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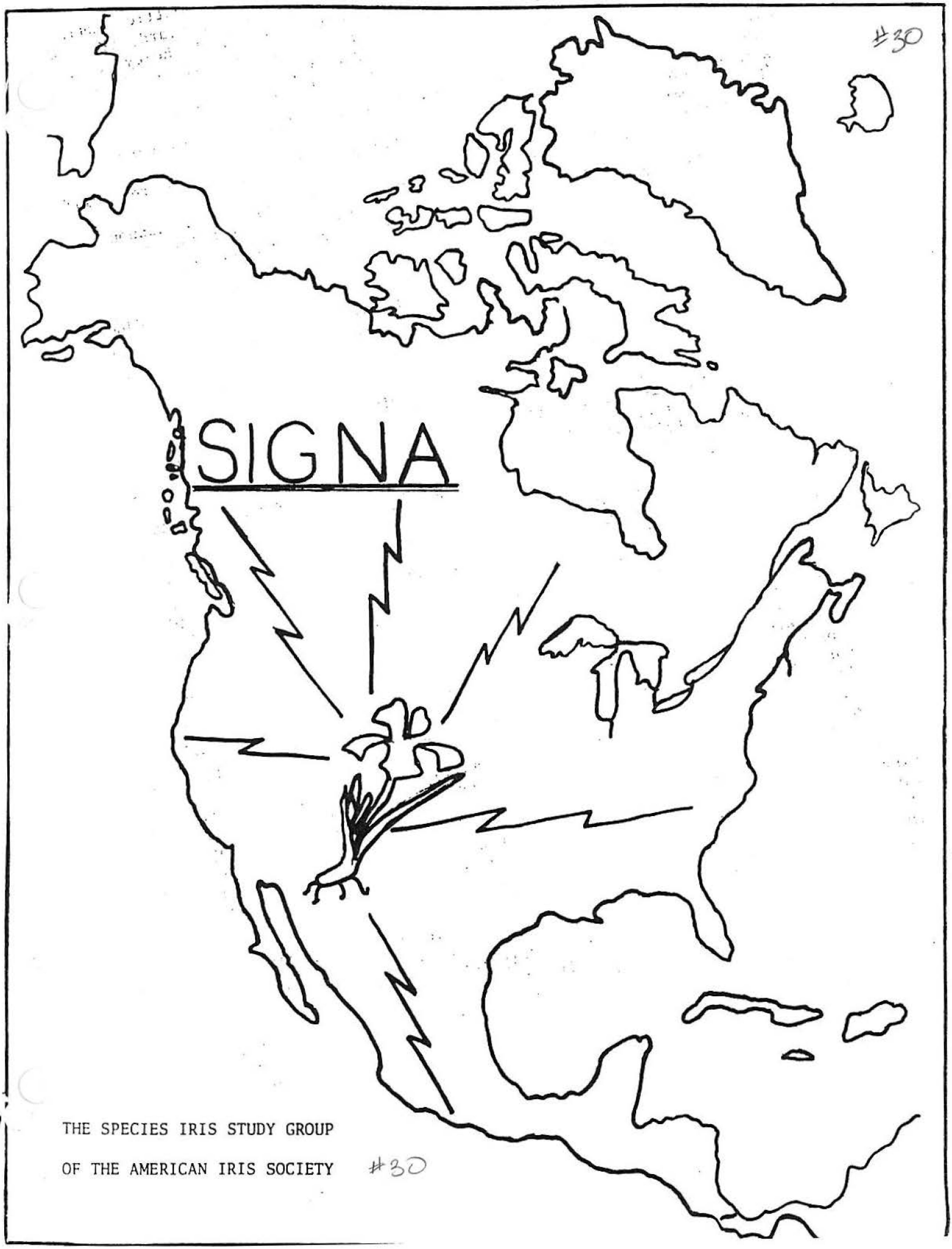

THE SPECIES IRIS STUDY GROUP

OF THE AMERICAN IRIS SOCIETY #30

THE SPECIES IRIS GROUP OF NORTH AMERICA

April, 1983, No. 30

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Chairman's Message

Jean Witt

This issue of SIGNA brings you some of the most unusual material that we have ever printed, and we hope you will find it of interest. The AIS Foundation gave us a small grant last year to have some translations made from Chinese publications, which recently became available. Only the paragraphs dealing with habitat, distribution, and uses were translated since descriptions of the species themselves are already available in the West. The habitat information should be an aid to the growing of some of these species. The information on distribution is probably more complete than anything previously available.

We also have had changes in SIGNA's board of directors. Grace Carter, our Secretary, is leaving us, and Florence Stout of Lombard, Illinois is taking over the secretarial duties. Our thanks to Grace for her years of service -- we are sorry to see her leave, but glad to welcome Florence to our team.

We also welcome our new treasurer, Gene Opton of Oakland, California. She has taken over from our outgoing treasurer, Francesca Thoolen as of the first of this year, as Francesca goes on to become AIS treasurer. Our thanks to Francesca for doing a fine job as our treasurer, and we wish her all success in her AIS position.

Mary Duvall reports that the 1982 seed list has brought the greatest response - ever. We are particulary pleased about this, since the seed exchange comes close to supporting one issue a year of Signa, and keeps us in good financial shape.

I would also like to take this opportunity to thank again the Beardless Iris Auction Committee of Minneapolis, Minnesota, for their efforts on our behalf. They held two auctions early last fall at the Minnesota Arboretum, the proceeds from which were sent to the various beardless sections of AIS. SIGNA received$161.00, for which we are most grateful. So next summer, if you are approached for donations, be generous, and remember that this sale not only helps with the distribution of species, but also helps sections with their ongoing printing and postage problems.

It will not be possible for me to attend the AIS Convention in Boston this year, but I hope that many of you will be going, and will attend our sectional meeting, bringing with you a few of you choicest species slides to share.

The winter has been mild here in western Washington, and we're getting anxious for the gardening season to begin. We hope the 1983 season will be a good one for all our gardens. Remember to make a few hand pollinated crosses for our seed exchange. Take time to jot down a few notes for our editor, on what did well in your garden. In particular, he'd like to hear from those of you in the "difficult" climates.

This issue has a good deal of material on Asiatic irises. Some topics on which we'd very much like to recruit material for future issues are the smaller Spurias, the reticulatas, and the bearded species. These last are a bit neglected, and yet -- among them may be a key species for the next big burst of development of garden hybrids!

Best wishes to all for great bloom and good seed set in 1983.

IRIS IN KOREA

Jean Witt, Seattle, Washington

Last September my husband led a group of professional and amateur horticulturalists from the Pacific Northwest on a three week tour of South Korea. Our purpose was to see as wide a range of plant materials as we could, both in cultivation and in the wild. To this end we visited private and public gardens, nurseries, and experimental stations, as well as several very scenic national parks. We found Korea a beautiful and fascinating place, with far more to see than we could possibly crowd in. We travelled primarily by bus. Accomodations were good. Korean food is tasty (and often hot). We found the people friendly and eager to show off both ancient and modern aspects of their country.

Horticulture has a long tradition in Korea. Many of the Bhuddist temple gardens date back for centuries, and they have managed to protect fine old stands of native trees. Extensive gardens surrounded several of the hotels where we stayed. Thriving vegetable gardens are everywhere, city and country. The people are fond of flowers as well, and nurseries selling flowers, shrubs, and trees line one boulevard in Seoul for more than a mile. Farming is very intensive, with rice the most important crop. Upland areas raise fruit, and we were just in time for delicious oriental pears, apples, and persimmons. Weather was clear and warm, as fall is the dry season -- spring and summer are wet.

In Seoul, at the outset of our travels, we acquired a copy of the newly published (1982) *Illustrated Flora of Korea* by Tchang Bok Lee. Fortunately, its excellent illustrations were labeled with Latin plant names, making the book very useful even if we couln't read the text. Eleven species of *Iris* are listed for Korea -- *I. rossii* Bak., *I. loreana* Nakai, and *I. savatieri* (syn.*I. minutoaurea* Makino) from Series *Chineses: I. uniflora* var. *carinata* Kitagawa and *I. ruthenica* Ker-Gawl. from Series *Ruthenicae; I. pseudacorus L.; I. pallasii* var. *chinensis* Fisch. (syn. *I. lactea* Pallas) from Series *Ensatae; I. setosa* Pallas., *I. laevigata* Fisch., *I. ensata* var. *spontanea* (Mak.) Nakai, and *I. nertschinskia* Lodd. (syn. *I. sanguinea* Hornem. ex Donn.) Note than in some instances these names do not agree with current Western usage; the reasons for the Korean preferences is not known at present.

Iris, even if not in flower, are fairly recognisable in leaf and pod, and as we were given permission to collect seeds in certain places, I was able to obtain a number of species for our seed exchange. *Ii. sanguinea, pseudacorus, lactea, and tectorum* we saw repeatedly in the temple gardens, and in other public and private gardens as well. The sanguineas were of more than one stem height, and with luck they may vary in flower colour as well; *I. pseudacorus* had more delicate stems than our usual forms. The most extensive iris planting we saw was of *I. tectorum* -- a long row under gnarled pine trees, in a built-up rock garden -- it must have been quite a sight in bloom. As we drove through the city of Yangyang on the northeast coast I spotted clumps of the harsh grayish leaves of *I. lactea* growing in a brick planter box in front of a bank. There were even a few bearded iris plants in a garden next to a Christian church on the island of Ullong-do --six hours by boat from east coast -- perhaps they came with the missionaries.

Iris rossii we saw in one private garden, running around on a rather dry hillside under pine trees. It did not appear to form Clumps under these conditions. This garden also had *I. tectorm, I lactea, I pseudacorus,* and the variegated-leaf form of *I. japonica,* as well as *Belamcanda chinensis,* the Blackberry Lily, which had self sown in some of the shrub beds and was almost a weed. We also saw the variegated *I. japonica* in a nursery, but never did see the type; neither is native to Korea.

The only species of Iris that we saw in the wild was *I. ensata* var. *spontanea.*

The first location was on Cheju-do, the large semi-tropical island off the south coast of Korea. The irises were growing in a swampy area where a lava flow in times past had disrupted the stream drainage on the slopes of Mt. Hala. Growing with the irises and in bloom were gentians, asters, and wild onions, looking much like our species from western North America.

We visited Mt. Odae, home of *Iris odaesanensis* (see article below), where the fall colour was at its height with maples and *Euonymus* (spindle tree) in fiery red and *Lindera* (spice bush) in lemon yellow. Regrettably we did not get up high enough to see the iris. This species is on the endangered list, so may be a long time reaching our gardens; it is in limited cultivation in Korea. The other small species are too grasslike to be recognisable out of flower. They are not yet common in cultivation, but perhaps in time we will be able to add them to our list of irises for rock gardens.

* * * *

In Korean Journal of Botany vol. 17, # 1, pp. 33-35 (1974) Dr. Yong No Lee of the Department of Biology, Ewha Woman's University, Korea, describes two new taxa of *Iris*

Iris odaesanensis Y. Lee belongs to Series *Chinenses*. It is allied to *I. koreana* Nakai, from which it differs in having two white flowers instead of yellow ones; the flowers are about 3.5cm. across and have a yellow signal. Rhizomes are long and slender; leaves are glaucous, 12 - 15 cm. long, and 3,5 cm. wide, with numerous ribs. It is named for Odaesan, or as we would say, Mt. Odae, where it grows on west facing lower slopes. (West slopes of the lower reaches of Odaesan are deciduous forests.)

I. rossii Baker f. *alba* Y. Lee differs from the type in having white flowers streaked with yellow into the center, instead of the usual violet. It was found at Chonmasan, Kyongiddo, Korea. It grow in deciduous forests of varying degrees of openess.

* * * *

Publications Available

The book, *Growing Irises*, by Cassidy and Linnegar, which was reviewed in Signa 29, can also be obtained from International Scholarly Book Services, Inc., P.O. Box 1632, Beaverton, Oregon 97075. Price is $16.95.

The 1981 Cumulative Checklist of Japanese Irises is available from Florence Stout, 150 No. Main, Lombard, Illinois 60148, for $4.00. This contains 70 pages of Japanese iris varieties and originators, through 1981.

Also obtainable from Mrs. Stout for $3.00 is The New Handbook for Iris Growers, 68 pages, with illustrations. This was put out by the Northern Illinois Iris Society, in 1982 and covers all the kinds of irises than can be grown easily in that area. As nearly a thirs of it is devoted to other - than - bearded it is an excellent inexpensive introductory guide for the beginning grower.

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Iris in Arts and Crafts

A book entitled *Art Nouveau Furniture* by Alistair Duncan, has numerous colour photographs of furniture with iris motifs. Some have carved iris flowers and leaves as part of the structural lines of the pieces. In others, iris are among the flowers used in inlaid wood panels.

IRIS FOR THE WATER GARDEN

Eberhard Schuster

Three years ago our family moved from Erfurt to Augustenhof, a very small village near Schwerin, which is a town in the northern part of East Germany. We had the aim to develop our own nursery to grow my favorite plants, water plants, bog plants, water lilies and some perennials. They are my favorites of many years. The most of them are hardy; some species only needing winter protection. *Anemopsis californica, Selliera radiere* and some others. I have the only nursery in East Germany specializing in water and bog plants and water lilies, and I'm a mill-supply nursery for a large dealer. I have finished writing a book about my favorite plants and it will be published next year.

I grow all my water plants in plastic pools. Our soil is sandy and dry, making the expensive pools and the work of building them necessary. I don't grow the plants in natural ponds, although many lakes, large and small, are around here. I have a collection of about 250 different plants for the water gardens, with many rare types among them*Caltha nantane* from Arctic North America, *Preslia cervina, Phragmites australis* 'Variegatus',*Hibiscus moscheutos* var. albiflora and some others. The iris have an important place in my collection. There are about 100 species and cultivars. I grow nearly all species which need moist or wet soil or prefer standing in shallow water throughout the year. The species are *I. chrysographes, I. clarkei, I. delavayi, I. laevigata, I. prismatica, I. pseudacorus, I. setosa, I sibirica, I. spuria, I. wilsonii* and some others. I'm growing *I. laeyigata,* the only 'true water iris', *I. pseudacorus* and *I. versicolor* as well as all the varieties and cultivars of these three, in shallow water all year. *I. taevigata* 'Variegata' is the most decorative water iris I have. Other cultivars I grow are 'Alba','Albo purpurea', 'Rose Queen' (a hybrid with *I. ensata*) and 'Snowdrift'.

I grow the following forms of our native*I. pseudacorus:* 'double' (flore pieno), 'E. Turnipseed', 'Golden Queen' (var. superba), 'Ilgengold' (a tetraploid form), 'Sulphur Queen' (car. bastardii and 'Variegata'.

I grow all the other species and their forms in moist or wet soil. I plan to start a modern collection of cultivars of I. *sibirica.* A lot of them are new, having been obtained last year. Among these are 'Ann Dasch', 'Bee', Butter & Sugar' (a yellow one), 'Cambridge', 'Peg Edwards', 'Pink Haze', 'Steve Varnier' and some others. 'Steve Varnier' won the AIS Morgan Award this year, 'Ann Dasch' was the '82 runner-up. A special section of my iris plantings are the Louisiana hybrids. I obtained them from the Louisiana Iris Society last year to test them under our German climatic conditions. I will be letting them know the results, but wonder how they will survive our winter weather. I have 'Ann Chowing', 'Double Talk', 'Ila Nunn', 'President Hedley', 'Professor Ike' and others.

There is one species of water iris that I don't grow in pools. This is *I. ensata* (formerly known as *I. kaempferi*), which I grow in a normal garden soil with additional water in the growing period.. I fertilize with a special fertilizer for plants which prefer an acid soil condition, and, as I found in an AIS bulletin, I have had very good results with foliar nutrition. The plants come on very strong.

Although the water garden iris are my favorites, I grow many other species in normal soil: *I. confusa, I. bucharica, I. demetrii, I. florentina, I. halophila, I. sogdiana* and others, *I. confusa* needs a cold house during the winter. The old plants are about 1m high.I am looking for more plants for my collection, especially cultivars of *I. laegigata, I pseudacorus, I siberica, I. ensata* and hybrids I am particularly looking for 'Golden Queen' (not the var. superba of *I. pseudacorus*) or 'Kimboshi. Is there an iris grower who can help me? ***

"Iris pseudorossii, redrawn from the Flora of Jiangsu (Kansu), 1971, vol #1, p394."

"Iris odaesanensis, redrawn from Korean Journal of Botany Vol 17, #1, p.34 (1974). Flower about twice life size; plant showing manner of growth, about half size."

GEOGRAPHIC AND ECONOMIC INFORMATION ON *IRIS*
from
ICONOGRAPHIA CORMOPHYTORUM SINICORUM, VOLUME 5

Fifteen species of *Iris* are described in this book, which is one of five volumes intended to give an illustrated and concise overview of the flora of China. Also entitled *Zhongguo Gaodeng Zhiwu Tujian*, the *Iconographia* was prepared under the leadership of the Beijing Botanical Research Institute of Academia Sinica with contributions from many other institutions, and was published in Beijing from 1972 to 1976 by Kexue Chubanshe, with plans for two supplemental volumes. Information in this work is necessarily abbreviated and represents perhaps a quarter of the plants which will be covered in the 80-volume *Flora of China*, now in various stages of preparation and publication in the People's Republic of China.

The species descriptions and key for *Iris* were not included in this translation, which is intended only to present ethnic and distributional information. Geographic references are first to provinces within China, followed by areas outside that country. Romanization of plant and place names is in the Pinyin system, with marks to indicate pronunciation tones.

Iris collettii Hook. f. xiǎo zōng bāo "little palm bundle"

Occurs in Yunnan; also Burma, Thailand. Grows on mountain slopes at 1600-3500 meters in dense grass or rock crevices. The fibrous roots as well as the withered leaf sheaths are of medicinal value, but are toxic and must be used cautiously.

Iris tectorum Maxim. yuānwěi "iris" lán húdié "blue butterfly"

Distributed in Yunnan, Sichuan, Shaanxi, Hubei, Zhejiang, Jiangsu; also Burma, Japan. Grows at 800-1800 meters in shrub forest margins. Long cultivated in gardens.

Iris japonica Thunb. húdié huā "butterfly flower"
Distributed in nearly every province and region throughout China; also Japan. Prefers to grow in damp shady places, often forming clumps in forest margins.

Iris germanica L. déguó yuānwěi "German iris"

Originally from Europe; fine varieties have been introduced and cultivated in gardens in various areas of China.

Iris grijsii Maxim. huá yuānwěi "splendid iris" or "Chinese Iris"

Distributed in Fujian, Jiangxi, Zhejiang, Anhui, Hubei, Hunan, Guizhou, Shaanxi. Grows in damp roadsides, mountain valleys, rock crevices, or forests.

Iris ventricosa Pall. náng huā yuānwěi "pocket-flowered iris"

Distributed in northeastern China, Nei Monggol; also the Soviet Union and Mongolia. Common in hot dry hilly country, grassy marshlands, or mountain-slope meadows.

Iris tigridia Bunge cū gēn yuānwěi "coarse-rooted iris"

Distributed in northeastern China, Nei Monggol, Shanxi, Hebei, Gansu, Qinghai; also the Soviet Union and Mongolia. Grows on mountain slopes and grasslands or in sandy places.

Iris potaninii Maxim. juǎn qiào yuānwěi "curly-sheathed iris"

Distributed in Nei Monggol, Gansu, Qinghai, Sichuan, Xizang; also the Soviet Union and Mongolia. Grows at about 3800-4800 meters on mountain-slope meadows.

Iris goniocarpa Baker ruì guǒ yuānwěi "sharp-fruited iris"

Distributed in Shaanxi, Gansu, Sichuan, Xizang; also Sikkim and India. Grows at 2400-3500 meters in alpine meadows and grasslands.

Iris chrysographes Dykes jīn wén yuānwěi "gold-veined iris"

Distributed in Sichuan, Yunnan. Grows at 1200-4400 meters in mountain-slope meadows or forest margins.

Iris kaempferi Sieb. huā chāngpú "flowering reed"
yù chán huā "jade cicada flower"

Distributed in northeastern China, Nei Monggol; also Korea, Soviet Union, Japan. Grows in grassy marshland or swampy places. The stem leaves provide raw material for papermaking; the oil of the seeds can be used to make soap.

Iris dichotoma Pall. bái shègān "white blackberry lily"
(shègān: Belamcanda chinensis (L.) DC)

Distributed in northeastern China, Hebei, Shandong, Shanxi, Shaanxi, Gansu; also the Soviet Union. Grows on mountain slopes, hills, and grasslands. The rhizomes are used in the manufacture of soil pesticides.

Iris tenuifolia Pall. xì yè yuānwěi "slender-leaved iris"

Distributed in northeastern China, Hebei, Nei Monggol, Shaanxi, Shanxi, Gansu, Xinjiang; also the Soviet Union and Mongolia. Grows on sand dunes, gravel, mountain slopes or grasslands.

Iris ensata Thunb. mǎlìn "horse rush" mǎlián "horse lotus"

Distributed in northeastern, northern, northwestern, and eastern China and in Xizang; also Korea and the Soviet Union. Grows at ditch margins in grasslands and meadows. The leaves can be used in papermaking, brushes can be made from the roots, and the seeds have medicinal properties.

Iris ruthenica Ker.-Gawl. xì jīng yuānwěi "thin-stemmed iris"

Distributed in northeastern China, Shanxi, Hebei, Xinjiang, Sichuan, Yunnan, Xizang; also Korea and the Soviet Union. Grows at 1800-2800 meters on mountain meadow slopes, in sparse woods, or beneath pine forests.

IRIS OF JIANGSU PROVINCE, CHINA

The following excerpts are translated from Jiangsu Zhiwu Zhi (Flora of Jiangsu), Volume 1, edited by the Jiangsu Provincial Botanic Research Institute and published in 1977 by Jiangsu Renmin Dabanshe, People's Republic of China. A general introductory paragraph, local key to the species, and species descriptions have been intentionally omitted here, except for a complete translation of the information on Iris cathayensis Migo. The first geographical references are to areas (usually towns) within Jiangsu Province, followed by names of other provinces in which the plant occurs. Romanization of plant and place names is in Pinyin, the system now in general use in the People's Republic of China. A modern Pinyin map of the PRC has been published by the National Geographic Society in Washington, D. C., and Pinyin atlases are available from several Asian book dealers in the U. S.

1. Iris dichotoma Pall. bái shègān "white blackberry lily"
(shègān: Belamcanda chinensis (L.) DC)

yě yuānwěi "wild iris" (Beijing Diqu Zhiwu Zhi, Flora of the Beijing region)

yáng jiǎo cǎo "sheep's horn grass" (Tongshan)

Flowering period July-August, fruiting period August-September. Occurs in areas such as Xuzhou, Tongshan, Ganyu, and Pei Xian on uncultivated mountain slopes; also distributed in Heilongjiang, Jilin, Liaoning, Nei Monggol, Shandong, Hebei, Shanxi, Anhui, Hubei, and areas in other provinces. The rhizomes can be used to make soil pesticides.

2. Iris tectorum Maxim. yuānwěi "iris"

Flowering period April-May, fruiting period May-June. Indigenous to central China, growing in dry sunny places; grows wild in one zone from the Tai Hu area to Changshu; also occurs in Zhejiang, Jiangzi, Hubei, Hunan, Guangdong, Guangxi, Shaanxi, Sichuan, Guizhou, Yunnan, Xizang, and other areas. Cultivated in China as an ornamental plant with large and beautiful flowers; the rhizome contains iris flavone glycoside; medicinal uses include stimulation of blood circulation, relief of rheumatic pain, detoxification, and treatment of indigestion; because the plant is sensitive to hydrogen fluoride, it has possible use in monitoring fluoride pollution of the atmosphere. Propagated from seed or by plant division.

3. Iris japonica Thunb. húdié huā "butterfly flower"

Flowering period June-July. Occurs in the areas of Jiangpu, Nanjing, Jurong, Yixing, Liyang, Wuxi, forming clumps in forest margins or open damp places; also distributed in other provinces such as Anhui, Zhejiang, Jiangxi, Fujian, Hubei, Hunan, Guangdong, Guangxi, Shaanzi, Sichuan, Yunnan, Guizhou. Of broad medicinal use as an antipyretic, antidote, analgesic, and to reduce swelling; the root is used as a laxative.

4. Iris germanica L. déguó yuānwěi "German iris"

Flowers in April. Originally from Europe; cultivated throughout China from north to south as an ornamental plant, particularly valued for the great variety of

flowers in such colors as white, yellow, deep purple and bright purple. The rhizomes provide raw material for the extraction of high grade aromatic oil; iris extract in oil is an effective fragrance stabilizer, often used to fix perfume in fine soaps.

5. Iris pseudorossii Chien xiǎo yuānwěi "little iris"

Flowering period April-May. Common throughout southern Jiangsu, growing wild in dry sunny areas, beneath forests, and in roadside grass clumps; also distributed in Anhui, Zhejiang, Hubei.

6. Iris ruthenica Ker.-Gawl. var. nana Maxim.

zǐ bāo yuānwěi "purple-bracted iris"

zǐ shí pú "purple rock rush" (Zhiwu Mingcheng, Plant names)

Blooms in May. Found around Lianyungang, growing on mountain-slope meadows; distributed in other provinces including Heilongjiang, Liaoning, Jilin, Shanxi, Hebei, Shandong, Xinjiang, Sichuan, Yunnan, Xizang.

7. Iris lactea Pall. var. chinensis (Fisch.) Koidz. (I. pallasii var. chinensis Fisch.)

mǎlìn "horse rush"

hànpú "dry rush" (Lianyungang, Sheyang, Jingjiang, Dafeng)

Flowering period April-May, fruiting period May-June. Found in such areas as Lianyungang, Funing, Sheyang, Rudong, Huai'an, Qingjiang, Dongtai, Jurong, and Zhenjiang, growing wild in the mountains, on sandy grasslands or roadsides; distributed in other provinces including Heilongjiang, Jilin, Liaoning, Nei Monggol, Shanxi, Hebei, Shandong, Anhui Zhejiang, Jiangxi, Fujian, Henan, Hubei, Shaanxi, Gansu, Qinghai, Xinjiang. Medicinally, the roots are used as an antipyretic and antidote; the flowers are used as an antipyretic, a diuretic, and to reduce swelling; the seeds are used to stop bleeding, detoxify, and relieve the discomforts of heat and humidity. Oil can also be extracted from the seeds to make soap.

8. Iris cathayensis Migo Huáxià yuānwěi "Cathay iris"

Similar to the "horse rush" [in this publication, Iris lactea Pall. var. chinensis (Fisch.) Koidz.] , but in this plant the leaf blade is comparatively thin and soft, and the old leaves and leaf sheaths are not split or only partially split into fibrous material. The flowering stem is concealed when the flowers open, flowers are 1-2, usually 2; pedicels about 2 cm. long; outer perianth segments hairy within, perianth tube filiform, 5-9 cm long; ovary relatively very small, 1-1.5 cm long. Blooms in April. Found around Zhenjiang and Jurong, growing on mountain slopes; also distributed in Anhui, Hubei.

ED: Material for the two preceding articles was translated from the Chinese by Judy Young, Seattle, Washington, October 28th, 1982.

Funding for the translation of this material from Chinese flors was provided by a grant from the American Iris Society Foundation.

NEW AND OLD NAMES FOR SOME PROVINCES IN THE PEOPLE'S REPUBLIC OF CHINA

Pinyin names with previous spellings in parenthesis

Anhui (Anhwei), Fujian (Fukien), Gansu (Kansu), Guangdong (Kwangtung), Guangxi (Kwangsi), Guizhou (Kweichow), Hebei (Hopei, Hopeh), Heilongjiang (Heilunkiang), Hubei (Hupei, Hupeh), Hunan (Hunan), Jiangsu (Kiangsu), Jiangxi (Kiangsi), Jilin (Kirin), Liaoning (Liaoning), Nei Monggol (Inner Mongolia), Qinghai (Tsinghai, Chinghai), Shaanxi (Shensi), Shandong (Shantung), Shanxi (Shansi), Sichuan (Szechwan, Szechuan), Xinjiang (Sinkiang), Xizang (Tibet, Thibet), Yunnan (Yünnan), Zhejiang (Chekiang).

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The Larger Crested Irises

Assembled by Jean Witt from extensive notes compiled by Roy Davidson

Evansia has a nice ring to it as a divisonal name, and I rather hate to see it displaced by *Lophiris;* but whatever their name, this group of plants with their frilly crests or rooster combs in lieu of beards contains some of the most attractive and numerous-flowered plants in *Iris*. Though a number or them have been in cultivation in the U.S. and Europe for many years, only *Iris tectorum* is at all common in North American gardens. Except for hardy *I. milesii*, the remaining species need the warmth of southern climates and are thus suited largely for California and the south eastern states. They can also be grown successfully in colder climates by wintering them in sun porches, cool greenhouses, in cold frames and under cloches and are well worth the effort! Because the crested irises thrive where heat and humidity are a problem for bearded irises, and because of an increase of late years in the number of forms available, we are offering a detailed recap of this interesting group.

I. tectorum (Maxim. 1871 Chromosomes : 2n=28. This Chinese species has been cultivated in China for so many centuries that its native name -- yuanwei -- translates simply as "iris". Its large lavender-blue flowers with their gold flecked rooster combs and mottled falls rise on branched 12 - 15 inch stems, several to a stem. Leaves resembling those of bearded iris are stongly ribbed, but seem to lack slub-defense chemicals in their makeup -- with me, a problem for this entire group. This species is also cultivated in Korea and in Japan, where it is known as the "roof iris" because it is sometimes grown on the thatched roofs of houses. I have in my files a photo of "roof irises" taken in the 1950's; the custom may well be dying out as thatched roofs are replaced with fireproof materials. Variations of *I. tectorum* are as follows:

A white flowered form with a yellow crest, somewhat shorter than the type, with about three flowers on a foot high stem, a most attractive plant, going as ALBA.

A form with variegated foliage (and presumably the usual purple flowers), from Japan. In my garden the white stripes outpaced the green ones, and the plant committed suicied. (Would more fertilizer and a sunnier location have prevented this?)

Several inter-series hybrids have been recorded, but PAL-TEC (Denis 1928) a cross with the diploid bearded EDINA seems to be the only named variety of this sort around at present. Several others have been reported in the past, an indication that such hybrids are by no means prohibitively difficult.

LOP-TEC (Dykes about 1910) was the earliest of these. A hybrid between *I. oengialtii* LOPPIO and *I. tectorum*, it is illustrated in colour in plate XXIV

in Dykes THE GENUS IRIS. Both plant and flower are intermediate in form between the two parental species. LUCILLA (K. Dykes 1930) a dwarf sky blue from *I. tectorum* x Dwarf Bearded had already been supplanted by an imposter by the time the 1939 checklist was published. ARIEL-TEC (Lenz, AIS Bull.) is a third example. OLIVER TWIST (Washington 1933), registered as being a light blue hybrid between *I. tectorum* and *I. cristata* is currently represented by a plant that appears to be simply *I. tectorum*. This cross could well be tried again, with some of the more diverse colour forms available today.

Of the additional forms of *I. tectorum* that have made their appearance in recent years, the most attractive from a garden standpoint is the clone found in a garden at Sun Moon Lake on Taiwan, and sent by Jack Craig to Roy Davidson. This plant is larger and taller of stem than the usual *I. tectorum*, and the larger flowers are a rich medium blue-violet. I kept it in a cold frame at first, not knowing how tender it would be; it has now been out through two-admittedly mild -- winters without damage. It does seem to like the extra warmth of a west-facing wall. Joan Cooper a few years later brought home an *I. tectorum* from the same area. At this point we don't yet know whether the two are the same or different.

Dr. Egli, in Switeerland, crossed seedlings of the Sun Moon Lake plant (*I. tectorum* Taiwan form) with the usual short white-flowered one, and in the second generation obtained fine white-flowered plants with up to seven blooms on a much taller stem. (See SIGNA 29, p 1005-6 for his detailed report.)

Tetrploid tectorums have been produced with colchicine on at least three occasions, those obtained by San Norris being the most recent. Gerald Darby flowered the first one in England in 1953. Max Steiger, in the BIS Yearbook for 1962 reported on his tetraploid tectorums, illustrated opposite page 144. In his best plants both flowers and plants were essentially twice the size of the diploid counterparts, and had great vigor. The stems of his # T15 had two branches with three flowers each, plus four in the terminal for a total of ten. None of these tetraploid varieties is available commercially in the U.S. at present, but at least one is now making its way along the distributional "grapevine".

I. japonica (Thunb. 1794) (*fimbriata* and *chinensis* are synonyms). This species was introduced into Britain from China 1794 by Thomas Evans, who is commemorated in the name *Evansia*, originally a generic epithet subsequently submerged in *Iris*. It is also grown in Korea, and has gone wild in Japan in many places, thought to have been brought in from China in ancient times. Great numbers of small frilly flowers with fimbriate style arms and the sort of petal edges we might today call "laced" are borne on tall branching stems. For me the flower colour has varied from season to season, from lavender-tinted to almost white, with purple and orange markings. The shining evergreen foliage tends to take a beating over winter in Seattle (slugs again), but the plant is relatively hardy. Sidney Mitchell quotes Walter Marx (AIS bull.) as saying he grew it successfully and that it survived 5 - 10 F. in western Oregon. The plant spreads laterally by stringy stolons, and can soon cover a considerable area. It has also traveled widely with plant-lovers. It grows especially well in New Zealand and there are garden reports of it from India and Egypt. Mrs. Fisk reported in the 1951 BIS Yearbook that she envied the way it had gone wild near Genoa in Italy, thriving in the extra warmth. She saw it as a cut flower in the market with flower stalks to four feet.

Chromosome counts of *I. japonica* vary from around 35 to 54. All plants from Japan are reported to be triploid, and therefore sterile. Jean Stevens said it seeded only rarely for her, and the seed did not germinate the first year after sowing.

Stillman Berry's catalogs ca. 1927-1934, in California offered four forms: Japonica A. Fleeting light blue flowers with delicate mottling, the spikes

flowering over a long season; likes partial shade. (This form is still grown in California by people who had it directly or indirectly from Berry.)

Japonica B. Paler than the preceding.
UWODU (his spelling). A less floriferous, but very beautiful and possibly hardier form from Japan.

Ledger's variety. Ledger said to be the hardiest one, it is very close to the preceding. This lavender tinted, violdet dotted plant was collected in the garden of the British legation in Tokoyo, received by Walter E. Ledger in England in 1912. Reported to be a better grower but Brian Mathew feels it is not much different.

There is also a so-called "Capri form", said to match the Curtis' Botanical Magazine plate of *I. chinensis* introduced in 1796.

Dr. J.R. Ellis, in England, in the course of his work with crested irises combined Ledger's variety with the Capri form to produce the seedling that he named BOURNE GRACEFUL (Ellis 1975). It reaches a height of 42 inches, and has very pale mauve flowers about 2½" across with darker mauve spots around the yellow crest. It also has the distinction of having the highest chromosome count in the group, 61. This plant can be seen in a black/white photograph as the frontispeice to the 1975 BIS Yearbook.

World or Irises lists three forms of *I. japonica* with variegated leaves; APHRODITE was offered by an Italian firm as early as 1907. Another was listed by Wada in Japan in the late 1930's as "japonica variegata". A plant under that name and another under the name KAMAYAMA appear at shows in England. The form I have (whichever it is) has never bloomed. This is not necessarily typical since Brian Mathew shows a variegated plant in fine bloom in colour plate #13 in *The Iris*.

In spite of its problem of self-sterility, *Iris japonica* has contributed a number of hybrids to our gardens.

JAPO-WATT (E.A. Bowles 1931?) is forever burdened with a misleading name, since the second parent was actually *I. confusa* (mistaken for *I. wattii* when first introduced from China). Stems are said to be extraordinarily well branched, with up to a hundred or more flowers.

NADA (Giridlian 1939), parentage originally given as *I. japonica x I. wattii*, is actually from *I. japonica x I confusa*. This has white flowers with an orange crest.

DARJEELING (Giridlian 1944) came from NADA x self. It is said to have better colouring than its parent, and also more stem; for me the stem has a good deal of purple colouration. Flowers white.

FAIRYLAND (J.C. Stevens 1936) UWODU x *I. confusa*. Checklist says pale blue; (I thought this one too, was white-flowered?)

I. formosana Owhi 1934 was collected on Taiwan. Its white flowers, flushed with blue, are said to be larger than those of *I. japonica*, to 2½ inches across. The infloresence runs up to three feet and the plant is stoloniferous like *I. japonica*, but unlike most of that species it produces a short length of cane, up to about 6-8 inches. Chromosome counts reported are at odds, but there is no verification that they were all made on authentic material. It sets seed in the wild as a good species should, and the obvious affinity with *I. japonica* is not yeat understood. It is tender to frost (I can vouch for that as I lost it to winter, even sheltered by rhododendrons.) The plant we have was sent to Broussard in France by Mr. Chow Cheng and it is to be seen in the 1970 BIS yearbook.

I. wattii Baker 1892. This is by all odds the most spectacular of the Crested

species, and at the same time one of the most puzzling. At this writing a large pot of it is squatting on a stand in front of my south-facing glass doors like a great green octopus. The strongly ribbed leaves are more than two-inches wide and up to 2½feet long. Wintering in the house seems to interfere with its blooming, though I have had it bloom well after wintering in the cold frame. It is quite tender--flower buds are damaged at 28F. The large fans of leaves start out at ground level, but their stalk lengthens up to three feet before bloom time, and the inflorescence emerges from the fan of leaves at the top to extend another three feet, its branches bearing up to 40 lavender-blue dark spotted flowers, trimmed in white and yellow.

Watt's original collection described by Baker, was taken in 1882/in Manipur, summit of Konghui hill, alt. 6,000 ft. Until only recently all the material in cultivation came from a collection made by Major Lawrence Johnston (sic) in 1931 near the Chinese-Burmese border. This was illustrated in Curtis' Botanical Magazine, Tab. 9590 (1939-1940) so large it needed a fold-out page! It was given the RHS Award of Merit 1938, shown by Aberconway. (The early material, known to Dykes, was subsequently corrected to *I. confusa.)*

The Ellis and Chimbamta cytological studies seem to indicate that the Johnston plant is a hybrid (it does seem to be self-sterile). Recently another collection from China has made its way to Britain. BOURNE NOBLE (Ellis 1979) pale mauve with purple and yellow spots around the crest came from mating this new entity and the Johnston clone. Dr. Ellis has also raised seedlings from *I. wattii x I. confusa.*

The first reports of seedlings from the Johnston *I. wattii* came from Jean Stevens. The open pollenated seedlings which she grew resembled *I. tectorum* sufficiently to suspect that it was the pollen parent. One of these seedlings was subsequently registered as QUEEN'S GRACE(Stevens 1955).. This plant is 36" tall, its flowers described as habing clear lavender-blue standards and falls the same, flecked deeper at the haft with a multi-ridged crest of cream-white, flecked brown. Jean Stevens also reported (about 1959-60 in the Evansia Robin) that a friend had grown plants from bee seed of *I. wattii,* which bloomed with flowers the deeper colour of *I. tectorum.*

Elwood Molseed raised seedlings from crosses between *I. japonica x I wattii, I. wattii x I. confusa, and I. confusa x I. wattii.* This "wattii", was (at least in part_ raised at the University of California at Berkeley from seed obtained by Les Hannibal from Jean Stevens, so it seems likely it too was hybrid. None of these plants is extant at present, but the crosses serve to indicate the range of possibilities.

I. confusa (Sealy 1937)Chromosomes 2n=30, gained its present name belatedly. Native to China, this plant came into cultivation through W.R. Dykes who raised it from seed obtained by Pere Ducloux in Yunnan. It first flowered in England in 1914, and as it appeared to match the herbarium specimens of *I. wattii,* it was introduced under that name. Not until the Johnston *I. wattii* appeared on the scene some twenty years later was the error discovered. Meanwhile, the plant had made its way to the United States, and hybrids had been raised in England and in the U.S. Berry's 1927 catalog describes it as *(I. wattii)*... "with habit somewhat resembling dwarf bamboo: flowers white or lightly tinted, borne in airy panicles over a long season..hardiness unknown", Sealy's name commemorates the confusion, and except for the ongoing inaccuracy of JAPO-WATT's name the problem was laid to rest with greater success than has attended some of the other taxonomic problems in *Iris. Iris confusa* is considerably hardier than the lovely *I. wattii,* as are its hybrids, which do reasonably well outdoors in the Seattle area. As of February 1st, NADA's bloom stalks are (rather indiscreetly) already out of its leaves.

Only one of Molseeds hybrids seems to have survived his death. An account of

his work can be found in AIS Bulletin 241, April 1978, pp. 28 - 29, along with a drawing of the seedling since named in his honor which has been accorded an English award. It is described as "a rather half-sized version of the others, with slender leafage on a short cane, and slowers half the size of most...it lacked the stoloniferous habit of *I. japonica* entirely, with the increase as small offsets near the base of the cane." Parentage is FAIRYLAND x *I. confusa.*

At the moment, bloom is eagerly awaited on a plant brought from China by Capt. and Mrs. Arthur Gardiner of Seattle, in the fall of 1980. They found it growing alongside the road at about 3500 feet near the western edge of Sichuan Province. It bears fans of drooping leaves at the top of short canes -- the leaves are shining on the upper surface and dull-finished below; the largest ones are an inch wide and about ten inches long. In two years there has been no sign of tolons; old stems sprout near the base, and there are at present nearly a dozen major stalks in the 10' inch pot, plus many more tiny fans in the center. A photo of the plants in the wild shows a large colony of the handsome leaf-fans descending a bank covered with other herbs and grasses.

I. milesii (M. Foster 1883). Chromosomes: 2n=26. This species is named for Frank Miles who raised it from seeds collected in the Kulu district, north of Simla, in India.Seeming somewhat removed from all the preceding species, it grows from fat, bright green rhizomes, the obvious ground-level counterparts of the upright canes of *I. wattii. and I. confusa.* The deciduous foliage is wide and ribbed, disproportionally strapping for the size of the flowers. Flowering stems rise to about 2½-3 feet and are branched, with a number of dainty mottled pinkish-purple flowers about 2½ inches in diameter. This species is native to the Himalayas, and has a wide distribution from Kulu in the Punjab, to Assam in the east. In Kulu it grows in sunny deodar forests on hillsides at some 6000 feet in an area of moderate monsoon rainfall. KingdonWard described it as growing "in a meadow backwater where bracken stood waist high." Those he was had "dingy" flowers, but I have no such complaint about the ones I am growing. The flowers are said to have little colour variation. The plant seems to be reliably hardy in Seattle. It blooms in early June, a little after the main TB bloom, and likes the extra heat of a south or west exposure, needs plenty of slugbait. It seems to seed freely. The only hybrid of record (from *I. japonica x I. milesii)* was reported in Gardener's Chronicle in 1928. A failed cross with *I. tectorum* has also been reported; it would seem worthwhile to try this one again.

Somewhere among our members who live in suitable climates we hope new breeders will be attracted to the challenge of this fascinating group. The opportunities for raising additional hybrids have never been better.

Beyond protection for the tender types, culture of crested irises presents no particular difficulties. Since they come fomr regions with damp summers, plants should not be allowed to dry out. It has been suggested that *Ii. tectorum and milesii* welcome a little lime, and that all species need a soil rich in humus, with regular application of all purpose fertilizer to make them bloom well.

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BLUER THAN BLUEBIRDS: A BIS show report some years ago was punctuated with the startling note that "A murder most foul was committed....when the lovely blue 'Edith Rorke' was killed dead by a Meconopsis", with the observation "We have a long way to go toward blue in irises as compared to gentians or the blue popies." And these many years later it is almost as true, catalogue copywriters notwithstanding.***

R.D.

NOTES ON IRIS KAEMPFERI

Alan Fisk

My first attempts to grow *I. Kaempferi* were a complete failure. In spite of the fact that my garden soil is a retentive clay, the plants dried out too much during the summer, and additions of peat at planting time failed to improve matters.

At that time I was interested in growing aquatics by a method described by Niklitschek as "Cultivation with invisible water surface," which consisted simply of sinking a watertight container, such as a barrel, in the flower bed, so that its upper rim was just below ground level. When this was filled with suitable compost, a miniature bogbed resulted, which remained waterlogged even during a drought.

This method seemed to offer possibilities for *I. Kaempferi* in the summer, though it also seemed likely that the plants would perish in the winter, as all authorities insist on drained, if not dry, winter conditions. However, after a few tests had been made, it seemed very clear that not only did the irises flourish during the summer but they also survived a cold winter under these conditions and flowered freely the following year. Since then it has been found impossible to kill the plants by any combination of frost and flooding, and seedlings raised in a tin bath have been frozen to a block of ice without injury.

I. Kaempferi therefore appears to be just as true an aquatic as is *I. laevigata.* There has been some satisfaction in establishing this, although we should have known it all along, for *I. Kaempferi* ROSE QUEEN has been planted in pools for a long time under the belief that it was a form of *I. laevigata,* and has taken no harm. If it were more generally known that *I. Kaempferi* not only tolerates, but thrives under, bog or aquatic conditions, it would probably be a more popular plant. There are, of course, fortunate gardens in which it will flourish in the border, but, I think, more in which it will not.

When it comes to choice of variety, opinion differs. I confess to preferring the mop-headed giant double forms which are almost universally despised, and often described as monstrosities. Flower lovers, I notice, provided they are not iris enthusiasts, admire them greatly. Unlike most highly developed flowers, which seem to lose health and vitality through selective breeding, at least some of the double Kaempferi are as vigorous and free-flowering as the single kinds. But if you definitely must have single irises, ROSE QUEEN, which sets seed freely, and countless other named and unnamed kinds possess all the beauty of wild species.

Growing *I. Kaempferi* from seed is an interesting occupation, and considerably more profitable than raising the tall bearded varieties, as most of the resulting seedingls will prove attractive enough to keep. Seed, planted in early winter in boxes or pans of peaty compost and exposed to all weathers, will germinate freely the following spring. By transplanting into a boggy site as soon as the seedlings are large enough to handle, a few of the seedlings will flower the following year.

Shortage of space and lack of time usually condemn mine to spend their first year in the seed box, and in the following spring they are moved out into their permanent quarters. They then produce their first flowers the third year after sowing. From commercial seed, the greater proportion of the seedlings will prove to be single, but the coloration and markings vary in a remarkable way. Doubles do occur, however, and all are interesting.

Providing it is given the necessary moist conditions *I. Kaempferi* is a remarkably healthy plant, and the only disease I have encountered is a type of "rust," which turns the foliage reddish-brown and stunts the growth. Although similar in its effects to "scorch" in bearded irises, it does not, as a rule, prove fatal. This

complaint is common to a number of water-loving irises, and there seems to be no way of preventing it.

Although satisfactory results can be obtained with any heavy garden soil, there is no doubt that good feeding is beneficial, and rotted vegetable matter, or anything from the compost heap, will be acceptable. Lime is to be regarded as undesirable, but bone meal, strangely enough, seems to give good results, as do small amounts of artificial fertilizer. Commercial liquid manures used at the recommended strength are extremely satisfactory, and I would regard them as of the greatest assistance where only poor soil is available.

MISCELLANEOUS

Jean Witt

From "John and William Bartram's America", Helen Gere Cruickshank, editor
The Natural History Library Edition, 1961, Anchor Books, Doubleday & Company Inc. Garden City, N.Y.

pp 7576 letter from John Bartram to Peter Collinson, in England June 24th, 1760 "The seed thee sent last fall was choice good and most of them come up. The ranunculus and anemone root grows finely and several bore fine flowers. The flags-iris/grow well and two of the bulbous is ready to flower."

John Bartram to Peter Collinson, August 26th, 1766, p 82
"I am glad the Pittsburgh iris pleaseth thee. I like it. So doth the sweet Carolina sort. Perhaps I may send thee a slip of it next fall..."

p 301 He visited the Indian villiage of Attassee on the Tallapoosa River where he found the people ..."taking medicine... to avert a grievous calamity of sickness which had lately afflicted them and laid in the grave abundance of their citizens. They fast seven or eight days, during which time they eat or drink nothing but meager gruel made of a little corn flour and water; taking at the same time by way of medicine or physic a strong decoction of the roots of the Iris versicolor, which is a powerful cathartic. They hold this root in high estimation; every town cultivates a little plantation of it, having a large artificial pond, just without the town, planted and almost overgrown with it, where they usually dig clay for pottery and mortar and plaster for their buildings, and I observed where they had lately been digging up this root."

p. 316. "The vegetables which I discovered to be used as remedies where generally powerful cathartics. Of this class are several species of the Iris, viz., Ir. versicolor, Ir. verna."

Salmagundi--A Little of This and That

Iris reticulata is a most valuable early garden plant over a great part of Britain (and elsewhere) in spite of the very different natural environment which it has in Asia, where it shares the habitat with the Oncocyclus irises, sometimes growing cheek by jowl with them. Yet those are notoriously unsatisfactory in cultivation. Thus experience with a closely allied species (ecologically speaking) is not a safe guide to the behaviour of an untried species or relative -- an obvious conclusion if the wide variation of vigour and constitution possible within the limits of a single species is borne in mind. (Sampson Clay in bull. Alpine Garden Society (Eng.) V30, p.5.

CULTIVATION OF IRIS KAEMPFERI AND LAEVIGATA

Dr. Shuichi Hirao

Iris kaempferi is a good subject for every garden. It starts blooming in succession to tall bearded irises and lasts for nearly two months. It has hundreds of varieties which vary in size, colour, and blooming season. The earliest ones will bloom while later varieties of tall beardeds, Louisianas and *Iris laevigata* are still in their beauty. The later varieties of *I. kaempferi*, which are more magnificent than the earlier ones, will bloom with early to mid-season daylilies. Some of the recent varieties show signs of a reblooming habit and bloom again occasionally in late summer or early autumn. In Hokkaido where the summer is cooler than Honshu (the main island of Japan) some varieties are reported to bloom frequently as late as October, until the early frost kills the last bloom.

In contrast to the large variation of *Iris kaempferi*, *Iris laevigata* has only about a dozen varieties, but it is a lovely and elegant iris. *I. laevigata* may not be good in a border garden, it is happiest always in water or by the waterside. It blooms soon after the Siberian iris, and one or two varieties of it are reliable rebloomers.

The widespread misunderstanding that *Iris kaempferi* have to be planted by the waterside, might have come partly from the confusion of *I. kaempferi and I. laevigata*, and also from the common practice in Japan, that public gardens of *I. kaempferi* are flooded in the blooming season, not for the better growth of the plant but for the better scenic view. At other seasons a visitor will find the same gardens are no longer flooded and the plants are happier. In their natural habitat, *I. kaempferi* is found on a sunny hillside with grass and shrubs, and not in swamps. *I. laevigata* is found in a marsh and never in a dry place.

Iris kaempferi is also a wonderful plant for pots, either large or small. The root system does not spread as much as many other perennials, which is an advantage for admiring the *kaempferi* in a small pot. A plant in a seven-inch pot may produce more than five bloomstalks and is a gorgeous show. A normal bloom is seen in a three to four inch pot, which may be a good way to send the blooming pots to market. *Iris laevigata* blooms well in pots. The cultivation is similar to *kaempferi*, but the pot must always be kept in water.

It is often said that *I. kaempferi* is difficult to establish and takes nearly two years for a good performance. This is, however, not true. Possibly their failure might have come from the plants having been divided and replanted in spring, which is an unhappy season for *kaempferi* to be moved. *I. kaempferi* seems to form new roots about twice a year, soon after the bloom and in early autumn, both of which are good times to replant, but at no other season. The fibrous root system which spreads through the earth before the frost kills the foliage in autumn, is the most important factor for the magnificent performance next summer. If the root system is damaged by dividing the clump in spring, the plant finds difficulty in surviving till the early summer, when young new roots take the place of the old. This habit seems to be a problem, especially in the case of export, as the soil has to be completely removed from the roots, which will cause a considerable disturbance to the root system; nevertheless the shipment has to be done, to reduce transportation costs, in the winter season when the plant is dormant. However, the problem will easily be settled by preparing the plant in sphagnum moss or sawdust compost a few months prior to the shipment. The compost does not have to be removed on the export and import inspection, and the plant will bloom normally some months after arrival.

I. kaempferi prefers acid soil. As the soil in Japan is more or less acid all over and this iris grow easily in most gardens, Japanese gardeners pay little attention to the acidity of the soil, and I regret to be unable to give accurate data

on what the pH would be the best for *kaempferi*. However, lime resistance seems to differ, depending on vavieties; some turn yellow on the same soil where other suffer nothing. In my experience, *I. kaempferi* is more lime resistant than Primula and Calceolaria. I have a large collection of *Primula sieboldii* which often turns yel low in the same soil where *kaempferi* are never influenced. In a garden in the States where the soil reaction was almost neutral, some of the varieties I sent a few years ago were seen almost normal, while the others were badly yellowed.

I. laevigata seems much more lime resistant than *I. kaempferi*. This is curious, as its natural habitat is swamps where one often finds a very high acidity.

Heavy soil seems better for both irises than light, loamy soil. Sandy soil, if good moisture is available, makes excellent growth for the first few years but it does not last long. *I. kaempferi*, in a garden, is better replanted in new soil every two to three years. However, there are many places in Japan where the iris has been left unmoved for forty years or more without any trouble as to growth. On the other hand, there also are many places where they are practically unable to grow, after some years of luxuriant growth, possibly due to the lack of some minor elements in the soil.

Recently, sawdust was found to be a good compost in which to pot *kaempferi*, especially to establish a poor fan, in summer or autumn. Any sort of wood, it seems, will do, if it is boiled with water for a while, to remove the water-soluble compounds which may be injurious to the young roots. As the boiled sawdust will contain no nourishment, one has to feed the plant frequently, after establishment.

On a new plantation of *I. kaempferi*, any sort of manure should be strictly avoided. In fact, impatient feeding is a main cause of failure for beginners. Especially in the case of summer planting any sort of manure in the soil prevents a new fan from rooting rapidly. One should wait for three weeks, when the new roots are ready to accept the feed. Once established, *I. kaempferi* is a good feeder and responds well.

In both cases of garden and pot, planting is done either soon after the bloom or in early to mid autumn when the foliage is still green. The clump is divided into single fans with the aid of scissors, or by hand, into blocks with two or three fans on each. The leaves are cut back to about the half of their original height in the same way one does with tall bearded iris. The fan is planted a little deeper than in the case of tall bearded iris, namely about half an inch deeper than the joint of foliage and rhizome. The surface of the soil is pressed well by the hands, to avoid being shaken by wind. It is desirable to water regularly, especially in the case of summer planting, till the plant roots perfectly. Mulching is very good to encourage establishment. In a garden a well established plant stands a lasting dry spell. In California, I found some *I. kaempferi* which I had sent a few years ago, planted side by side with tall beardeds, receiving water only twice a month in a hot summer season. The *kaempferi* would certainly be happier if watered more abundantly, but anyhow the plants were healthy, with deep green foliage and some dead stalks which had bloomed a few months ago. I had an experience of digging up a *kaempferi* clump from my garden, forgetting to plant it in a new place, and leaving it in the weeds. In autumn, when the weeds, which had been hiding the clump through the hot summer, died down, I was surprised to find the plant was still living.

I. kaempferi also survies in water. Japanese gardeners often keep the divided fans in a bucket of water when they have no time to plant them in the soil. I also have left a fan in water from July to April, through the winter, and the fan continued to live in the water without any soil. Next spring the poor rhizome sprouted again in the water.

Pot culture of *I. kaempferi* is easy and trouble saving. In summer when the bloom is over, the plant is dug out of the ground or put out of the old pot, and is divided into single fans. The fans are planted in small pots with new and rather poor soil; three- to four- inch pots are handy. A large pot with too much soil will retard the rooting, as is commonly seen with many pot plants. The pots are kept in a shallow pool which saves the trouble of watering greatly. The depth of water should be shallow, about half an inch may be most desirable. After three weeks one will note the centr leaf of the fan which had been rather feeble-looking, getting more vigorous, which is the sign that the fan has established and is ready to accept fertilizer. On frequent feeding with any sort of garden fertilizer, the fan will grow rapidly and will make an enormous plant in five to six weeks. Whenever the pot seems too small for the plant, it should be transferred to a larger one. If one wants to bloom several plants in a large pot, now is the chance to plant. After the repotting to a larger pot, in early to mid autumn, it seems better not to keep the pot in water but to water regularly on the surface of the soil, which encourages better growth of the roots. However, a bushy gardener often keeps his potted *kaempferi* in water throughout the year except in winter. In spite of its sensitiveness to fertilizer when newly planted in summer, *kaempferi* stands heavy frost and ice, but the pot should be protected by a mulch from being broken by the ice.

In spring when the plant starts into growth, frequent feeding is very desirable. However, the feeding should be stopped about one month prior to the bloom. Excess of fertilizer will cause petal-rot.

Higo varieties of *Iris kaempferi* have been improved for pot culture. They are not too tall and the flowers are most magnificent and are superior for pot culture to other strains. Many Higo flowers expand so enormously on the second day of the bloom that one will hardly recognise them. In many cases the process of the expansion is very interesting and even mysterious; the fascinated fanciers call this habit of the flower, "play" or "act". The "act" of a flower is naturally seen better indoors than in the open, where wind and sunshine will prevent the minute changes of the flower from bein observed. Usually the beauty of the *kaempferi* flower reaches its climax towards the midnight of the second day, which will give great pleasure and revelation to the hobby gardener who is occupied in miscellaneous work in the daytime.

Reprinted from the BIS Yearbook 1964

New Species of Iris Described from Turkey

Jean Witt

In The Garden Journal of the Royal Horticultural Society, Vol 107 part 11, November 1982, pp 445-448, Brian Mathew, taxonomist at the Herbarium, Royal Botanic Gardens, Kew England, and Turhan Baytop of the Faculty of Pharmacy, Istanbul University have described two new species of *Iris* from Turkey. Both are illustrated in colour, p 447. One is *Iris xanthospuria*, the plant of Series *Spuria* which has been going by the name of "Turkey Yellow". Though this plant has been in cultivation for 35 years, and has been used in Spuria breeding in California and elsewhere, it is only recently that additional collections have provided enough information to warrant its formal naming. The second plant is a bearded iris and is named *I. purpureobractea*, for its very conspicuous inflated purple spathes. It is said to resemble *I. junonia*. Flowers may be either pale pearly blue, or a rather dull yellow.

I have seen plants of *I. purpureobractea*, and can vouch for the aptness of the name. Although the authors state that it is one of the taller species (as perhaps opposed to the dwarf ones) the plant I saw was of Miniature Taller Bearded stature, with excellent branching and neat foliage. Flowers are said to be fragrant.

A submerged new species of Cypella (Iridaceae), and a new section for the genus (s.str.)

Pierfelice Ravenna

Ravenna, P. 1981. A submerged new species of *Cypella* (Iridaceae), and a new section for the genus (s.str.) – Nord. J. Bot. 1: 489–492. Copenhagen. ISSN 0107-055X.

Cypella aquatilis is described as a new species of the Iridaceae, occurring in the Brazilian states of Rio Grande do Sul, Santa Catarina and Paraná. The plant is remarkable by being submersed in streamlets and rivers, and by the vegetative proliferation in the inflorescence. Additionally, a new section, *Nais*, with *C. aquatilis* as the type species, and the new name *C. exilis* Ravenna to replace the illegitimate *C. gracilis* (Kl.) Bak. are proposed.

P. Ravenna, Casilla 21128, Sucursal 21, Santiago, Chile.

Introduction

In a brief treatment (Ravenna 1977b), the necessity of revalidating among others the genera *Phalocallis* Herb. and *Hesperoxiphion* Bak., until then included in *Cypella* Herb., was shown. The early concepts of Herbert (1840) and Baker (1877) were therefore recognized. Later, while describing the new *Hesperoxiphion huilense* Rav. from Colombia, I provided a key to the five species of *Hesperoxiphion* (Ravenna 1979). A new genus (Ravenna in prep.), based on *Cypella craterantha* Rav., will further clarify the generic concepts in these seemingly allied entities.

Studies in living material from all the known species of *Cypella* s. str. revealed the existence of definite subgroups, which could be morphologically defined as sections. One is described below.

Sectio Nais Ravenna sect. nov.

A sect. *Cypella* perigonio late urceolato et laminis tepalorum interiorum unguiculis minoribus haud canaliculatis sed latiuscule depressis recedit.

Species typica: *C. aquatilis* Rav.

The name alludes to Naïs, the nymph of the rivers and water springs. Other species included: *C. crenata* (Vell.) Rav. and *C. pusilla* (Link, Klotzsch et Otto) Benth. et Hook.f.

Cypella aquatilis Ravenna sp. nov.

Orig. coll.: Ravenna 1037 (Herb. Ravenna holotype, RB isotype). – Fig. 1.

A caeteris *Cypellae* speciebus habitu submerso inflorescentia tantum ex aquam surgens, foliis late plicatis subobtusis, laminis tepalorum exteriorum unguiculis brevioribus differt.

Plant up to 30–50 cm high. Bulb ovoid, 17–22 mm long, 15–24 mm wide, covered by few, dark brown, dry tunics. Basal leaves 2–3 at anthesis, 15–30 cm long, 11–25 mm broad, bright green, broadly plicate, flaccid, often obtuse. Stem cylindrical, foliose; lower leaf similar in size to the basal ones, long-sheating, 15–30 cm long, the rest gradually reduced to bracts, and each one bearing a plantlet after anthesis. Spathes several, herbaceous, bivalved, 2-flowered; lower valve 18–21 mm long; the upper one 25–31 mm long, with membranous

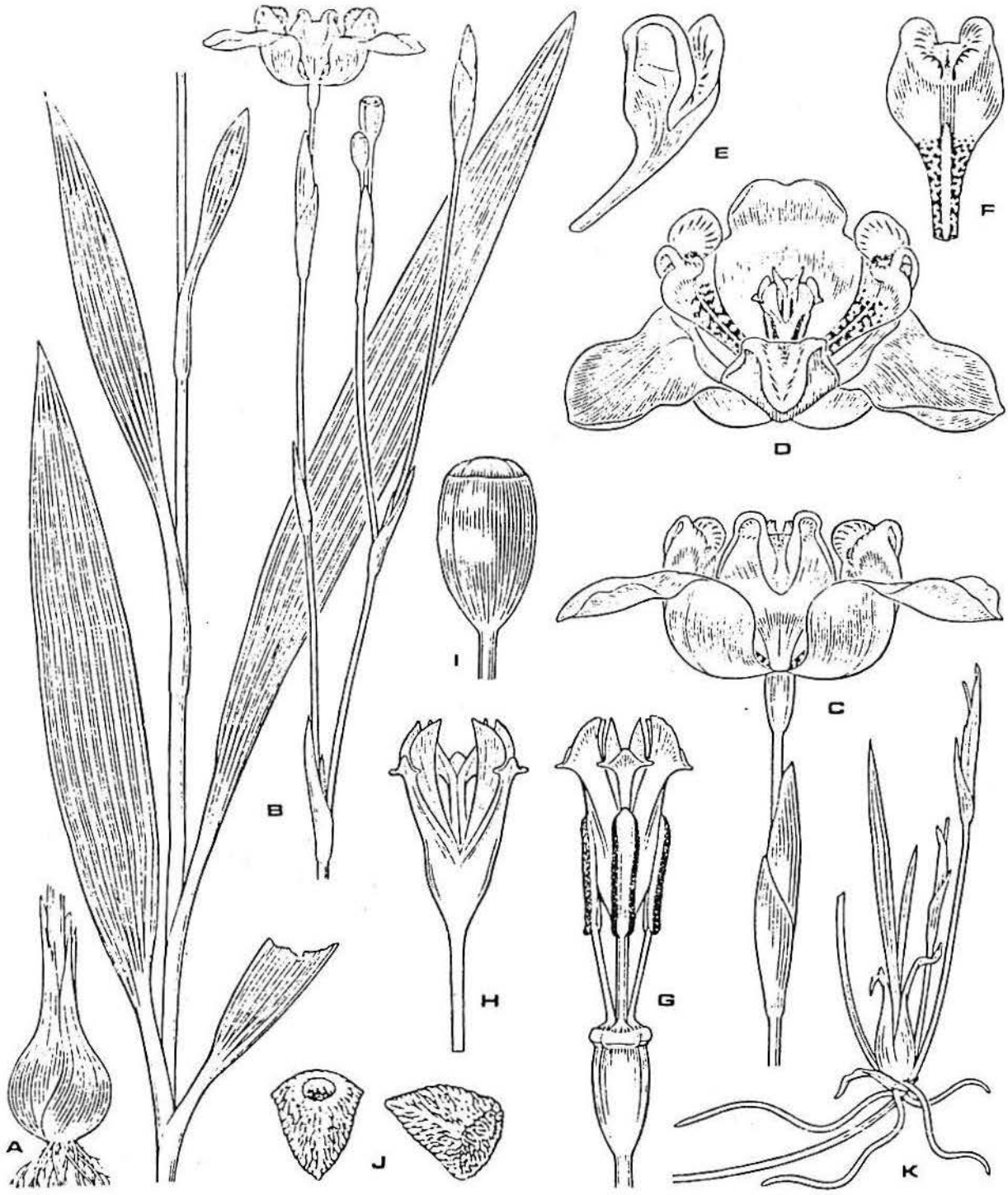

Fig. 1. *Cypella aquatilis*. A. Bulb (ca. × 0.7). – B. Flowering plant (ca. × 0.5). – C. Side view of spathe and flower, about natural size. – D. Upper-oblique view of flower, about natural size. – E. Inner tepal, side-abaxial view (ca. × 2). – F. Inner tepal, adaxial view (ca. × 2). – G. Flower with tepals removed showing androecium and gynoecium (ca. × 3). – H. Style and style arms (ca. × 3). – I. Capsule (ca. × 2). – J. Seeds (ca. × 6). – K. Vegetative proliferation in the inflorescence (ca. × 0.5). S. Magno del.

edges. Pedicels filiform, 26–34 mm long. Flower erect, bright yellow. Ovary obovate-clavate, 3–3.9 mm long, 2–2.5 mm wide. Perigone markedly urceolate, 35–50 mm wide. Outer tepals pandurate, 30–40 mm long, 17–22 mm broad, concave for 17 mm, with diminutive dark red streaks and points. Inner tepals geniculate-recurved, 18–22 mm long, 11–14 mm broad; the claws with glandular hairs, marked by a central yellowish white streak and many diminutive streaks and spots; the blade markedly depressed at the middle and reflexed; the depressed area covered by dense, oblong, diminutive glands (elaiophores) and bordered by purple black, oblique streaks; the apex yellow, acute. Filaments free, almost filiform, yellowish, to 3 mm long, slightly enlarged below. Anthers linear-oblong, 5.3–7 mm long, often abortive, if so, narrowly linear; pollen almost black or sometimes yellow. Style 5.5–6.7 mm long. Style arms suberect, the inner face yellow, the outer face angular, whitish, concrescent for 2 mm, then 5.2 mm long; crests three, the abaxial small, often almost square and emarginate, 0.5–0.6 mm long; adaxial ones wing-shaped, to 2 mm long. Capsule obovate-clavate, pale green excepting the dark green opercles, 13–16.5 mm long, 7–9.5 mm wide, shortly trivalved when dehiscent. Seeds angled, brown, 2.8–3.2 mm long, the micropyle often distinct. Chromosomes: $2n = 14$.

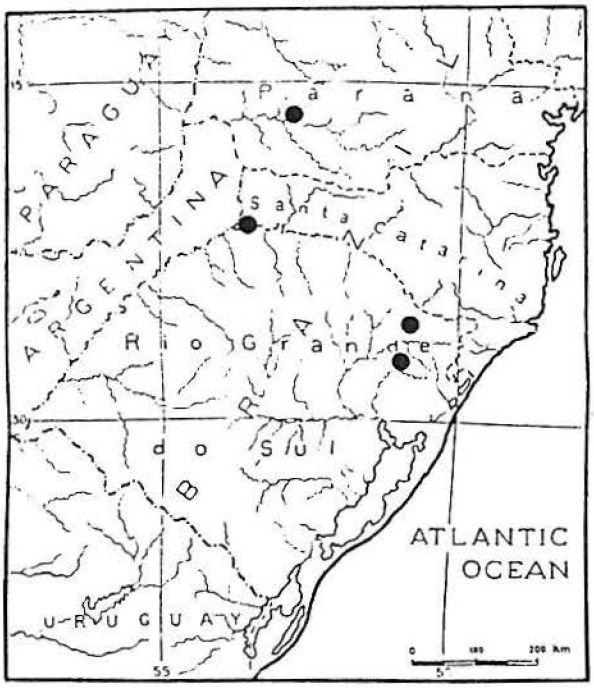

Fig. 2. Collecting sites of *Cypella aquatilis*.

Habitat. The species inhabits certain streamlets, small rivers, and flooded river-banks, in the Brazilian states of Rio Grande do Sul, Santa Catarina, and Paraná. In the former State, the plant is found in the sandy bottom of clear water-courses. Along the banks, and close to the water, several Cyperaceae, Gramineae, Juncaceae, and the stout *Phalocallis coelestis* (Irid.) occur. In the nearby fields, its congeneric *C. exilis* (see below) is found scattered.

Life cycle. The plant is an evergreen, renewing its leaves preferably in spring. Inflorescences arise in late spring, producing a great number of flowers through the summer. About 70% of the stamens are abortive. After anthesis is over, a plantlet is produced at the axil of each leaf or bract. When the stem tumbles and rots under water, the new plants are carried by the current to root in a new place. Reproduction by seed seems to occur as well.

Collections. Brasilia, Río Grande do Sul, Vila Oliva pr. Caxias, in rivo ad rupes fluitans, sterilis; leg. Rambo 30918, 2. Jan 1946 (PACA). Faz. da Ronda per. Vacaria; leg. Rambo 34747, 3. Jan 1947 (PACA). Santa Catarina, mun. Itapiranga, river banks by Rio Uruguay, 3–4 km west of Itapiranga, ca. 27°10'S, 53°44'W, alt. 200–250 m; leg. L. B. Smith and R. M. Klein 13156, 11 Nov 1964 (HBR). Paraná, mun. São Jorge do Oeste, Rio Iguaçú, Salto Osório; leg. Hatschbach 20533, 7. Dec 1968 (Herb. Hatschbach, Herb. Ravenna). Culta in Bonaria ex bulbis in rivulo ad Faz. da Ronda pr. Vacaria civit. Rio Grande do Sul Brasiliae collectis; leg. Ravenna 1037, January 1970 (Herb. Ravenna, RB).

Two specimens of the new species, from Vila Oliva and Fazenda da Ronda, Rio Grande do Sul, respectively, were discovered in 1964 in Rambo's herbarium, at São Leopóldo. The material from Santa Catarina and Paraná, was received a few years later. In 1965, a first attempt to find the plant at Vila Oliva failed; but searches at the second location the subsequent year were successful. Bulbs were introduced in the author's experimental collection, then at Buenos Aires, Argentina. It is quite possible that in the future the species could also be found in the latter country.

Discussion of characters. Cypella aquatilis is related to *C. crenata* (Vell.) Rav., a rare species from the bogs of south-eastern Minas Gerais, Brazil. The species are similar in the widely urceolate perigone, and the morphology of the inner tepals. The latter, however, is a slender plant with extremely narrow leaves. *C. herbertii* (Lindl.) Herb., another species that prefers damp places, differs from the present by the narrow, acute leaves, and the shape of the outer and inner tepals.

This is the only species proliferating by plantlets born on the inflorescence, and the only in the family with a submerged habit. In America, a number of *Trimezia* species, especially those previously included in *Neomarica* (see Ravenna 1977), produce plantlets on the flower stalk. Another amazing case is found in the

ill-named *Tigridia bracteolata* (Kl.) Macbr., where every leaf and bract axil produces a brachyblast with several diminutive bulblets. The spike of the African *Watsonia bilbilifera* L. Bolus, produces a great number of cormlets.

Horticultural uses. The plant is highly indicated for aquaria. It also can be cultivated in partially immersed pots, and placed in a light situation of the greenhouse; it will not thrive well outdoors in any climate. The better mixture to be used is white river-sand, with the addition of 1/5 or 1/4 of vegetable mould.

Cypella exilis Ravenna nom. nov.

Polia gracilis Klatt, Linnaea 31: 545, 1862. – *Cypella gracilis* (Klatt) Baker, J. Linn. Soc. Bot. 16: 129, 1877, nom. illeg.

Acknowledgements – The author is indebted to Mr Salvador Magno, of Buenos Aires, Argentina, for the beautiful illustration of the species; Dr Alovsio Schnem, for the facilities in the consultation of herbarium material, at the Escola de Filosofia of Sao Leopoldo, R.G.S., Brazil; the staff of the Herbarium "Barbosa Rodrigues", for lending the material of Santa Catarina; Mr Gert Hatschbach, Curitiba, for sending the specimen from Paraná.

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Reprinted from the NORDIC JOURNAL OF BOTANY, Vol. 1, 1981.

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COMPARATIVE REPRODUCTIVE BIOLOGY OF HERMAPHRODITIC AND MALE-STERILE IRIS DOUGLASIANA Herb. (IRIDACEAE)*

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(ABSTRACT):

A comparative study of the reproductive biology of male-sterile and hermaphroditic plants in a gynodioecious population of Iris douglasiana Herb. (Iridaceae) was conducted at the University of California's Marine Laboratory at Bodega Bay, California, between 1976-1979. Each year of the study, there were 11.1% male-sterile plants in the population, some of which began blooming at the same time as the earliest blooming hermaphrodites. Male-sterile flowers made up between 7-21% of the flowers produced during the male-sterile flowering period.

Male-sterile flowers had smaller sepals and petals than hermaphrodites, there were fewer of them per square meter, and they had fewer pollinated stigmas than did hermaphroditic flowers. In a test to determine pollinator preference, intact hermaphroditic flowers tended to have more pollinated stigmas than did hermaphrodites with their stamens removed or those flowers with shortened sepals made to resemble the smaller male-sterile flowers. Floral phenology and nectar-flow patterns were similar in both types of flowers as were the kinds of amino acids and sugar rewards in the nectar. Male-sterile flowers, however, produced much less nectar per flower. There were no significant differences in the number of ovules per flower or the number of seeds produced per capsule between the two flower types, but the loss of seeds through larval predation was much greater in capsules from hermaphroditic flowers. Early flowering and setting of seed by plants with male-sterile flowers could give them a reproductive advantage over plants with hermaphroditic flowers which experience higher levels of larval predation later in the growing season.

*Reprinted from American Journal of Botany 69(5): 818-823, 1982.

The Minnesota Beardless Iris Auction Committee (MBIAC)

The Minnesota Beardless Iris Auction Committee has as its goal the promotion of beardless iris. They also raise money from the sales and auction of beardless iris to help the beardless iris sectionals with their publications. The sale and auction is held the second Sunday of September at the University of Minnesota Landscape Arboretum.

In offering beardless iris for sale the committee hopes to educate and encourage local iris society members and gardeners in general to use and appreciate beardless iris in their gardens and their landscape. In the process they also hope to evaluate the performance of various cultivars in Minnesota.

The Committee is not affiliated with any iris society or any specific iris section. It is composed of permanent chairpersons and a treasurer. Each chairperson tries to obtain iris rhizomes for the auction and sale, tries to get as much publicity as possible for the sale and notifies each specific sectional of their activities. 100% of the income is given to the sectionals for their activities on the national level.

The MBIAC would like to encourage growers, hybridizers, and commercial gardens to donate iris rhozomes of the various types to the committee for sale. Rhizomes should be sent to the specific chairperson between August 15th and September 1st.

The MBIAC encourages the formation of similar committees in other parts of the country to promote beardless irises and to help the beardless iris sectionals in the publication of their bulletins and newsletters.

The chairpersons for the Minnesota Beardless Iris Auction Committee are:

SPECIES IRIS - Mary Duvall, Rt.1 Box 142 - Dassel, MN. 55325 (612) 275-2905

JAPANESE IRISES - Dr. Donald Koza, 1171 E. Idaho Ave. St. Paul, MN 55106 (612) 771-8705

SPURIA IRISES - Joan Cooper, 212 West County Road C St. Paul, MN. 55113 (612) 484-7678

LOUISIANA IRISES - Dr. Jeff Jeffries 227 Homedale Road, Hopkins, MN. 55343 (612) 935-5792

SIBERIAN IRISES - Julius Wadekamper 10078 154th Ave. Elk River, MN. 55330 (612) 427-2802

The treasurer for the committee is: Mr. Stan Rudser
2548 Douglas Drive N.
Minneapolis, MN. 55422

More Water Irises at Rosedown

Having enumerater a number of the varied Fleurs-de-Lis (SIGNA p.996) perhaps it would be worthwhile to tell of some of the many forms of other water-loving species as well as other lesser known irises. We are "high on hope" that they will all be in full regalia for 1984.

We call the garden "Rosedown" not for its roses nor for any better reason that the prior small town garden was called "Rosedale" --the legal description for that particular real estatement development to the city back in 1904. Rosedown was commenced about 30 years ago, first as a weekend retreat on a tract that had been originally a coniferous forest, and there are huge old stumps of *Thuja plicata* and Douglas Fir that attest to a former majesty. The land lies flung across the narrow waist of the valley, broader both above and below, and it has undergone a period of agricultural use and came therefore with all the consequent weeds. Two small streams converged in the midst of the meadow and here an enterprising beaver family had set up industry, so that the upper meadow is deep with an accumulation of black humus. We found a sound cedar log buried seven feet, an indication of where a prior streambed lay. The flat meadowland is subject to winter flooding so that the water problem was the reverse of what the gardener usually deals with, too wet, yet the stream is available too for summer irrigation water.

The solution to that led to an altered streamcourse with sloped embarkments and a divided and braided flow resulting in a number of ponds and by-passes, and consequent water gardens on several levels, some that are marshy pond margins wet the year round, others drier in winter when water is let out of ponds.

When you have ponds you have ducks, and ducks dibble; the margins of ponds and streams are subject to this continual disturbance that ultimately makes marshland of it all, so that measures were necessary to minimize this sort of erosion. Irises are among the many plants established to help maintain the banks, along with Petasites, Darmera (which we must now call our Peltophyllum) with bold paraod leaves burnished like bronze whields in autumn, a small variegated Acorus (from Woolworth so long ago when little plants were selling at 19¢) along with the indigenous lady ferns, carex, and whatever. Back from this such bold-leaved things as Hostas and Bergenias are massed under such tropical-looking trees as Magnolia, a golden catalpa and ferny Oregon ash and dawn redwood. All of this is of considerable compliment to the blades of iris clumps, which could be rather deadly dull otherwise.

The soil is slow to warm on this east slope even though it is the glacial till of all of Puget Sound trench, underlain with a pan of Pleistocene blue clay which has mixed blessings if brought to the surface. The bones of a mammaoth have been found not too far distant and only a few miles south are coal beds. The rainfall averages about 38 inches annually, most of it in the cold season when it is least appreciated, and most runs off. The terrain allows cold to settle in this valley, and here it is held like a bowl of ice cream.

In such a cold garden we do not succeed well with the irises of the Mediterranean climates, but the boreal species are well pleased and flower generously.

The wetland or hydrophytic irises, other than the *I. pseudacorus* already mentioned, included the Apogon groups of Laevigatae, Hexagonae and Setosae. Of the last group, there are two species, the scarcely known *I. tridentata* of the Carolina wetlands, and *I. setosa* from North America and Eastern Asia. There are many representatives pf this species grown at Rosedown -- Alaska Blue and the eastern var. *canadensis*, plus, a white and two very fine dark violet-blue ones, Kirigamini and Nasuensis, the Emperor's iris, all from Japan. Some large groups of these help hold pond embankments, among the contrasting yellow *pseaudacorus*.

Marshes also have bold groups of several forms of *I. laevigata*, in various rich blue and violet shades as well as in white and some patterned. There are also those with variegated leaves, quite different in effect from like forms of other iris species. Here too is the magenta-pink "Regal", a real colour-break in this species which arose in British horticulture. There are several cultivars of the sumptuous Hana-shobu or Japanese irises, though they are ordinarily much later to flower and will not likely be showing for the garden tour. The most of this species in the wild in continental eastern Asia and Japan is a reddish purple, and several of those are here. We are told that a small colony of blue-purple near Nagoya and a lone white one from north of Nagoya formed the basis of the plants which along with the reddish one have given rise to the fabulous garden plants of such splendor. There is a stripe-leaved form here too, slender and less than spectacular, and the delicate little "Rose Queen", a gem.

The American Laevigatae include the Larger Blue Flags, *II. versicolour and virginica*, and there are clumps of many colours in the north pond and elsewhere in marshy as well as just moist situations where they succeed equally. There are several forms that would seem to be the vigorous *I. X robusta* of hybrid derivation between the two. We feel that the violet-based large plant so striking in spring and going as the English "Gerald Darby" belongs here, as also the striking big red "Oliver Pease" probably. There are also many collected forms and some garden forms not given registered names as yet, some from Gus Sindt, some from Joan Cooper, others from Mary Duvall, Sarah Tiffney, including what surely is the white *murrayana*, and such old classics as *Kermesina*, "Claret Cup" and "Rosea", all of these *versicolors*. The *virginicas* are not all so hardy here, past experience has shown, though once well established they might likely learn to retreat to dormancy when nights turn cooler.

The Hexagonae or Louisianas, so called, are not so well suited to this cool place, nor are the spurias, seeming to need the boost of early spring heat, which we just do not get, but perhaps those in the plastic-house will pay off; it's worth the try. Up the hill and along the berms of the north pond garden are Siberians and a host of others, to be told later. See you.

Original work by Roy Davidson

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SOURCES OF SPECIES IRISES

REDBUD LANE IRIS GARDEN: Jerry & Melody Wilhait & Sons, Route #1, Box 141 Kansas, Illinois 41933

ROCKNOLL NURSERY: 9210 U.S. Hwy 50, Hillsboro, Ohio 45133

INTERNATIONAL GROWER'S EXCHANGE, Inc: Farmington, Michigan 48024.

From the GARDEN JOURNAL of the ROYAL HORTICULTURAL SOCIETY, vol. 107 part 6, June 1982, p.255. Dutch Iris 'Wedgewood' is among several bulbs mentioned as growing more prolifically and blooming earlier after the burning-over of bulb fields as practiced in southwestern England. Andrew Tompsett, Rosewarne Experimental Horticulture Station, Camhorne, Cornwall, reports that the gaseous products of combustion seem to be the cause of the change. Dutch research workers have found that one of the constituents of the smoke is ethylene, and this is suggested as the active agent in hastening the ripening of bulbs and advancing their bloom dates.

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1982

CASH STATEMENT FOR THE YEAR 1982

Cash in bank, 12/31/81			
In checking account	655.58		
In savings account	227.64		
In Rowe price funds	4000.00		
		4883.22	
Income, 1/1/82 - 12/31/82		2337.92	
Expenses, 1/1/81 - 12/31/82		-1272.90	
			5948.24
Cash in bank, 12/31/82			
In checking account		657.91	
In savings account		239.87	
In Rowe price funds		5050.46	
			5948.24

Income

Membership dues		669.00	
Publication sales		425.23	
Seed exchange		400.00	
Gifts		196.00	
American Iris Society			
Foundation grant		85.00	
Earned interest		562.69	
		2337.92	

Expenses

Postage & supplies		112.90	
Editor's fund			
Signa # 28	500.00		
Signa # 29	575.00		
		1075.00	
Chinese - English translations		35.00	
		1272.90	

ED: This is the final statement from Francesco Thoolen as Treasurer and on behalf of the Board of Directors I wish to thank Francesco for a job well and truly done. It may look easy when you see the final result as above, but thats only the end result of many hours of work. We have been particularly pleased with the way Francesco has invested the surplus funds of the Group in the high yielding, but safe, Rowe Price Funds. The interest income from these funds has grown rapidly over the few years she was treasurer and is now second only to the membership fees itself. As you can see, membership fees do not even begin to cover the costs of printing SIGNA, and it is only through the dedication and hard work of various directors operating the seed exchange, publications sales (mostly back issues of SIGNA) and the gifts and grant from the A.I.S. that have enabled us to show a surplus every year since issue #1. Costs have risen but have been kept under control. Membership has also risen and now stands around 300; about 1½ times that of three years ago. With a balance sheet like this there is no thought of a dues rise, a rate that has remained the same for several years.

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REVISIONS TO THE BY-LAWS OF SIGNA

The revisions to the SIGNA by-laws which appear below were approved last year by the Board. They were supposed to have been printed in SIGNA #29, but were postponed in favor of a new membership list. Additions were underlined; deletions are in brackests.

ARTICLE 1: NAME: The name of the organization shall be THE SPECIES IRIS GROUP OF NORTH AMERICA, a Section of the AMERICAN IRIS SOCIETY.

ARTICLE II: INTENT: The purpose of the organization shall be the study of the wild species of the genus IRIS and related Irids. (1) to promote a wider appreciation of these plants as garden ornamentals; (2) to further their introduction and distribution through our seed exchange, while supporting their conservation in the wild; (3) to disseminate scientific and cultural information on these plants to both our membership and the general public, through our publications.

ARTICLE III MEMBERSHIP: A. The organization shall offer membership to all who belony to the AMERICAN IRIS SOCIETY upon payment of subscription-dues, and these shall be termined "REGULAR MEMBERS".

B. The Executive Council may select "HONARY LIFE MEMBERS" who shall enjoy all the privileges of regular members without payment of dues. Their number shall be limited to not exceed 2% of the total membership.

C. "ASSOCIATE MEMBERS" may suscribe and receive all the privileges of regular membership, except that they shall have no administrative voice in the organization's affairs.

ARTICLE IV: FIANCE: A. Affairs of the organization shall be financed by:
(1) Subscription-dues at the rate to be determined by and periodically reviewed by the administration, and
(2) Proceeds from the seed exchange and from sales of publications.
B. No moneys shall be issued from the TREASURY in payment of services to any member of the Society, or to any member of the EXECUTIVE COUNCIL.
C. In the event of disbandment, any moneys in the TREASURY shall be assigned to the AMERICAN IRIS SOCIETY FOUNDATION.

ARTICLE V: FUNCTION: The organization shall promote its purpose through:
A. Operation of a seed exchange
B. Publication of a NEWSLETTER of communication to the membership.
C. Publication of such other materials as the administrative council shall determine.

ARTICLE VI: ADMINISTRATION: The affairs of the organization shall be administered by an EXECUTIVE COUNCIL (delete to be) chosen by consent of the MEMBERSHIP and to consist of:

A. The following officers to be elected by the MEMBERSHIP:
(1) CHAIRMAN: Who shall act as co-ordinator and shall perside at all meetings.

ARTICLE IV: ADMINISTRATION: (cont.)

(2) ASSISTANT CHAIRMAN, who shall assist the CHAIRMAN and assume his responsibilities if it becomes necessary.

(3) TREASURER, who shall be in charge of finances and communicate records of the same to the MEMBERSHIP via the NEWSLATTER.

(4) MEMBERSHIP SECRETARY, who shall keep the membership records and furnish lists of members to the other executive board members as necessary for their respective operations.

B. The following positions shall be appointed by the EXECUTIVE COUNCIL.

(1) EDITOR OF PUBLICATIONS: Who shall prepare, with the assistance of the members of THE EXECUTIVE COUNCIL, the NEWSLATTER and such other publications as are decreed, and to distribute the same to the membership.

(2) SEED EXCHANGE DIRECTOR: Who shall receive and record the seed, compile and distribute the ANNUAL SEED LIST, receive and fill orders, and keep financial records of these transactions.

(3) and (4) Two MEMBERS AT LARGE, who shall act in an advisory capacity as requested.

C. TERMS OF OFFICE: Elected officers shall serve for a term two (2) years. Appointive positions shall be indeterminate.

D. METHODS OF ELECTIONS

(1) A slate presented by the nominating committee shall be published in the spring issue of SIGNA in elections years.

(2) Officers shall be declared elected in the fall issue of SIGNA, and shall assume office October 1st.

(3) Vacancies shall be filled by action of the EXECUTIVE COUNCIL

ARTICLE VII: MEETINGS: A. There shall be convened one non-administrative meeting per year, to be open to all members and guests.

B. Meetings for administrative purposes, open only to the members, may be. convened.

(1) At the discretion of the EXECUTIVE COUNCIL.

(2) By petition of 10% of the MEMBERSHIP to the EXECUTIVE COUNCIL.

ARTICLE VIII: AMENDMENTS: A. These by-laws shall be subject to periodical review and revision.

(1) At the discrition of the EXECUTIVE COUNCIL.

(2) By petition of 10% of the membership to the EXECUTIVE COUNCIL, with all proposed amendments subject to approval by two-thirds of the MEMBERSHIP.

B. All amendments must conform with the AIS rules governing SECTIONS.

FAME THRUST ON AUGUSTINE HENRY

Roy Davidson

Writing for the Journal of the Alpine Garden Society of British Columbia, garden historian Alleyne Cook has pointed out that Augustine Henry literally stumbled onto the vast plant riches of western China, even though the bulk of the credit and all the fame goes to his successor E.H. Wilson and his contempories; Ward, Forrest, Farrier and Rock. Although Robert Fortune and Charles Maries both had reached Ichang before Henry, neither had gone far beyond this riverport terminus and seat of trade. Fortune's important introductions to horticulture were gathered mostly from cultivated sources both in China and Japan, while their natural conditions remained in many instances, for a long time unknown, while Maries after succeeding, quite by accident from a street merchant, to obtain his goal the blue lilac (*Daphne genkwa*) and dis enchanted with the situation because he could not find it possible to get along well with the Chinese, fled Ichang in relief. Neither of them had any inkling of the extent of the vast wealth of material that lay just beyond and to the west for fifteen hundred miles! (See pp. 900-01).

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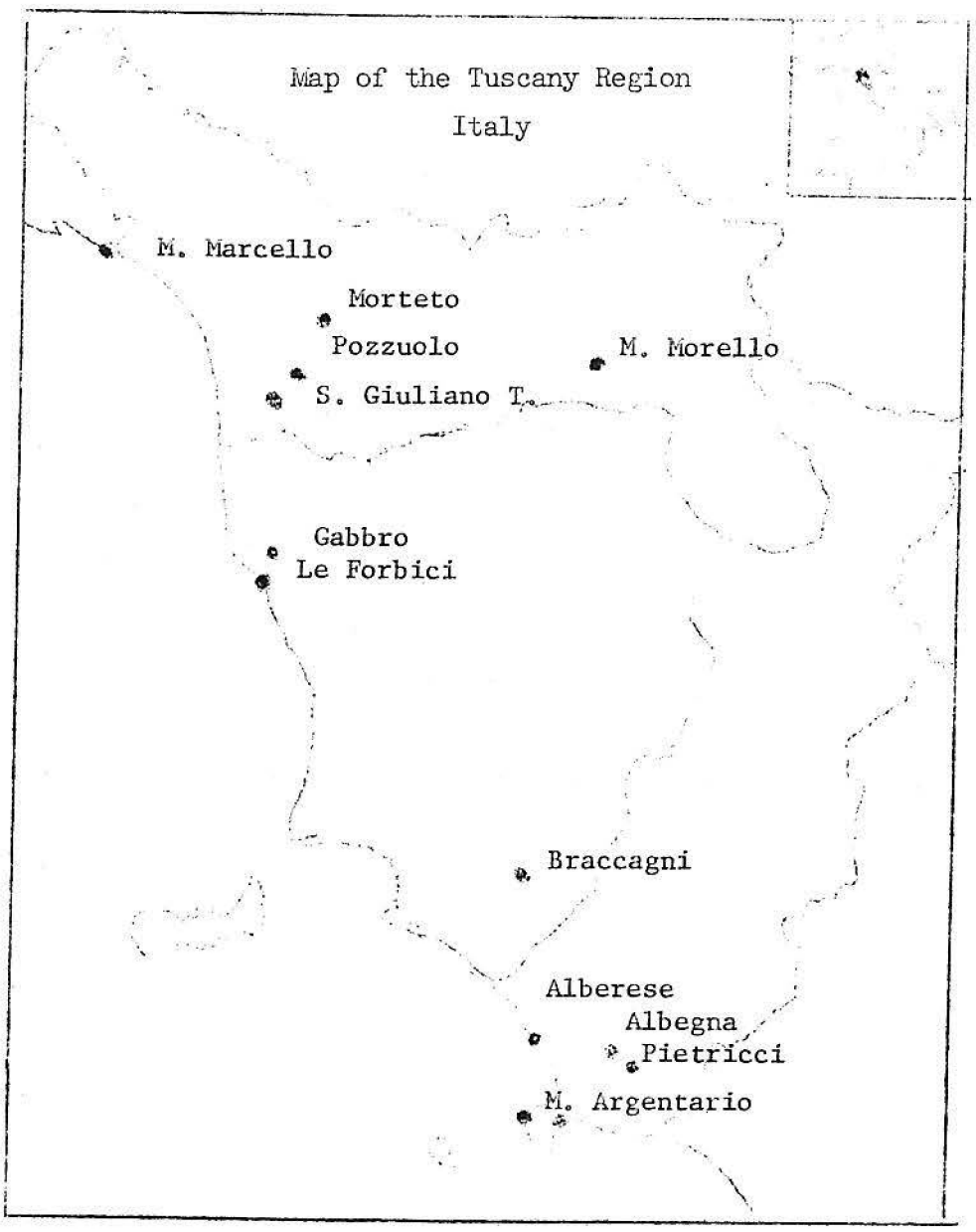

PRESENT DISTRIBUTION OF DWARF BEARDED IRISES IN TUSCANY

Elena Maugini and Laura Bini Maleci - Botanical Institute, Via La Pira 4 - Firenze

We have been working for several years on dwarf bearded Irises, with special reference to those growing in Tuscany. At first we studied their karyology (MAUGINI *and BINI MALECI 1973, 1974; BINI MALECI 1976),* later we enlarged our studies to Herbarium and field investigations and recently we have gathered all our observations in a conclusive work (MAUGINI and BINI MALECI 1981), which proves, with the support of a rich collection of experimental data, the previous authors' views (DYKES 1913; WEBB and CHARTER in HEYWOOD 1978). The results obtained indicate that the dwarf bearded Irises, previously referred to as *Iris lutescens* Lam., *Iris chamaeiris* Bertol., *Iris italica* Parl., *Iris olbiensis* Hen., must be regarded as one single species with a wide range of variation manly due to the presence of different clones with vegetative reproduction. The legitimate name to be applied on a priority basis is *Iris lutescens* Lam.

Our investigations, which lasted eight years, allowed us to identify the existing sites of *Iris lutescens* in Tuscany and, at the same time, to observe their evolution in the course of these years. The present distribution of *Iris lutescens* was compared with the one in the last century, obtained from the exsiccata preserved in the Herbariums of Florence and Pisa, and also from the literature.

The species distribution as obtained from the literature from Herbarium records and from our own investigations is shown in Fig. 1. Monte Marcello is the only locality mentioned in our work for the first time.

Braccagni and Pietricci are the richest sites; there many individuals of this species are growing in an abandoned olive field and in the clearings of a much degraded Mediterranean marquis* respectively. In both stations plants of *Iris lutescens* occupy large areas spreading over the sides of a low hill. In these localities the plants show healthy conditions as they are little affected by human interference. Particularly, the locality called Pietricci, being part of a property owned by a noble Italian family, is scarely visited and therefore we may expect it to remain in good condition in the future. Some individuals of *Iris lutescens* were found by the authors along the banks of the river Albegna near Pietricci, but later, after some maintenance work carried out along the riverbanks, no more plants could be seen.

Some more individuals of *Iris lutescens* were found near Alberse, a few kilometers from Pietricci; furthermore, a sporadic occurence of this plant on the surrounding hills is known. This locality and many acres of surrounding land have now been incorporated into the Maremma Natural Park where the plants should be protected from extinction.

The station called Monte Argentario may be regarded as by far the most unfortunate site. This land of Tuscany, extending into the Tyrrenian sea, is particulary beautiful and is covered by a rich Mediterranean vegetation much studied by 19th and early 20th century botanists. In the past *Iris lutescans* was very common on the promontory slopes toward the open sea and also toward the lagoon. Evidence of its presence can be found not only in early reports but also in the numerous Herbarium specimens. During the past twenty years the whole place has been subjected to intense tourist exploitation and many new houses and some villages have been built. Researches carried out during the seventies, yielded only two small sites, one facing the lagoon and the second one facing the sea. In the summer of 1981 Monte Argentario was practically destroyed by a raging fire and there-

** marquis is a characteristic Mediterranean plant community, somewhat analogous to the Chaparral of California. It consists chiefly of evergreen shrubs such as Cistus, brooms, and tree heaths, which form, more or less, thickets and harbor a wide variety of bulbs and herbacious plants.*

fore the survival of our plants is very questionable.

Several sites were reported in the past along the seacoast, near the town of Leghorn (Ardenza, Castiglioncello, Botro del Fortullino). In a locality called Le Forbici (near Castiglioncello) the authors found an area limited in size, but rich in individuals. The plants grow on a steep slope along the railway and appear to be in good condition, being protected from human trampling. The seacoast to the North and to the South of Leghorn is now intensively built up. Ardenza, the "locus classicus: of *Iris chamaeiris* described by BERTOLONI (1838), is now within the outskirts of Leghorn.

Near Le Forbici, but inland, is abbro where a good number of plants have been found. This location, although not far from the village of Gabbro, is rather remote from roads with heavy traffic and is out of the way of weekenders; therefore there is some hope the plants may survive.

At Morteto, Pozzuolo and San Giuliano Terme, *Iris lutescens* is now poorly represented; in the past these populations must have been very rich in individuals as proved by the numerous references found in the literature and by the existence of several Herbarium specimens; among these there are old specimens collected at Gattajola, very near Pozzuolo. No plants, though, could be found there during our recent trips.

Monte Morello, near Florence, is the one Iris station, among those observed by the authors, which is the most distant from the sea. A few plants have been found on the mountain slopes and top.

Monte Marcello is situated at the northern border of Tuscany. Many individuals grow on the rocky mountainside facing the sea.

In addition to the above listed localities which had been closely watched for years and where rhizomes had been collected to be grown in the Botanical Garden of Florence, *Iris lutescens* was known, from the late 19th century, to live in the Giglio island and on Monte Calvi (Massa Marittima - Grosseto). No investigations were carried out in the first locality; as for the second, *I. lutescens* was found along the mountain sides but nothing can be said about the top which is very hard to climb.

Our investigations were limited to Tuscany only, where *I. lutescens* is more widely spread. At the beginning of this century this plant occurred frequently on the Ligurian coast (north of Tuscany) where we hope some plants still survive.

There are indications that this species also grows in regions south of Tuscany, such as Lazio and Campania. We assume that it may be found within the range reported for *Iris pseudopumila* (Puglia and Basilicata).

Iris lutescens seems to have no special requirements as regards to soil. Though most of its populations grow on limestone, a few have adapted to serpentine rocks. When experimentally cultivated in our garden, only the plants collected at Le Forbici had no difficulty in adapting to the changed substratum while those of Gabbro hardly ever survived even if grown in their own soil. This species does not require a deep soil, a little amount of ground being suffiecient for its growth. What we do know is that it certainly needs a well drained soil.

This Iris has flowers of two different colours, yellow and violet, which may be found mixed together in the same population. Often, though, one colour is prevalent. In some places, like Monte Morello, Monte Marcello and Monte Argentario, only violet flowers were noted. The maximum colour mixture was found at Pietricci where yellow flowers with spotted or violet streaked falls could be admired creating beautiful effects of brown and pink.

The plants brought to the Botanical Garden were grown mainly in pots for the karyological investigations. Only some specimens from Braccagni and Pietricci

were cultivated in the beds. The number of flowers produced by plants from different sites was observed to change from year to year. The plants from Pietricci and Le Forbici adapted better than the others to culture and bore more flowers. Yet, even when flowers were numerous, capsules were rare and therefore only few seeds were produced. During our experimental cultivation we never bred artificial hybrids, but the plants were allowed to cross freely. The germinating capability of sown seeds was good enough.

Iris lutescens is a strong, healthy plant that does not seem to suffer from particular diseases. Only the Iris white fly (*Hylemia pullula*) occasionally caused injury to the flowers. The plants most sensitive to the attack by the insect were those collected at Morteto. It is not clear whether this is due to weaker resistance to the insect attack in the Morteto plants or to the fact that these blossom later in the season as compared to the other populations, and therefore the buds grow when the fly is most aggressive.

The reduction in the number of individuals and populations is undoubtedly the result of interference by man. Large coastal areas which have now become tourist resources, such as, for instance, Monte Argentario, have been lately subjected to intense urbanization thus subtracting space from these plants and determining, by the direct or indirect alteration of the ecological environment, the disappearance or the drastic reduction of *Iris lutescens* in many places. In addition it must be said that *Iris lutescens* usually attracts the attention of occasional seekenders who do not hesitate to pick it and also to remove the rhizome as well. This is the reason why in rarely visited areas like Pietricci and Braccagni, this plant prospers as it did in the past.

In our opinion the chance of survival of *Iris lutescens* in Tuscany is sufficiently good in remote or protected areas such as the Parco della Maremma (Alberese). Elsewhere its permanence is more doubtful. In fact some populations known since the last century and the beginning of this century have now disappeared and we hope that the same will not happen to other populations.

IRIS VICARIA

N.H. Hoog, of Haarlem, Holland.

The statement made by Dr. M. Amsler in *The Iris Year Book* of 1947 (pg. 139) that Mr. G.P. Baker had collected this iris in Turkestan I fear misrepresents the facts, as Mr. Baker often collected in the Near East, but never in Central Asia. Very probably our old friend obtained this iris from Messrs. van Tubergen, Haarlem.

It was offered for the first time in their catalogue for autumn 1938-spring 1939, and was described as:

"*I. vicaria*, white delicate blue tinged, a very fine robust-growing species, bearing many flowers in the axils of the leaves, April, 2 feet."

In 1930 or thereabouts the Russian Government was much interested in selling collected wild bulbs in Europe. At that time big importations of *Lilium Szovitsianum*, tulip species and other bulbs arrived. Some growers in the neighbourhood offered *I. warleyensis* and as the stock of this species in our nursery had become very small we were interested to see these plants. However, on examining the plants labelled as *I. warleyensis* we found they were quite different and with the help of Professor Fedtschenko's book, *Species of Wild Flowers of the U.S.S.R.*, we were able to determine the correct name.

With us *I. vicaria* is easily grown as *I. bucharica* and the new *I. Gaeberiana*. The bulbs are planted in the beginning of November in sandy soil, containing a fair quantity of lime. In winter the bulbs are covered with a layer of rushes as is the habit in the bulb district in Holland. The cover is taken off in spring and when the bulbs have died down in July the bulbs are lifted. We never leave them in the ground. Great care is taken that the roots as far as possible are not damaged and the bulbs are stored in a dry, slightly-heated room till the time of planting has come again. Seeds are freely produced, and provide a ready means of propagating this species.

Reprinted from the BIS Yearbook, 1948

SPECIES REGISTRATIONS, 1982

Those not otherwise included in Sections

DAVAAR (Mrs. M. Harvey, R, 1982) *Evansia*, 48-54" (122-137 cm), M. Very pale lavender; slightly deeper stylearms with fringed tips; deep gold crests on white zone, pencil line signal; cane bearing form. Ellis white sdlg. x Question Mark.

HERALD BLUE (L. Zurbrigg, R, 1982) Sdlg. K-103. *Laevigatae* 32" (81cm), M. Deep violet-blue, yellow signal. From Japan: seeds of *I. laevigata* from remontant iris crosses. Avonbank 1982.

KILKIVAN (Mrs. M. Harvey, R. 1982) *Evansia* 4½-5' (137-152cm), M. Pale lavender with pale gold crest on white zone, numerous deep lavender signal markings; pale lavender style arms with fringed tips; deep green foliage topping medium green canes. Ellis white X Question Mark

MINT FRESH (B. Warburton, R. 1982) Sdlg. 80-vers.-1 *Laevigatae*, 28" (71cm), M. S. white ground, strongly etched with red stripes (RHS 74A); F. same (overall colour effect is 74D); styles ribbed magenta; pearly crests etched red. Second generation from mixed *I. versicolor* seed (SIGNA).

OLIVER PEASE (O. Pease by E. Wood, R. 1982) *(Laevigatae) I. versicolor*, 36" (91cm) E-M. Red-purple (RHS 64A) self, yellow signal. *I. versicolor X I. versicolor*

QUESTION MARK (Mrs. M. Harvey, R. 1982) *Evansia*, 4½-5' (137-152cm), E-L. Smooth pale lilac, deeper-toned fleck markings, bright gold crests, signal points radiate from crests; dark green foliage topping dark purple-green canes. Unknown parentage, but probably *I. wattii X* 'Darjeeling' or *I. confusa*.

WINTER MEMORIES (E. Cleaves by Ben Hager, R. 1982) *I. unguicularia*, 12" (30cm), M. S. purple; F. deeper purple, reverse buff; white signal, veined dark, yellow spots. Unknown parentage. Melrose Gardens 1982.

In addition to the above there are two Spuria section crosses involving species and a number of Aril crosses.

RUSSIAN BLUE (D. Niswonger, R. 1982) Sdlg. Sp 13-78. *Spuria*, 48" (122cm), E. Blue with yellow signal and veining extending out from signal. *I. klattii X* Blue Lassie

RUSSIAN WHITE (D. Niswonger, R. 1982) 12-78..*Spuria*, 48" (122cm) E. White with small yellow signal. Blue Lassie X *I. klattii*

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Word came here recently of a new hybrid Vesper Iris named SUMMER SNOW. It is from X *Pardancanda norrisii* and has been registered and introduced. It is a chance seedling of perfect iris form and white. It can be obtained from George C. Bush, 1739 Memory Lane Extd., York, PA 17402, U.S.A.

Although the above sounds like the well know Vesper Iris, the flowers at 2" across are certainly larger than any I have grown here. Mr. Bush is offering them at $10.00 each plus postage and handling and claims to have more introductions to come in pink and plicatas.

Our members should take note than the Vesper Iris is looked upon as a short-lived perennial of about three years. It must be constantly renewed from seed or division (in the case of these hybrids.) Mr. Bush has an information sheet.

A LIST OF THE LITTLE FELLOWS

Jean Witt

This list grew out of a series of slide shows that I have given recently. It consists of those species with stem heights of 25cm and under--an arbitrary upper height limit of about 8-10 inches--which are of suitable size for rock garden use. If our individual gardens ran the gamut from desert to moist woodlands, and if more of the rare Asian species were available, we could grow right around a hundred "Dwarf" species! One interesting point has emerged--the little fellows are not, in general, swamp dwellers (perhaps because they would have long since been smothered by cattails and other rank water-loving plants!). Most of them come from desert or semi-arid regions, grassland, open coniferous forests, or rocky outcrops and edges of deciduous forests.

Readers are referred to past issues of SIGNA, WORLD OF IRISES, and Brian Mathew's THE IRIS for information on flower colour and growing conditions. The lists for oncocyclus and Junos include only a few of the more commonly mentioned species, since most are not available and/or difficult to grow at best.

BEARDED, Section Iris

Pumila (including Taurica).
MDS: many named selections and hybrids of pumila and other dwarf species
lutescens (chamaeiris, olbiensis
SDB: ~~unnamed~~ hybrids of pumila and other dwarf species
alexeenkoi
aphylla (some clones; also furcata)
aphylla-pumila hybrids (barthii,. binata and others).
astrachanica
attica

Section Psamiris

bloudowii
humilis (arenaria, flavissima).
mandeshurica

Section Hexapogon

falcifolia

Section Regelia

afghanica
darwasica
heweri
lineata

Section Oncocyclus

acutiloba
atropurpurea
barnumae
ilerica
mariae
sari
babadagica
'Cretica' (a form of pumila).
griffithii
pseudopumila
reichenbachii (balkana, bosniaca).
scariosa
schachtii
suaveolens (mellita, rubromarginata).
bubbiflora
taochia
variegata (a few are tiny).

Section Oncocyclus cont.

yebrudi
Named hybrids: a few of the various kinds of Aril hybrids are dwarf in stature.

Section Pseudoregelia

goniocarpa
hookeriana
kamaonensis
tigridia

Crested, Section Lophiris (Evansia)

cristata
lacustris
gracilipes
pseudorossii
speculatrix
tenuis

Beardless, Series Californicae

chrysophylla

BEARDLESS, Series Californicae cont.

innominata
macrosiphon
small selection of the following
    bracteata
    douglasiana
    fernaldii
    hartwegii
    purdyi
    tenax
    tenuissima
Many named clonesand/or hybrids under 10"

BEARDLESS, Series Chinensis

grijsii
henryi
koreana
minutoaurea
odaesanensis
rossii

BEARDLESS, Series Spuriae

graminea (including colchica and pseudocyperus).
ludwigii
pontica
sintenisii (including brandzae).

BEARDLESS Series Tenuifoliae

bungei
loczyi
tenuifolia
ventricosa

MISCELLANEOUS BEARDLESS SPECIES

lactea (biglumis, fragrans, iliensis, moorcroftiana, oxypetala, pallasii, triflora and lactea var. chinensis).
unguicularis 'Cretensis'
verna
ruthenica (including caespitosa, uniflora)
setosa ssp. canadensis (kookeri).

Subgenus Nepalensis

collettii
decora (nepalensis)

BULBOUS, Subgenus Scorpiris (Junos) (partial list only).

caucasia
fosterana
nicolai (rosenbachiana)
persica
planifolia

BULBOUS, Subgenus Hermodactyloides (Reticulatas).

bakerana
danfordiae
histrio
histrioides
hyreana
kolpakowskiana
pamphylica
reticulata
vartanii
winogradowii
also many named and/or hybrids.

Unfortunately there is no such thing as a single dealer in all types of irises. Reticulatas and Junos can be found in the lists of bulb specialists. The Aril Society International should be consulted for further information on sources and availability of Oncocyclus and other aril species. Dwarf, Median, Pacific Coast Sections of the AIS have all published checklists of their groups, and the catalogues of dealers who specialize in these groups offer a wide selection of species and named varieties. Dealers in rock garden plants and/or native plants are likely sources for the smaller American species. Rarer species appear from time to time on BIS and SIGNA seed lists and on seed lists of the various alpine garden groups. Thanks to the activities of our far-flung membership and their willingness to share their treasures, this list has expanded considerably in the time SIGNA has been in existance, and can be expected to grow further in the future. Additions, corrections and comments on sources will be welcomed

QUESTION: How does one pronounce *Iris grisjii*, a species in the Series *Chinenses*?

ANSWER: Appendix B. on page 510 in GARDEN IRISES gives this pronunciation: gree-yiss-ee-eye, with the accent on the second syllable.

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ERRATA, ADDENDA, AMPLICATION, ET AL.

Roy Davidson

"Oversight of even the simplest human error can not only lead to perpetuation of misinformation, it may innocently tend to monstrously disproportionate consequences"

Our contributors, our editor (and our watchdogs) continue striving to make SIGNA a trustworthy source of reference. But we do error, and feel it worthwhile to make the following adjustments.

689 p.: Quotation from Anderson should read "neither too wet for grass nor too dry for cat-tails" This stands true even for New England. (Sorry).

mid 690: Somehow we managed tc garble the facts on *I. X robusta*, and as are fairly certain we now have several clones in distribution it is important to read: "All were alike in resembling *versicolor* more nearly, yet with larger and more lax standards, and an even more brilliantly spotted base to the falls due to the combined effect of papillae (from *versicolor*) with the pubescence and stippling (from *virginica*.)"

bottom 710: Mathew has found the "orphan" named for Miss Willmott to probably be one of several colour forms of *I. bucharica*. (The IRIS p. 170).

711: Under discussion of Juno root damage; see also p. 715, another side of the coin.

top 747: Making "brought" into "bought" infers a business transaction; the irises were collected at Thrall, a railway siding south of Ellensburg where irrigation overflow had established *missouriensis* in a not uncommon sagebrush association.

top 777: Reference to study manual illustration; Dr. Medcalf questioned the accuracy of this drawing, adapted from Eames "Morphology of Angiosperms" McGraw-Hill (1961).

338-9: Germination of many kinds of iris seed during 1981-2 gave "plantlets", some very tiny, fragile and fascinating under a hand-glass, which in all instances did conform to the generalities of the drawing questioned (made from seedlings of *I. pseudacorus*) though there may well be varied opinion of the function and terminology of the various parts.

811: The author here was the late Charles Bedbrook, an early robin member in England.

813: line 11 from bottom: See Luscombe's note p. 846.

864: Brian Mathew has published "Turkey Yellow" as *Iris xanthospuria*. 1982.

859: The report of the Rock Garden Conference is still available from the ARGS Bookstore, 1421 Ship Road, West Chester, PA 19380 for $16.95 pp. Limited edition will not be reprinted. Finest reference of American plants. Soft bound.

875: Sarah Tiffney's white *versicolor* is doubtlessly the original *murrayana*. See p. 945.

883 & 982: Here we have the first good reports of *I. tridentata* in its native condition, just the sort of thing we'd been hoping we'd get! Now we need some cytological study to determine how it fits the iris puzzle. Looks like *setosa*, but...??? See pp. 919-20.

mid 887: Not critically important, but the fellow who managed to bring what we know as *I. wattii* from the Yunnan-Burma region was Maj. Lawrence Johnston, not Johnson nor Johnstone, who collected with George Forrest part of 1931, establishing the iris from that collection (not from seed) at his winter residence at Mentone

on the Rivera from whence it went to England. This is the original, or English *I. wattii* of Molseed's notes (p. 902) and from which Jean Stevens raised 'Queens Grace' and which Ellis now considers a likely hybrid/self.

mid 900: This "Mr. Evans" was of course Thomas Evans for whom Salisburg named Evansias.

mid 901: Chimbamba (a student of Ellis) has contributed most of what we know of this work (Cytologia 38, pp. 501-513) in an article entitled "Evansia Hybrids". He records those of (*confusa-wattii*) derivation as well as the (3n *japonica X confusa*) and (*confusa X confusa*) crosses which we know, but also, most interesting, crosses with the supposedly normal fertile diploid *japonica* (which we have been seeking in China) including (3n *japonica X*2n *japonica*) and (*confusa X* 2n *japonica*).

909: Seed of 'Holden Clough' has been variously described, according to local circumstances and exposure to atmosphere. More later on this.

944: Note also that *setosa* is found in N. Japan, Hokkaido and Honshu Islands

949: Has anyone tried crossing *missouriensis* (or *longipetala*) with the Asian Ensatae? There may be scientific value if such a cross succeeds, evem , it begets only dogs!

959-60: The American blue flags are so-called frequently in horticultural literature . Linnaeas did not make clear enough that there were two "Larger" ones and so both *versicolor* and *virginica* went in gardens by the name, in contrast to the smaller "Blue Flag" which was *prismatica*, quite logically, also known as "Slender Blue Flag".

966-68: This twice-printed review was hardly worth space but drew comment from Dr. Pray of the Aril Society International, viz: "I much doubt that I could have been so charitable." (Rightly or wrongly, this reviewer feels it is his place to commend what seems both innovative and logical and to ignore what he cannot accept---or understand?).

969-977: One of our greatest collector-botanists here finds it difficult to accept what doesn't seem logical, that some of his plants are so variable and so capable of survival in a variety of conditions. Perhaps *I. clarkei* IS sufficiently distinct to fit in a class of its own, but it does interbreed with others. Or are we deluding ourselves? How many of these forms do we have in cultivation?

ED: When I first scanned these two pages from Roy I was shocked to think there could be so many errors in SIGNA, but then relieved to see it was mostly ADDENDA AND NOT SO MUCH ERRATA. Actually it is good of Roy to add his comments to these articles and seek to clairfy some statements that may seem vague to some of us. Thanks for taking the trouble Roy.

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LETTERS

Roger Kirkwood, Supt. Lake of the Woods Botanical Garden, Mahomet, Ill.

Just a note to express appreciation and thanks for the work of SIGNA. And especially in the efforts of those associated with the seed exchange, for only in this way has it been possible to develop plantings of Species Iris of considerable diversity here at Lake of the Woods Botanical Garden. Sited near Chanpaign-Urbana, Ill., the Botanical Garden is operated by the Champaign County Forest Preserve... I hope we might be included in any listing of public gardens showing Species Iris--we certainly enjoy growing and displaying them. Best Wishes.

Mrs. H. Catton, Hastings, New Zealand.

.....I thought Brian Mathews' book very good, though I must admit I was horrified at all the changes of names of my favourite little ones. Isn't it funny how you can try for years to grow a certain iris without much success, and when you have decided you will either give up trying and just shove it in some corner it suddenly comes to life. I have had rubro-marginata for years and it has just survived and that is all; shifted it from place to place without any luck. I dug it up after Christmas and forgot to plant it again for several weeks. When I found it lying there all shrivelled up, I took pity on it and planted it in a big clay pot in a peat, sand and pumice potting mix and put it in a fairly shady place and it has just taken off. It is the same with seeds; you wait for years for them to come up and no sooner do you tip the soil out some place than they all pop up like mushrooms. Some years ago a friend managed to bloom *hoogiana* and proudly brought me an anther. I put the pollen on the only dwarf that was out, Kentucky Blue Grass and got three seeds...I felt the pot for four years and no sign of life, so I used the pot to put a rooted fuchsia cutting in. Now I see one healthy little iris seedling keeping the fuchsia company.

Dr. William G. McGArvey, Oswego, New York.

My discovery 15 years ago that siberian irises can be selfed with no lack of vigor (tall bearded are almost impossible to self) and that *I. fulva, I. kaempferi* (now*I. ensata), I. virginica, I. laevigata* and *I. pseudacorus* all have similar characteristics means that these species can be examined for recessive genes. The other reason why my findings are important is that this same characteristic makes it possible to locate hidden factors for variability more quickly and surely. For example I found the naturally damp ground species *I. forrestii*carried adaptability genes that produced plants which can be grown in hard dry soil In a similar way I also discovered that the naturally warm weather plant species *I. fulva* carried recessive genes which made it possible for one plant (seedling) out of more than 100 carried variability genes which make it resistant to the cold weather we have in Oswego, N.Y. This plant not only survives in Oswego, but it reblooms there for me.

Jean Witt, Seattle, Washington.

Members whose particular interests include Bulbous Irises will find a long article on the subject by M.H. Hoog, in the R.H.S. publication THE PLANTSMAN, vol. 12, part 3, Dec. 1980, pp 141-164. Reticulatas, Junos and Xiphiums are each dealt with in turn, with details about their history, lists of the species included in each group, and cultural experience in Holland. Hybrids and named varieties are discussed, and especially in the case of the Dutch irises, the material on named varieties is much more extensive than that in WORLD OF IRISES. The list of Junos includes some species names from Russian authors which I had not seen previously. Several excellent black and white drawings, and an extensive bibliography round out the text.

Mr. Hoog's remarks about the prospects of yet further material of Xiphiums in the wild are worth quoting: "To my mind there exists still a vast potential of species and natural varieties in North Africa, especially in the northwest. So far it has not been possible to make a full inventory of the irises from the Great Atlas, the Middle Atlas, nor from the Rif and Aures ranges. Montane regions in southern Spain and Portugal still have not yet been throughly investigated from this point of view." I wish it were the sort of thing that SIGNA could reprint, but this seems unlikely. Your local library might be able to find it via inter-library loan. The PLANTSMAN is more likely to be in botanic garden and university libraries than in even the average big city library.

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ANNOUNCEMENTS

SUBSCRIPTION DUES: Dues are $3.00 U.S. per year, either single or family membership. SIGNA is printed twice a year, April 1st and Oct. 1st. Send applications to our Secretary:

FLORENCE STOUT
150 N. Main St.
Lombard, ILL. 60148, U.S.A.

PUBLICATIONS AND BACK ISSUES OF SIGNA: There are still a few of the early issues of SIGNA left (the first ten issues), although #7 is sold out and will be reprinted if sufficient demand. Others are down to 2-3 copies. The later and larger issues are in good supply. The price for these back issues remains the same - $1.50 per copy.

AN ALPHABETICAL TABLE and Cultivation Guide to the species of THE GENUS IRIS: (1974) We still have about a dozen copies left of the British Iris Society publication. It is priced at $1.50 per copy. For this and back issues of SIGNA send payment to our Treasurer:

GENE OPTON
12 Stratford Rd.,
Berkeley, Calif. 94707 U.S.A.

STUDY MANUAL $5.00 per copy.

SLIDES: Signa has an excellent collection of iris species slides available for showings at iric meetings etc. A number of new additions have been made this this year as in other years. There is no cost to the borrower except the the return, insured postage. Requests should be made well ahead of the required date and the box returned promptly when no longer required. Send requests to ou r Chairman for the time being until a new Slide Chairman is appo inted:

JEAN WITT
16516 - 25th NE.,
Seattle, Wash. 98155

NOTICE RE OVERDUE DUES: Suscriptions are normally due Jan. 1st of each year, but some come due on the half year to coincide with A.I.S. membership, and may be paid to A.I.S. along with their dues and will be credited to SIGNA by the A.I.S. Treasurer. Our new Secretary, Florence Stout, is tuning up her computer to print the expiry date of your suscription on the mailing labels, and it will appear as three numerals. The first two the year and the third the month of expiry. i.e. 841 will mean 1984, Jan.1st. your suscription will expire and the last issue you will receive will be Oct. 1983. Please try and keep your suscriptions up to date and save unnecessary dues reminders or extra letters from our Secretary. Renewals are accepted for more than one year if you wish (as many do) to save bother and renew for several years. Rate is the same: $3.00 per year, for as amny years as you wish.

INDEX EDITOR: SIGNA is in need of an editor to bring the five previous indexes up to the current issue. The last issue indexed was #22, so with this current #30 we are now eight issues behind. Since these are larger than the early issues, it means that almost one third of all the pages of SIGNA have not been indexed and it is becoming increasing difficult to find information therein due to its sheer volume. SIGNA is not like a newspaper that you read once and throw away, and has very little of that kind of news in it. It is intended to be timeless like a good reference book. The first index was made by Jerry Flintoff and later ones by Roy Davi son, both unavailable to do a new index. It really should be a group project due to its size, and it would be ideal if the previous five indexes could be incorpulated in one with the unindexed part to make a search more convenient. Extra copies of the back issues can be made available if needed for this work. Any volenteers? *

ARIL SOCIETY INTERNATIONAL: In a recent newsletter of this Society they published an item on joining SIGNA (and who to send dues and membership applications to) and we would like to reciprocate with their membership information. If you can grow the aril species the information in their YEARBOOKS is invaluable. Send to Robin Kleinz
Box 2278
Payson, AZ 85541, U.S.A.

Single Annual, $4.00 Triannual $10.50
Family Annual $5.00, Triannual $13.50
(U.S. dollars).

CHANGES IN THE BOARD OF DIRECTORS: NEW TREASURER: As noted in SIGNA 29, Gene Opton has now taken over the position of Treasurer from Francesco Thoolen as of Jan. 1/83. We have had several treasurers over the years, and all but the first one has done an excellent job of keeping the finances straight and wisely investing the surplus we have been fortunate to obtain every year without exception. Francesco's years especially have shown a marked increase in the surplus account and the revenue derrived therefrom. I am sure we can count on Gene too to do an equally outstanding job of accounting.

NEW SECRETARY: The change in secretary came about suddenly and for an unfortunate and tragic reason. Grace Carter's daughter was stricken with serious illness and as if that wasn't enough Grace herself was laid low with a similar ailment, which required treatment and especially rest. A sudden change for Grace who has foll' husband to conferences widely and was just recently back from the Amazon River area. We wish her a speedy and safe recovery and will look forward to hearing more from her in the years to come. She will be sorely missed in the SIGNA organization.

We are fortunate in having FLORENCE STOUT available and willing to help SIGNA in some capacity. She has taken over as SECRETARY as of now and has sent me a short resume which I would like to quote in part by way of introduction. Florence graduated from Miami University, Oxford, Ohio and taught public school prior to marriage. She has been an active gardener in Lombard, Ill. for 40 years, particulary in iris, holding offices in local, regional and national iris societies. She recently wrote THE NEW HANDBOOK FOR IRIS GROWERS, distributed by the Northern Illinois Iris Society and shortly after compiled the CUMULATIVE CHECKLIST OF JAPANESE IRISES (for the Society for Japanese Irises.) Handy with a camera too, using her slides to inform as she has given lectures on various occasions. In this fast moving world she is one of a new breed using computers in the home. Her skill with this device has already been put to use for SIGNA in the form of a printout of the membership list. I used to get these from Prof. Homer Metcalf when he was secretary and know how convenient it is to keep this constantly changing list in some sort of order. Welcome to the job Florence.

NEW EDITOR: Joan Cooper will be taking over as Editor from Bruce Richardson, commencing with the fall, 1983 issue - the next one after this issue. I don't have a resume on Joan, but I believe she is fairly well known to the membership as COOPER'S GARDEN, a commercial nursery, one of the few specializing in species iris. As our Species Iris Robin director she has been well acquainted with the proceedure of the assembling the material that goes into SIGNA and has contributed articles on occasion. For the time being she will attend to the editing and see to cutting the stencils, but the printing and distribution of SIGNA will continue to be done here at Hannon, Canada.

PUBLISHED COLOUR ILLUSTRATIONS OF *IRIS* SPECIES: From time to time Homer Metcalf has reported on colour photos of species iris that he has run across. Here are some more to add to the collection.

"This one appeared on the inside cover of MODERN MATURITY for Feb./Mar., 1982. It depicts *I. douglasiana* growing amongst redwoods *(Sequoia)* in (presumably) north-western California." *ED: The B/W photo Homer sent shows this iris in what is an open part of the forest, thick trees in the background and ferns growing in amongst the iris. Indicates a damp, shady site? The growth is lush.*

"Another colour photo of *Iris lacustris* has been published. It appears in THE NATURE CONSERVANCY NEWS, issue of Sept./Oct. 1981, on p. 9."

"The latest one is an article by Ann Branch Dasch in the June 1982 issue of AMERICAN HORTICULTURIST (v.61(6): 14-19, 1982), which carries large colour photos of the Siberian ''Dewful', the Jap 'Geisha Parrot', and the Louisiana 'Shrimp Creole', inter alia." *ED: There are four photos, two are full page size and two half page. 'Dewful' is also repeated on the cover and the two flowers shown appear to be life size and show great detail. An article accompanies the photos describing iris types that can be grown in the U.S., but the second full page photo shows a large bed of bearded iris in a garden in England.*

WELCOME TO NEW MEMBERS

ED: This list is to be used in conjunction with the one printed in SIGNA 29 on p. 1020. There has been some 10% increase in our membership since that list was printed only six months ago and this is an attempt to aquaint SIGNA members with each other. The list is made up of bits and pieces as I received names and without doubt someone has been missed. The change in secretaries due to the illness of Grace Carter has confused things also, but this will be cleared up in time. It should also be noted that there are five names at the bottom of the title page that are in addition to those on p. 1020.

Anthony Cacozza	1121 Dunkey Ct., Sycamore, Ill. 60178 U.S.A.
Donald R. Peterson	1870 - 25th Ave., Columbus, Neb. 68601 U.S.A.
Byron Aarstad	165 Alexander Ave., Daly City, Calif. 94014 U.S.A.
Mrs. John S. Gains Jr.	P.O. Box 883, Rome, Georgia 30161 U.S.A.
Patrick DeLozier	1212 W. Short, Independence, MD 64050 U.S.A.
Mrs. C.B. Rowland	113 Laurel Ave., Goose Creek, S.C. 29445 U.S.A.
Mrs. Ira M. Baker	Route 4, Box 373-A, Morgantown, W. Va. 27505 U.S.A.
Mrs. Lloyd F. Nelson	P.O. Box 78. Balfour, N.C. 28706 U.S.A.
Mrs. W.C. Nelson	109 South Carolina Ave., Hendersonville, N.C. 28739
Prof. Elena Naugini	Istituto Botanico, Della Universita Di Florence Via La Pira, N. 4, Florence, Italy.
Miss G. Fair Blackmon	5301 Broadway Ave., Fort Woth, TX 76117 U.S.A.
Mrs. Robert Dillard	Bolton Road, RD 2, Box 493, Harvard, Mass. 01451 U.S.A.
Dorothy S. Behrends	442 Orpheus Ave., Encinitas, Calif. 92024 U.S.A.
Harriet Segessemann	380 Crescent Dr., Franklin Lakes, NJ 07417 U.S.A.
Mrs. W.B. Melnick	R 6 Box 347A, Jackson, TX 38301 U.S.A.
Mrs. William L. Smith	427 Rockhill Dr., San Antonia, TX 78209 U.S.A.
Brooklyn Botanic Garden (Library)	100 Washington Ave., Brooklyn, N.Y. 11225 U.S.A.
Ton & Gloria Little	800 Cielo Circle, Las Vruces, NM 88005 U.S.A.
Richard J. Sloan	2607 Louise Ave., Arcadia, Calif. 91006 U.S.A.
William A. Shear	Route 1, Box 450, Farmville, VA 23901 U.S.A.
Dr. M.M. Wood	132 Arkwrights, Harlow, Esses CM 203 LZ England
Harry Melchior	STR D.B 13 Jan 85, 6620 Volkingen 4, West Germany
Mrs. C.G. Redgate	RD 3, Ohaupo, New Zealand

Maxwell Neville	48 Livingstone St., Nth-Coburg 3058, Victoria, Australia
Tom. Davis	Apartado Postal F. 1291, San Luis Postal SLP, Mexico
Cherie Lowe	8119 Ranchview Dr. NW, Calgary, Alberta T3G 1G6, Canada
Gail Neiman.	119 E. Spencer Rd., Devon, PA 19333 U.S.A.
Eric & Robert Tankesley-Clarke	Rt. 1, Box 246, California, MO 65018 U.S.A.
Michael J. Wynn	1820 Rowland Ave. NW, Canton, Ohio 44705 U.S.A.
Dr. C.A. McCaughan	20041 - 10th Ave. NW, Seattle, Wash. 98177 U.S.A.
Charles Haynes	777 E. Fairmont Ave., Fresno, Calif. 93704 U.S.A.
Donna M. Purdum	705 Boyer Circle, Davis, Calif. 95616 U.S.A.
Pincus, Mr. Edward L.,	11813 - 100th Ave. NE, Kirkland, WA 98033 U.S.A.
Emma Kyser	4931 Walnut, Kansas City, MO 64112 U.S.A.
Virginia Rossen	P.O. Box 665, Jackson, CA 95642 U.S.A.
James Fackert	P.O. Box 430, Hamburg, MI 48139 U.S.A.
Pamela Harper	219 Robanna Shores, Seaford, VA 23696 U.S.A.
Eric Beckwitt	Box 530, North San Juan, CA 95960 U.S.A.
Mary Pat Engel	136 Pickford Ave. Kenmore, N.Y. 14223 U.S.A.
Gus Seligman	515 Townsend Terrace, Las Cruces, NM 88001 U.S.A.
Mrs. Joe L. Browne	2438 Ozark, Joplin, MO 64801 U.S.A.
Kingwood Center	900 Park Ave. W., Mansfield, OH 44506 U.S.A.
Mrs. Wesley Tiffney	226 Edge Hill Rd., Sharon, MA 02067 U.S.A.
Garvan, Mrs. Francis F. Jr.	308 Bellaire Dr., Hot Springs, Ark. 71901 U.S.A.
Hauksdottir, Carolly	2501 Hemlock Dr., Visalia, CA 93277 U.S.A.

EDITORIAL COMMENTS

Bruce Richardson

This will be the last issue of SIGNA that I will be editing, due in large part to failing eyesight and difficulty in reading the copy for typing. Age and the need to cut down is also a factor. The success of SIGNA over the past few years is also increasing the amount of work required to publish it - a 50% increase in membership over the last two years alone - and it might be of interest to note that the volume of paper used for this issue is 16 times that of No. 1 (although that issue was reprinted twice). Thus it was fast approaching the point where the work load of publishing SIGNA had to be shared and the eye ailment has only brought it to be a bit sooner than was inevitable. Joan Cooper will be doing the editing and arranging to get the stencils made and sent here for printing as previously done and they will be assembled and mailed from here as before. One further change should be noted. The bulk of the Back issues have been held here and mailed from here as required, but now we have a new PUBLICATIONS CHAIRMAN in Alan McMurtrie of Willowdale, which is near here and soon all the back issues will be transferred there for mailing.

Due to new postal rate categories in Canada this issue is the largest that can be sent at the 150g weight to keep our costs near what they had been previously. Actually there has been a 41% increase in the rate to the U.S. as an example.

Species iris are getting to be very popular in many parts of the world and I am particularly pleased to receive a copy of the SPECIES SECTION OF THE NEW ZEALAND IRIS SOCIETY. A fine publication put together from original articles by their members and a reprint from SIGNA #5 which came from excerpts of Robin #4, 1968.

Our most sincere thanks to the members of the NORTHERN ILLINOIS IRIS SOCIETY for their gift of $100.00 towards our cause. We are doubly grateful for such donations in these times of increasing printing and postage costs, for they help to ensure the continued success of our publication.
ED: This item arrived just as the last stencil was being cut, hence at the end.