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William Mohr

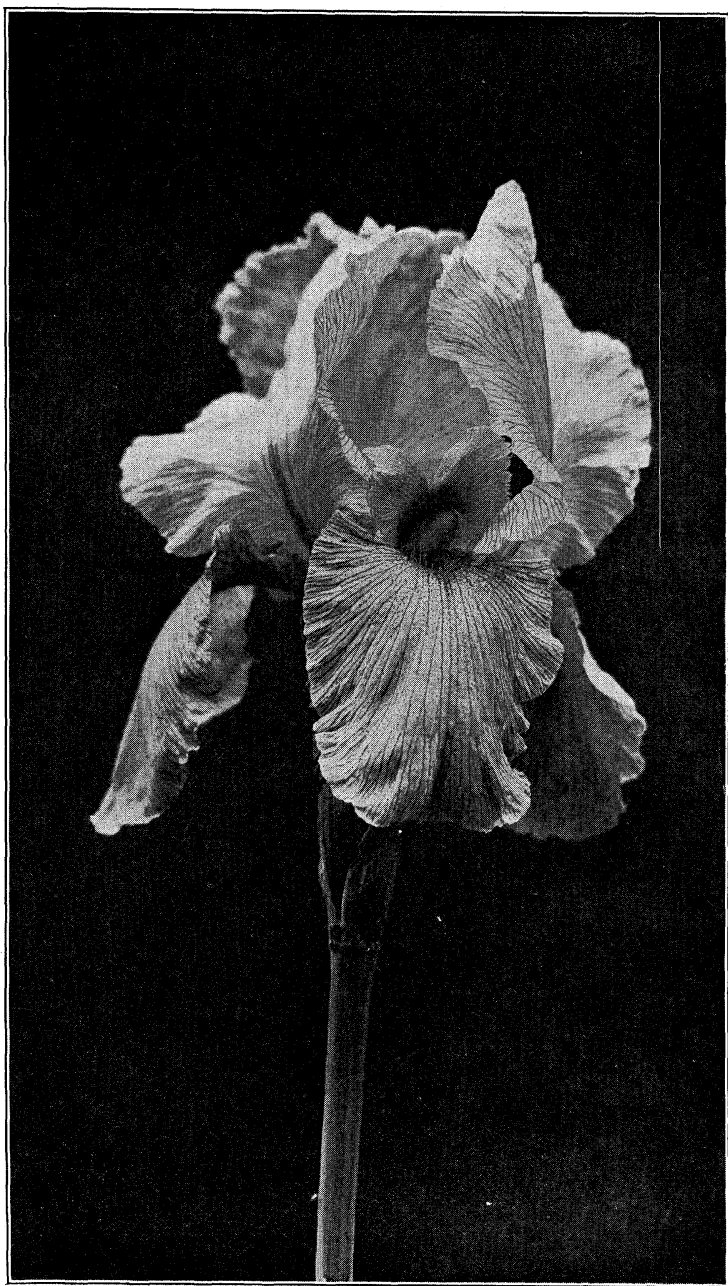
Edited by the Secretary

R. S. STURTEVANT

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We are indebted to M. Hoog and Mr. Mitchell for our illustrations



Parisiana x Gatesi, (Mohr)
S. 4 x 3 1-2 in. F. 3 1-2 x in. Height 21 in.,

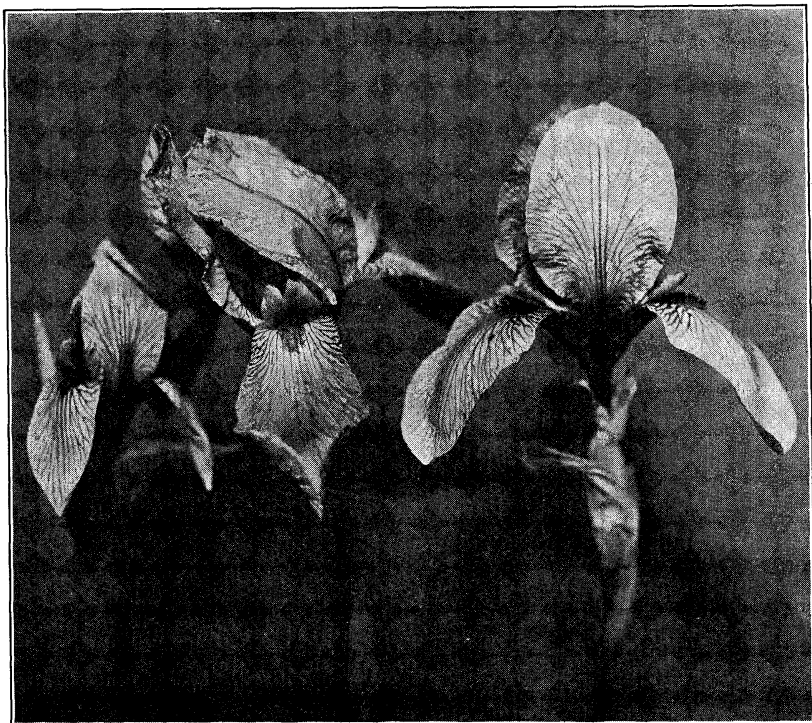
William Mohr and His Work

Sydney B. Mitchell

At the very hour when the nation was paying its last respects to its dead president in his native town, I was attending the funeral of William Mohr and his wife, Frieda Mohr, who had a few days before been instantly killed by an express train which struck the automobile in which they were riding with some neighbors. Of a party of six, but one, little Marian Mohr, their only child, escaped, and though seriously injured she will undoubtedly get better. To me the news came as a great shock in the loss of a man of whom I had become very fond; to all lovers of irises it means the passing of an earnest and inspired worker with their favorite flower, a hybridizer from whom much was to be expected and with whose death much of his work must stop.

William Mohr was born on the ranch on which he spent his whole life. His father had come from Schleswig-Holstein in 1852 and had bought the land from the old Spanish Castro family, whose huge rancho antedated the Americans. At the time of his death he owned about four hundred acres around Mount Eden, a little hamlet between the hills and San Francisco Bay about twenty-five miles south of my home in Berkeley. Here he lived a simple, pleasant life, for his marriage had been a happy one and his wife was just the cheerful, energetic mate needed by so shy and retiring a man. Most of his ranch was rented out to vegetable growers, who like the rich valley soil, but he kept about sixty acres on which to grow his own strains of wheat and barley and the fruits and flowers of which he was so fond. Two or three acres around the big ranch house were his garden, not a show place nor one developed along landscape lines, but a glorious garden for the plant lover and a fine experimental ground for his hybridizing. Mr. Mohr was 52 at the time of his death and for forty years he had been growing flowers, so that a visit to his ranch at almost any time of year was interesting. He had fine daffodils and was raising even these from seed. He had many seedling Darwin tulips, including a pure white one over two feet high. His strain of polyanthus primroses was the most vigorous I have ever seen and was gradually developing very large flowers in fine colors; every year showed an improvement. Huge wistarias climbed over the house and pergola; Clematis montana in various shades of pink, his own seedlings, grew up into the tall palm trees, and fine tree peonies, obtained years ago from Japan, flowered each year in a shady place near the house, lilies blossoming among them in midsummer. In April there were hundreds of South African bulbs in bloom, ixias predominating, and in May colochortus were plentiful. It was there I first saw eremurus in bloom, and many alstroemerias, among others A. Chilensis, from seed in hundreds, giving a wonderful effect as of Ghent azaleas, in the half shade of fruit trees. He was always fond of bulbous flowers and had in past years imported many from Van Tubergen, such things now rarely seen here as Milla biflora, Sternbergia lutea (the "lily of the fields" of the Bible), and Nerines. He grew Amaryllis and Crinum and had crossed them but the hybrids have not yet flowered.

He had always been fond of raising things from seed and getting bulbous plants in that way, an uncommon habit in America. His interest in gardening began when he was a child, and long before he took up irises he had done much crossing of carnations and Lady Washington pelargoniums, but diseases destroyed the first and a couple of bad frosts killed most of the latter. Practically all the wheat he grew was



Korolkowi, Mesopotamica, Korolkowi x Mesopotamica

the result of his own crosses and selections, and was sold to neighbors for seed.

His work with irises began about ten years ago, when he had only a few of the then quite ordinary bearded varieties, but he soon imported Regelias and Oncocyclus and their hybrids and began work on them, and to improve his strictly bearded irises he got Mesopotamica, Cypriana, and other Asiatic species. For years he worked away on this flower by himself as he had done with others, and during that time got some quite remarkable results, but with the added stimulus of letters from Miss Sturtevant, Dr. Berry, and others, and the visits which I from my close proximity was able to pay him he became more absorbed in this particular flower, and at the time of his death was raising thousands of seedlings in a wider range than any other hybridizer whose work I know, Reglio-cyclus, Regelias and Oncocyclus crosses with pogonirises, bearded irises of all classes, Spuria, and crosses of Sibiricas and our native irises.

His crosses between Regelias and Oncocyclus gave nothing remarkable. He merely followed in the footsteps of Sir Michael Foster and G. C. Van Tubergen, and though I have seen many beautiful seedlings of this class in his garden they show no great advance in color range or vigor. They were chiefly useful in extending the season and in giving him pollen and seed bearers. He grew them in much raised beds of almost pure river sand, where with a little attention to dusting with sul-

phur after a raw wet night he kept them growing and blooming fairly well. The summers here are quite rainless, so there is no problem of drying off. In his constant effort to add vigor, to get real garden plants, he attempted to combine them with pogonirises. Van Tubergen's *Iberica macrantha* cross, henceforth referred to as *Ibmacrantha*, proved to have potent pollen and gave many attractive seedlings when crossed with *Oncocyclus*, but with the reduction of the pogoniris blood to a quarter the seedlings showed little vigor. Of all these I liked best a lovely Lorteti X *Ibmacrantha*, a huge flower with blue standards and netted falls of a bronzy red, much inclined to cinnamon. When *Ibmacrantha* was combined with pure bearded irises he found that most *Oncocyclus* characteristics dropped out, yet some resultant seedlings, notably a big red-violet *Oriflamme* X *Ibmacrantha*, is quite distinct and fine, and still another one where the *Oncocyclus* is only one-eighth bids fair to be one of the finest dark irises ever raised, according to one of our largest growers who happened to see it in flower.

Crosses of *Regelias* with bearded irises have given interesting results. Most breeders who have combined these have had to use a pumila or other dwarf for the bearded parent, with the natural result of short flower stems. Mr. Mohr was so favored in climate that he could and did use *I. germanica* and *Mesopotamica* in his crosses with *Korolkowi* with vigorous resultant hybrids. Carmelo is best known, as it was the first such cross, a flower of unusual grey-blue borne freely on a plant of distinctive growth. But there are others even more novel in their coloring—Bellorio, with narrow mouse colored flowers on a well branched stem thirty inches high is absolutely distinct from anything I have ever seen. I have in mind also a lovely crushed raspberry flower, not however as vigorous as the above and perhaps not a commercial possibility. Among the crosses are some fine big flowers with shades of grey-blue found in no other flower except *Salpiglossis*. Some of these are as large as *Mesopotamica*, and though in many the stems are rather too flexuous, the flowers are of good shape and excellent for cutting.

His few successful crosses between an *Oncocyclus* and a pogoniris have not all flowered, but such as have are entirely distinct from those of Sir Michael Foster. The outstanding one is a *Parisiana* X *Gatesii* which was first exhibited at the show in Oakland last spring under the tentative name of Jubileo. This will in all probability be renamed William Mohr, as it was his greatest pride. The ground color of this noble flower is white, finely veined with manganese violet, the standards faintly flushed lilac, a warm soft effect very different from the dark sombre flowers which have generally come from *Oncocyclus* crosses. Actual measurements of a flower the first year it bloomed were—standards $2\frac{3}{4}$ x $3\frac{1}{4}$ inches, falls 2 x 3 inches. The shape is fine and stems are quite rigid and in favorable locations nearly 2 feet high. Unlike the pure *Oncocyclus*, the stems bear two flower heads, each of which develop two flowers, and as they are of fine heavy texture the season of bloom is quite long. Under Californian conditions the plant grows well and makes reasonable increase. It has wintered in one eastern garden but has yet to flower outside its native state. When exhibited last May it seemed in the eyes of many enthusiasts the finest iris flower they had seen.

It is not improbable also that there will be interesting posthumus seedlings of *Oncocyclus*-pogoniris parentage, for seeds of such crosses are very slow to germinate and the seed beds contain many still unsprouted. Mr. Mohr certainly satisfied himself that *Oncocyclus*-pogoniris seedlings are not necessarily sterile. It was through such combinations that he hoped to get new colorings in plants of vigor and permanency.

His work among the bearded irises went back several years, and a less conservative breeder would certainly have named many of even his earlier seedlings. In general he did not care to go any further with seedlings which did not contain enough *Mesopotamica* blood to give large flowers and tall branched stems, yet he did raise some desirable things among the smaller but hardier sections. Prince Lohengrin (Juniata X Lohengrin) is a real improvement over Lohengrin, and Ramona and Silverado (sister seedlings of Juniata X Pfauenauge) are new and attractive blends. Two plicata seedlings he particularly liked were a creamy white of which the standards are quite distinctly edged yellow (this is to be called Gaviota, the Spanish for Seagull), and a pallida whose pale lavender ground is distinctly tinted with pink and darker lavender.

It was, however, with *Mesopotamica* seedlings that he excelled, as he found crosses with it as a parent gave a certain proportion of flowers of fine size and shape, often on tall stems, sometimes branched so low and widely as to suggest candelabra. With Juniata it gave Conquistador, with Parisiana it gave Balboa and others, with Oriflamme the biggest lavenders and mauves I have yet seen, and with Eldorado a wide range of coloring including one which is somewhat like Asia yet distinct enough to be named—Coronado. Kashmir White and Miss Willmott are perhaps not the best parents for irises to be grown in cold wet climates, but they proved to have valuable qualities as parents and even in the first generations gave such distinct lavenders as Marian Mohr and Santa Barbara, the former a pale lavender of beautiful finish, the latter the most popular pale "blue" iris in our own garden last season.

Caterina was used to a lesser extent, but enough to give two seedlings of value, one pure white, another with just a flush of pale blue on its white ground. The former has been flowered in Massachusetts and seems even better than in California.

Last year there were many second generation seedlings from *Mesopotamica*, that is in many cases seedlings which have only twenty-five per cent of that variety in their make-up, so will be presumably quite hardy everywhere. From many hundreds I remember best a few which retained the large flowers and tall branched stems of *Mesopotamica*, but to which the other parents had given stiffness of stem and fine colorings in a wide range. I particularly admired some excellent light red-violets, purple pinks, and distinct blends, very real advances over any previous varieties in their color range, many of them unmatched in shade by any variety I know. The variety this year was amazing, and selection of the best among them will take some time, where so many were large and outstanding.

All these were really by-products of his attempts to get large yellow bearded irises, the aim of nearly all his crosses of recent years. Though nothing which has yet flowered showed the goal as reached, several interesting steps toward it were made. His climate and large garden of varying aspects allowed him to cross yellow pumilas with Trojana and *Mesopotamica*, and in a majority of cases he got yellow progeny. Soledad is as yet the only one named, but last spring some *Mesopotamica* seedlings first flowered, the largest yellows I have seen but still rather pale in color. Bosnia *Macrantha* gave some fine heavy-textured cream flowers, and one Conquistador seedling 3½ feet tall was a pale yellow of Caterina type, the most promising of thousands of bearded irises which he has raised. He had hopes of further progress among the many seedlings due to flower next spring. He had been forcing these on to make sure they would bloom the first season after germination, and already one yellow has flowered prematurely this fall from a seed sown



Iris Marian Mohr and herself, May, 1918
Large flower 7 inches long.

last fall. Albinos have been appearing quite generally, and I shall be much surprised if the next season does not show finer whites than we have yet had, and plicatas of part Mesopotamica parentage are also due.

Some mention of his methods may interest other breeders. He preferred to make his crosses in the morning if possible, for a bright sunny period following this operation seemed to favor the setting of seed. This last was collected in August, dried in paper bags, and sown in September or October in rows in shallow sandy seed beds. A few seedlings would usually come up in the fall, but most appeared next spring. When a couple of inches high they would be put out in rows a foot apart where they were to bloom. Like most breeders he found certain parents,—seedlings not in themselves worth naming,—to be valuable because they seemed to cause variation. Plicatas, or seedlings having plicata parentage, impressed him as "letting go" easily; they gave many of his most interesting seedlings. He came to believe that the experience of others working in different climates was not necessarily of value to him, for in some cases, as with onco-pogoniris crosses and in the use of Eldorado as a parent, he got excellent results which might have come earlier had he not allowed himself to be influenced by opinions based on data not of universal application. Though without formal scientific training, by reading and experiment he came to have a real scientific attitude toward his breeding, an acceptance of his ignorance of the factors making for variation, combined with a perfect willingness to try all likely lines. He was a man of singularly modest character, always unready to praise his own productions, always unwilling to judge adversely those of other breeders. His feeling that even the best of today's varieties were to be superseded by finer ones made him slow to name any of his own seedlings. If even the finest ones were not good parents he soon lost interest in them.

It was to the future of his favorite flower that he always looked, so that to me there seems a peculiar pathos in that he should have been cut down while still in his prime and not permitted to see many of the results of his own good work.

Notes on Hybridization

From letters of William Mohr

From boyhood Mr. Mohr had been growing flowers. He had crossed carnations and Lady Washington Pelargoniums and even recently had worked with primulas, nerines, tulips, and hybrid wheat as well as with the irises. It was, however, in 1919 that a visit from Mr. Mitchell and Mr. Berry gave a new impetus to his iris experiments and from that date there has been an active correspondence with Miss Sturtevant on iris genetics.

In response to a previous suggestion that Gatesi and Lorteti should prove good parents as well as entirely untried ones, he wrote in 1919 that he had secured a few seed before the parent plants had succumbed to an unusually wet winter. At that time there were some 400 pogon seedlings, 100 apogons, and about 130 of regelia or oncocyclus parentage in his seedbeds and his collection contained an unusual variety of species and hybrids of the latter classes. Already he was striving for tall, large flowered yellows and had two of Trojana x yellow pumila parentage that were promising.

Kashmiriana had been used liberally and in 1920 the first generation produced such small, common, lavender flowers that it was given up until in F₂ some years later a fair proportion of whites appeared, some of them with a creamy tint at the haft. In these early years mesopo-

tamica had been used with varieties like Juniata, Parisiana, Iris King, Leda and Pfauenague, and these together with Trojana, germanica, cypriana, Carthusian and Caterina appear again and again in the records, often in combination with Korolkowi, Susiana, Lorteti, Gatesi, even Lady Lilford, and particularly with Ib-macrantha, itself an Onco-pogon cross.

In 1920 his seed crop numbered 845 and he mentions Lorteti x Ib-macrantha seedlings and a cross between Kororkowi and mesopotamica with good sized blooms veined somewhat like a Salpiglossis and with a similar sheen. Mesopotamica x Ib-macrantha had given six inch blooms on a well-branched stem, and trojana x the hybrid a slender 12 inch stalk.

The seed was planted in raised beds, four inches apart in lines and carefully recorded. For example in 1921 he mentions the germination of oncocylus and regila x pogon seeds, a few from the 1918 planting, more from that of 1917, and one each dating from 1914 and 1916. I was surprised to find reports of fertile pollen on the Regliocyclus varieties Thetis, Beatrix, Charon and Medusa, and also on his own hybrids of Lorteti x Ib-macrantha, Iberica x Ib-macrantha, and Korolkowi x germanica. Lady Lilford had also proved fertile tho the seedling was lost. Korolkowi x germanica (Carmelo) and x germanica major have proved vigorous not only in California but in Massachusetts and Holland. Mesopotamica x Susiana was thrifty; Beatrix x Susiana produced 18 flowers to the plant; Medusa x Ib-macrantha flowers of iberica form some creamy and slightly veined and others brownish selfs. Parisiana Gatesi was proving not only fairly thrifty, but Mr. Berry, Mr. Mitchell, and others considered it the loveliest Iris flower they had ever seen. I shall hope that this year's one seed will thrive. The mesopotamica x Ib-macrantha seedlings are particularly distinctive, often three feet in height and of curious blue-tones, grey-lined.

Altho Mr. Mohr reported that the pollen of these onco-regelia things often spoiled before the anthers opened his success with so wide a range of parents extends the range of possibilities far beyond what breeders in less favorable climates have considered at all possible. It becomes increasingly apparent that we do not understand the conditions which control the viability of pollen.

These records, however, do not reveal Mr. Mohr's continual efforts towards the production of tall, large flowered yellows. Many crosses were made with this in view both among his own seedlings and with Shekinah and others from Miss Sturtevant that promised yellow progeny. In 1922 he wrote "Our seedlings did not bring us anything strikingly unusual but perhaps there may be a few good ancestors among them. Mesopotamica x Yellow pumila gave pale yellow flowers of fair size; 30 in. Trojana x yellow pumila 50% pale yellows with 30 in. stalks, Tro-Celestial a pale yellow with very long falls. There is much room for improvement, in all of the above especially in substance and color."

In 1923 we have more notes on yellows. "((Dalmatica x Prestige) x (Juniata x mesopotamica)) gave a pale creamy yellow with large bold flowers of good form on branching stems about three and a half feet in height. (Bosniamac x meso.) x Marian Mohr gave large pale yellow flowers but with clubbed stems only 30 inches high. Soledad x (Tro-Celestial x meso.) also came with club stems but the flowers were pale yellow, large and of good substance. Tro-Celestial x pumila gave light lemon flowers of good size and fine form but only 30 in. in height". These were but a few of this year's yellows that prove the steady progress towards the ideal. A number of them contain a strain of Miss

Sturtevant's work in the same direction and it is most fortunate that Mr. Mitchell is not only familiar with Mr. Mohr's work but plans to continue it. With a 1923 planting of some 2100 seeds the future should hold much in store for us.

The following are odd notes that should prove of interest to breeders. Mr. Mohr was most retiring and looked upon his seedlings merely as steps towards the desired goal. For a number of years now Miss Sturtevant and I had urged him to introduce a number that had proved among the finest things in our garden, but he wished not only to introduce only those of the highest standard, but to introduce them at such reasonable prices that all might share in their beauties. I am thankful that the stock of some of his earlier varieties made this possible before his death. The iris growers in the north may have difficulty in growing many of mesopotamica parentage, but we have found them of outstanding quality.

(Caterina x Iris King) x Ib-macranthe, S. bluish; F. copper shaded.

Kashmir White S. x (Juniata x Mithras) an almost exact Lent A. Williamson.

(Juniata x Jacquesiana) x Shekinah gave a whole batch of yellows and blends.

Tectorum alba x pogon has set seed.

Stolonifera has set seed, but never sprouted.

Iberica ochracea x Ib-macrantha pink lavender flushed standards and falls heavily mottled brownish maroon on a yellow ground.

Lorteti x Charon gave (some 32) neutral brown-black flowers veined darker and a dark signal blotch on the falls.

Hoogiana x Conquistador (a 6 ft. seedling of Juniata x mesopotamica) should give some new blues.

(Juniata x Leda) x Rose Unique gave various shades of lavender-pink flowers of good size and most of them 2½ to 3 ft. high.

Caterina x Iris King gave dull blue flowers of varying shades, some with lighter edges and rather weak stems.

Juniata x Iris King gave flowers of purplish blue with brownish shadings on the hafts. Eldorado x mesopotamica gave blends but usually flexuous stalks.

SPANISH AND ENGLISH IRISES

(The Xiphium Group)

There seem to be no American sources of information concerning this group and I have selected passages from "Bulbous Irises" by Sir Michael Foster and from "The Genus Iris" by W. R. Dykes.

Mr. Hoog emphasizes the point that to ensure good flowering the English Irises should be planted as early in the fall as possible, preferably in early September. As imported bulbs rarely reach us before mid-October this recommendation may explain our lack of success in this country.

This group of irises is markedly western and European, the Spanish irises with headquarters in Spain, Portugal and Algiers, but ranging into Southern France and Italy, the English irises from the Pyrenees. There are six species, xiphoides, xiphium, juncea, Boissieri, filifolia, and tingitana, but of these juncea and Boissieri are rarely grown in this country and filifolia and tingitana do not sufficiently differ in appearance from the many Spanish and English varieties to secure prominent notice.

"The differences between these last two are many and striking. The foliage in the English irises is much broader than in the Spanish irises, and while the latter often "spears", and with me always does so in late autumn, the shoot appearing as an awl-like spike, the latter does not