem of *I. Wattii*. The first seedling produced its stem to 2 ft. 10 ins. before opening its

Continued on page 1370

first flower,¹ and the second to 2 ft. 4 ins. The height of these stems did little to arouse my suspicions, as again I attributed their dwarfing to the age of the plants—just twelve months from germination. But when the first bud emerged from its terminal spathe, I was aroused to excitement, for the colour shown by the furled unopened bud was a rich deep lavender-violet! At that time the second seedling was showing no colour, but, intrigued by the depth in the first seedling's bud, I examined the buds and stem of this other plant more carefully, and was struck not only by the lack of any purplish flush on the stem, but also by the extremely light green of the stem- and spathe-branches. Naturally by this time I was wondering if I was going to be so fortunate as to get a white form of *I. Wattii* from this second seedling.

After days of impatient waiting the first seedling opened its terminal bud. What I saw was so like *I. tectorum* that I was quite dumbfounded! However, as the flower developed so did certain decided differences from *I. tectorum*, other than the already obvious differences of winter growth, a bamboo-like taller stem, and a wide inflorescence. The flower was $4\frac{1}{2}$ inches in diameter, equal in size to if not somewhat larger than *I. Wattii*, with standards $2\frac{1}{4}$ inches x 1 inch and falls $2\frac{1}{2}$ inches x $1\frac{1}{2}$ inches on the blade. Besides the terminal spathe, which was four-headed, there were five side-branches. The true stem, crooked and stout as in *Wattii*, rose from a fan with a lower "stem" or aerial rhizome of only about four inches, though this short lower "stem" may be due to the plant's seedling status. The perianth-tube of the flower was nearly an inch long, definitely longer than in the species, a dull violet-green in colour. The standards were deeply channelled and narrow along the half-inch haft, opening suddenly to the blade, which, held at a horizontal plane, was slightly concave and only very lightly ruffled, the colour being a little lighter than in *I. tectorum*. The falls were ivory-white, veined and stippled with olive-toned violet along the inch-wide haft, which was shallowly channelled. The blade of the fall was slightly deeper in colour than the standard, with short broken violet veins around the crest and centre of the blade. The fall-crest was a single wavy comb, olive-dotted white, three-sixteenths of an inch in depth, and with a prominent tip extending nearly a quarter of an inch out from the blade of the fall. The crest of the style-arm was deeply serrated, but showed no lacination as in *I. Wattii*. The style-arms themselves were nearly double the size of those of the species.

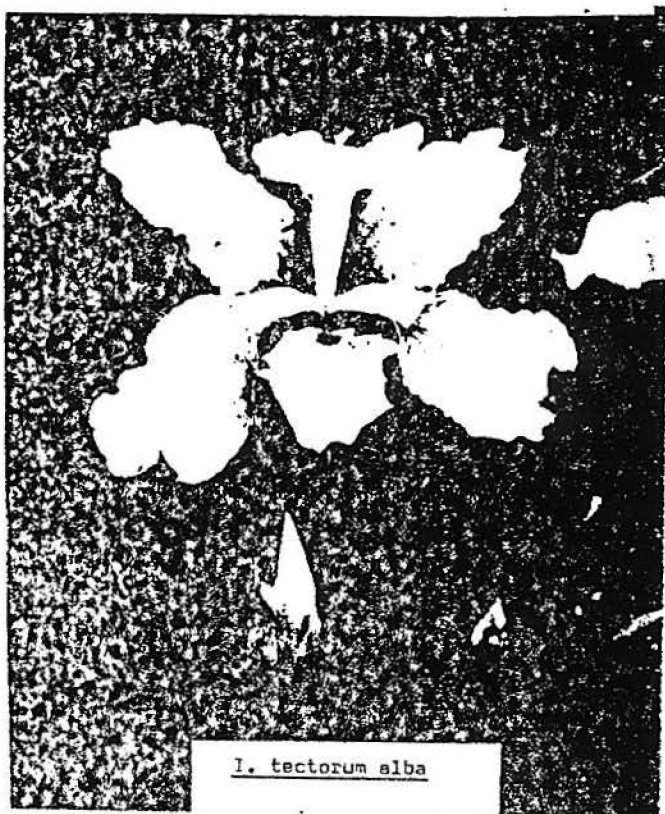
When the second seedling opened, it also proved to be a rich lavender-blue, similar to that of *I. tectorum*, but instead of the single fall-crest "comb", it had the multiple crest of *I. Wattii*, which varies in different flowers from a decided triple crest with two half-developed outer crests, to a definite five lines of cresting. This second seedling, unlike the first,

carries no pollen, and despite its somewhat lower height had an extra branch, making six for the inflorescence. The crest of the style-arms was lacinated, though the lacinations were not so long as those of *I. Wattii*. Another variation from the first seedling was that it had a white patch around the base of the fall-crest. The broken violet veins of the first seedling became deep violet blotches in this second plant. Through the falls of *I. Wattii* there is a thin white band, extending from the crest and becoming a fine white line at the tip of the fall. There is no sign of this feature in either of the seedlings. Another point of interest was in the foliage of the second seedling, where the leaves were not only pale in colour but were thin in texture, and not ribbed except in the oldest leaves, and even here the ribbing was elementary.

It is, of course, obvious that the two plants I have raised are not *I. Wattii*, but a hybrid between that species and another Evansia. Although it will not be possible to confirm my conjecture until I either manage to raise an F_2 generation from these plants or reproduce the cross by hand-pollination, I think there can be little doubt that these plants are *I. Wattii* \times *I. tectorum*. Apart altogether from their colour, their divergences from *I. Wattii* are either those of *I. tectorum* or approach those of this latter species. Lastly, but not least to my mind, *I. Wattii* did not set any pods until, towards the end of its flowering-season, *I. tectorum*, growing nearby, came into flower.



I. wattii
-- photo by Jean Witt



I. tectorum alba

Growing Iris Nada in Minnesota

by Lois D. Seeden

Rogers, Minnesota

Living in Minnesota precludes growing many beautiful plants I'd like to grow but which aren't hardy in zones 3 and 4. However, some of those can be enjoyed if we are willing to treat them as house plants. One of those with which we have had great success is the iris Nada.

Nada (the hybridizer pronounced it "NAY-da") is an evansia hybrid (japonica X wattii) hybridized by J. N. Giridlian of Arcadia, California, and registered in 1936. It's interesting that both parents are described in the A. I. S. 1939 Checklist as being blue, although the 1929 checklist indicates *I. wattii* to be a white self. Nada is a lovely white with pale lavender style arms and a striking golden crest. Japonica was found in Japan in 1794 by Carl Peter Thunberg, a Swedish botanical author; *wattii* was brought into England from the Himalayas and China nearly a century later, in 1892. An article on Nada published in the January, 1948, A. I. S. Bulletin, describes Nada thus, "It is easy to detect the qualities of each of the parents of the beautiful Nada. It has the large, graceful, branched panicle of *watti* [sic], also the rather bamboo effect in the foliage---the beautiful golden crest of *watti* [sic] and the general form of japonica. It is not a showy flower but most exquisite at close range with its fringed style arms and waved petals." While each flower lasts only a couple of days, there are many buds on a stem that keep opening one or two at a time as the scape grows. The blossoms compare favorably to orchids.

We've been growing Nada for about seven years in a large flower pot. It took about three years before we saw the first bloom on one stem while the pot was outside on the north side of a building during the summer.

In early summer of 1985, we took the rhizomes, now numbering three, out of the pot for the first time and planted them in the ground on the northeast side of the house. Before frost in September, we put them into a much larger pot using a small amount of commercial potting soil mixed with regular garden soil, which for us is clay-loam. We brought the pot inside and placed it in front of a north-northeast facing picture window in the walkout basement of our home. That must have provided just the right environment since it really took off. It started blooming in late May of 1986 and was very seldom without bloom all summer, the last three flowers blooming on August 7th. Occasionally there were only one or two flowers open, but usually there were six or seven and sometimes as many as eleven open at once.

As I write this in January of 1987, the four rhizomes have increased to eighteen with beautiful green leaves two feet long and there is one bloom stalk which we are watching with baited breath. It has been sitting there, about eight inches tall, for three or four weeks. It seems to be thinking, "Maybe I came too early."

Nada has been so happy since we put her in front of the northeast basement picture window that we haven't moved her---not even to put her outside in the summer. She seemed to enjoy the air conditioning during the hot weather. By the looks of the bulging pot, there will have to be some moving and dividing this next summer.

If you don't grow Nada, I strongly urge you to try it. After last summer's stellar performance, it has firmly established its place as my favorite iris.



Iris Milesii.

I should like to call attention to the extraordinarily long flowering period of I. Milesii. In my Surrey garden this year a small clump of a dozen plants commenced to bloom on 1st June and continued until 12th July, a period of forty-two days! I. Milesii, although somewhat decried by Dykes, is to my mind quite an attractive species, its graceful, slender spikes of purple flowers rising to a height of thirty inches here (Dykes gives three feet as the height)--aspect sunny, soil ordinary. Milesii belongs to the Evansias and is named after Frank Miles, who raised plants in 1880 from seeds collected in the Himalayas. Dykes records its flowering in the autumn (1910).

F. W. H.

I. milesii

-- photo from The Book of The Iris. Lynch, 1904

A Layman's Interpretation of:

CYTOGENETIC STUDIES IN THE GENUS IRIS:
SUBSECTION EVANSIA, BENTH.

B. B. Chimphamba
Department of Botany and Microbiology,
University College, London, England

from CYTOLOGIA 38: 501-514, 1973

Some ten or more years ago a copy of the the above learned document which was published in CYTOLOGIA was received by Jean Witt from Dr. Robert Egli of Switzerland. Your present editor received it from Bruce Richardson appended with numerous notes from here and there as to how it might be used in SIGNA. The whole is 14 pages long and the photocopy not good enough to recopy. So herewith, your Editor is risking whatever reputation she may have in trying to extract the information therein and present it in condensed and, hopefully, understandable form. My comments and attempts to interpret are in brackets.

INTRODUCTION

The genus *Iris* (family Iridaceae) includes over 200 species, all native to the Northern Hemisphere. The subsection *Evansia* (named for Thomas Evans who is said to have introduced *I. japonica* in Europe) includes twelve known species, three from North America and the rest from Asia. Their distinctive feature is a linear crest replacing the beard which marks the bearded group. *I. cristata* was the first to be recorded [i.e. in botanical literature]. *I. japonica* followed in 1794, *I. gracilipes* in 1859, *I. tectorum* in 1871, *I. speculatrix* in 1875, *I. milesii* in 1883, *I. confusa* (originally called "wattii" in error) in 1892, and *I. wattii* in 1931. *I. lacustris* was formerly accepted as a localized form of of *I. cristata*.

In a discussion of the *Evansia* group by the British Iris Society Species Group (Species Group Bulletin 1966) the nine most familiar were arranged in three groups according to observable physical similarities as follows:

	[species]	[chromosomes]
Group 1	<i>I. confusa</i>	(2n=30)
	<i>I. wattii</i>	(2n=30)
	<i>I. japonica</i>	(2n=34,36,54)
Group 2	<i>I. milesii</i>	(2n=26)
	<i>I. tectorum</i>	(2n=28)
Group 3	<i>I. cristata</i>	(2n=32)
	<i>I. gracilipes</i>	(2n=36)
	<i>I. lacustris</i>	(2n=42)
	<i>I. speculatrix</i>	(2n=44)

This grouping is followed in these investigations adding *I. formosana* (introduced to Europe in 1969) to the first group. *I. cristata* and *I. lacustris* are restricted to eastern North America and the other eight species to eastern Asia. An additional

eastern Asian species is *I. pseudorossii* which was not available for this study. Another species was added in recent years by Lee Lenz who transferred the western North American *I. tenuis* to this section [presumably both in Group 3].

The Evansias are of special interest for several reasons. First there is little evidence other than the crest that there is an evolutionary link between these species. They are of interest cytogenetically [scientifically relating cell structure, function, etc. to genetic inheritance, I think--can someone think of a better definition?] because with one or two exceptions [*I. tenuis* is reported to be ($2n=28$) as is *I. tectorum*] the reported chromosome numbers are different and form an interrupted aneuploid [oops! my dictionary conked out on that word] progression. Cytological affinities [Close relationships of cell structures] within the group need to be determined, not only by comparing the appearance of the chromosomes but by meiotic [how the cells look as they divide?] observation in hybrids.

MATERIAL AND METHODS

The plants used in this study were obtained as transplants or as seed from botanic gardens.

Somatic chromosome numbers were determined from root tips stained by the Feulgen squash method described by Darlington and LaCour (1942). Slides were temporarily sealed with rubber solution and stored for up to three days at about 0 C. They were made permanent by the quick-freeze method of Conger and Fairchild (1953). Photographs were taken. [Anyone wanting a more complete description can send me a couple of stamps for a copy--about a half page.]

For cross-fertilization, it was often necessary to store pollen, but whenever possible fresh pollen was used. Except for a few species self-fertilization was possible so it was necessary to emasculate the flowers. [pollen storage and emasculation have been described often.] The buds were bagged to prevent insect contamination. Pollination was done with a clean camel hair brush.

RESULTS

a) Cytology

Chromosome counts in this investigation agreed with previous counts except for two species in Group 1. *I. formosana* was previously noted at $2n=28$ and in this study was counted at $2n=35$. [the conclusion here seems to be that this was possibly not a pure form of this species.] *I. japonica* was counted as 31, 33, and 54 in this study. The $2n=54$, which agreed with earlier counts, was of the hardier Ledger's Variety and in material recently imported from Japan. The counts of $2n=31$ and $2n=33$ had not been previously reported and were found in non-hardy forms grown in Europe and in forms from Japan said to represent the wild form.

Chromosomes varied in length from 1μ to 7.5μ [?]. The smallest chromosomes were from *I. lacustris* and the largest from *I. wattii* and *I. cristata*.

Conclusions reached from this part of the study were:

1) the karyotypes [general appearance of the cells] of *I. confusa* and *I. wattii* show more similarity than any other *Evansia* species. Their close relationship was later confirmed in the hybridization studies.

2) There was no evidence that external similarities of species in Groups 2 and 3 were matched by karyotype similarities. In *I. tectorum* there was more resemblance to chromosomes in the $2n=54$ *I. japonica* than to those of *I. milesii*. *I. milesii* showed more similarity to *I. cristata* than to *I. tectorum*, and *I. lacustris* showed more similarities to *I. speculatrix* than it did to *I. cristata*, even though for many years it was considered to be a variety of *I. cristata*.

3) *I. gracilipes* had some chromosome types that occurred only in Group 1 species.

4) All forms of *I. japonica* and the plant supposed to be *I. formosana* had a few chromosomes showing shapes not found in either of the other Group 1 species.

5) The two low-chromosome-number types of *I. japonica* ($2n=31$ and $2n=33$) differed from the fertile form in having some chromosomes resembling some of those in *I. confusa* and *I. wattii*.

6) Two forms of *I. japonica*, *I. tectorum*, and *I. formosana* had some chromosome shapes not found in any other species.

b) Interspecific hybridization

Ten *Evansia* species were used in experimental hybridization. [Here he presents a chart "Interspecific Hybridization in *Evansia* Species" showing pollination of: *I. confusa* by five different species with no takes; *I. wattii* by nine species with 24 pods from *I. confusa* averaging 10.6 seeds per pod and two pods each swelling but no seed from the *I. tectorum* and *I. milesii*; *I. japonica* ($2n=54$) by six species with seed produced by *I. confusa* (forty pods averaging 6.3 seeds) and *I. japonica* ($2n=31$) (two pods averaging 12 seeds); the reverse cross of the preceding two produced no seed; *I. milesii* produced one seed from ten attempts with *I. tectorum* pollen and two other species; *I. tectorum* produced one seed by *I. confusa* and one by *I. milesii*. No seed was produced from *I. cristata* pollinated by five other species; *I. gracilipes* by four other species; *I. lacustris* by *I. speculatrix* or *I. speculatrix* by *I. confusa*. Of the 580 crosses tried, only three crosses germinated and their percentage of germination was: *I. wattii* by *I. confusa*, 33.11%; *I. japonica* ($2n=54$) by *I. confusa*, 18%; and the same *I. japonica* by *I. japonica* ($2n=31$), 8.4%.]

DISCUSSION

Previously relationships within the *Evansia* group have been based on similar appearances, the reason for arranging them into the three groups. This is somewhat supported by reported hybridiza-

tions such as in Group 1, *I. japonica* has been hybridized with *I. confusa* and *I. wattii* and, in Group 3, *I. gracilipes* with *I. lacustris* and *I. speculatrix*. However hybridizations outside the groups have also been reported such as between *I. wattii* and *I. tectorum* and between *I. tectorum* and *I. cristata*. Only the hybrid between *I. japonica* and *I. confusa* has been reported to be fertile. From this it could be concluded that these two are most closely related but this has not been confirmed by this investigation.

From both studies it appears that *I. wattii* and *I. confusa* have the most similarities, both as to chromosome numbers and types. They can be hybridized and the resulting plants are vigorous. [He suggests that *I. wattii* could be a subspecies of *I. confusa*]. The second pair of species showing the closest relationships, especially in crossability are *I. japonica* and *I. confusa*. Their hybrids have been partially fertile.

Though the $2n=54$ form of *I. japonica* appears to give fertile hybrids with *I. confusa*, the irregularities observed indicate it may be a triploid form as has been previously suggested. However it has also been noted that it could have resulted from a cross of *I. japonica* and *I. gracilipes*, but this does not seem likely based on this study of the chromosomes of the two species.

It does appear that the species in Group 1 form a natural group in which crosses can be made. *I. formosana* was received too late to be included in the crossing program. In Group 2 the two species appear to be more closely related to species in other groups than to each other. That is, *I. tectorum*'s chromosomes are more like those of *I. japonica* while *I. milesii*'s chromosomes more resemble those of Group 3. However, they both showed some success in pollination with *I. wattii*. There have been previous claims of hybridization between *I. wattii* and *I. tectorum* [see Jean Stevens' article on page 1368].

The failure to hybridize any of the species in Group 3 was surprising considering earlier studies made by Lenz (1959), although some pod stimulation did occur. No pod stimulation was noted in the cross of *I. lacustris* by *I. speculatrix* though such a cross was reported by Randolph (1959).

In studies of the bearded irises distinct evolutionary trends have been noted by Randolph and Mitra (1959) but no such trends in the Evansias appear to be supported by this study, and the relationships remain unclear.

[This was even more difficult than we anticipated and is no way a worthy explanation of Chimpamba's research. But we hope there is a bit of information here that can help some of our hybridizers, several of whom are trying to work with the Evansias, especially with the aim of producing hardier varieties that can withstand cold winters. ED]

SEED EXCHANGE

1986 SEED EXCHANGE—Preliminary Report: As all who have received it are aware, we have an extensive list for 1986 with some very fine selections. The response has been great. We have received as of this date (2-8-87) 175 orders totaling \$1775. Expenses to date have been \$586.06. However, we still have about one third of the orders to fill so there will be quite a bit more postage.

This is our last year as Seed Exchange Directors. It has been an interesting and enjoyable experience. We have appreciated the generosity of the donors and the many kind words of encouragement. We have learned a lot and have made new friends.

The Seed Exchange is a big responsibility and requires a great deal of time. A few have expressed concern over the late arrival of their seed. In spite of our best intentions, filling orders remains a slow process for us. A full report of the Seed Exchange will be in the next SIGMA. Merry and Dave Haveman

1987 SEED EXCHANGE: Many heartfelt thanks to Merry and Dave for a job well done. They have served as Seed Exchange Directors for the 1984, 85 and 86 seed crop, and have done a remarkable job of it. We are pleased to announce that we already have a new Director ready to receive your donations of 1987 seeds. A big welcome to Lee Nydegger, 88 West Broadway, Salem, New Jersey 08079. Donors: send your seed to Lee before November if possible--the earlier the better--to be included on the list.

ROBIN NOTES

Trevor Nottle, Crafers, So. Australia: "I have a good collection of Evansias, which grow outside in the open garden I. wattii, I. confusa (?), I. formosana, I. gracilipes, I. tectorum, I. milesii, I. japonica and I. speculatrix (from Hong Kong) plus some of the hybrids--my favourite is FAIRYLAND. I have a great interest in the spuria's and flowered I. sintenisii for the first time last year. I haven't been able to get much seed of these and find it isn't good at germinating (maybe too old when I get it). I have a few PCN species (lots of hybrid seedlings) among them I. munzii and I. hartwegii which were raised from seed sent by Lee Lenz many years ago. Siberians are mostly hybrid seedlings. I am slowly getting together some of the lovely laevigata and pseudacorus forms but like the virginica and chrysographes forms they are very hard to locate and very, very expensive--usually \$20 or more per plant. Dwarf bulbous Iris are also very hard to get, usually not available at all but every three or four years a form or two appear around \$5 per bulb (limit one per established customer). I haven't any bearded species but for I. pallida, variegata, and florentina."

EVANSIA EXCHANGE -- A Proposal A Proposal

In the few years that I have been growing hardy and tender Evansia Iris (Section Lophiris) species and hybrids, I have had two related problems that I imagine are shared by other growers of the "crested" irises.

First: I found it very difficult to obtain certain species, hybrids and cultivars. Some are simply not in commerce or they are offered infrequently by little known dealers.

Second: Once a good healthy stand of some (especially tender) variety was established, I had to find homes for extra plants--they were otherwise resigned to the compost pile, left out to freeze or given hastily to some unknown home and a possible dismal fate.

I know that there are others with similar experiences and I would like to offer my services to establish an informal Evansia Exchange. As such, I am quite willing to send free to anyone requesting them, certain uncommon plants when they are available and at the best time for me to move them provided I am sent enough to cover postage. In turn anyone wishing to obtain any uncommon Evansia (especially tender forms such as I. waddii, I. japonica, I. japonica variegata, I. confusa ("Chengdu," blue) etc.) simply drop me a note listing priorities and include a stamped self-addressed envelope. Anyone wishing to find homes for their excess Evansias and willing to mail them for the cost of postage, send me a list of likely available varieties and I will try to match you with a request in your area.

Finally I am also most willing to trade for any Evansia (I grow about thirty species and cultivars), hardy or tender, for my breeding program. This Evansia Exchange is not to include those plants which are regularly available from commercial sources such as typical I. cristata, I. hectorum, etc. but only those which cannot be obtained by "normal" methods or purchase. I am totally open to suggestions, additions, donations and any other form of help to get some uncommon plants into the gardens (and pots) of eager growers within SIGMA.

Please send lists of 'wants' and 'extras' to: JIMS', 5233 McGee, Kansas City, MO 64111, U.S.A.

James Waddick

(JIMS' deals in "Bamboo, Grasses, Etc.," an enterprise of Jim Waddick and Jim Murrain.)

ROBIN NOTES

Jean G. Witt, Seattle, Washington: "I too have some tender Evansias which I keep in the house in winter, including the little purple flowered unknown which a friend brought from China several years ago. This is nearest to I. confusa, but doesn't match anything now in cultivation. Material has gone to England for identification, but it may still be some time before I find out what it is. Meanwhile, it is definitely not going to be an outdoor plant for the Seattle area--I have to throw covers over it whenever the temperature drops much below freezing. Buds are coming up now, so I hope I can continue to protect it and have good bloom this spring. It has sprays of flowers like I. japonica, only purple and about 1 1/2" across, very pretty. It will be a good plant for the frost free climates, because it multiplies like mad."

EDITOR'S COMMENTS

Before someone calls me on it, I need to say I KNOW that the proper designation for the crested iris is *Lophiris*, not *Evansia*, but I cannot bring myself to use that ugly word when the old word, *Evansia*, does tribute to their beauty.

It was never my intent to devote an issue of SIGNA so exclusively to one type of iris, but here it is and we still missed out on *I. gracilipes* and *I. formosanum* almost entirely and *I. pseudorossi* is scarcely mentioned. After reading most of this issue several times over and struggling long hours with Chimpamba's Studies, I still want to know more about these most exotic irises.

I. japonica has been called by many the most beautiful of all irises, but I have had the variegated type for years with never a bloom. Why is it called sterile in one place and named as a parent of NADA and others elsewhere? DARJEELING is said to be a child of NADA self-pollinated--I have brushed pollen on a hundred flowers and never had a pod. "Authorities" say the white forms are less vigorous, but *I. cristata* alba and *I. tectorum* alba are far more vigorous for me than the blue or lavender.

When does NADA bloom in warmer climates? For me it is a midwinter flower--one stalk has finished and another is not yet ready to bloom. Lois Seeden would add to her article that her NADA has several stalks now and has bloomed in many seasons. Unknown to each other Larry Harder and Bob Pries both report that *I. tectorum* blooms at Christmastime. In the semi-tropics of Taiwan, it blooms in February. Most who succeed with *I. lacustris* say it is easy and reblooms in the fall but others say it's difficult. Does anyone in the U.S. grow *I. speculatrix* or *I. formosana* or *I. pseudorossii*? Why don't more iris specialists list *Evansias*?

Your #38 SIGNA may arrive early because we hope to save SIGNA about \$50 by beating the Canadian postage increase. We may have missed some more good contributions on *Evansias*. (We did.)

We hope to specialize in bulbous iris for the Fall issue and the Yearbooks and Bulletins are not so rich in material. Let us hear from a whole bunch of you who grow *Reticulatas*, *Scorpiris* (*Junos*), English, Dutch, and Spanish iris--or even moreeas and other southern hemisphere relatives. Keep notes--some of you must have *Reticulatas* in bloom by now--have you tried some of the named varieties? Which are your favorites and why?

AIS will be looking for good slides of American Species for the booklet they are contemplating--details in the fall. Others to look forward to are three articles from Jean Peyrard in France, some goodies from New Zealand including more about *Evansias*. And who knows what interesting items may arrive by September 1?

Joan C.