

## CONSERVING RARE *IRIS* SPECIES

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ABSTRACT - In rare *Iris* species, there are problems of conservation and estimation. Other difficulties with such species are germination and repatriation to the wild state in regions where they have become extinct.

KEY WORDS - Rare Irises, conservation, activity Russian group

### INTRODUCTION

The problem of conservation of rare *Iris* species is an important and difficult one. Rare species must be identified, and their seeds, bulbs and rhizomes collected, without damage to native populations. Other difficulties with such species are germination and repatriation to the wild state in the regions where have become extinct.

Long experience of Dutch companies, English gardeners and botanists, followers of the famous iridologist W.R. Dyks and more recently work by the Canadian McMurtrie have shown that it is sometimes possible to introduce rare forms of *Iris* species to countries with a climate not suitable to the natural needs of these plants. Historically, an experiment by Edward Regel resulted in successful cultivation in St. Petersburg of many species of *Oncocyclus*, *Juno* and *Iridodictyum* up to the end of the nineteenth century. But the same experience shows that without concrete alteration of such species this success may be ephemeral.

To conserve rare species in their primary form, it is necessary to find corresponding asylums or as botanists say, refugia. In this respect botanical gardens of the USA have the most favourable possibilities: it may be noted that the well-regulated work of the botanical gardens of the former USSR (there were more than 100 gardens) is now in a very poor state after the USSR failed. Similarly, Dutchmen who became famous because of their skill in mastering the richness of the world flora, weakened their position when the Tubergen firm was lost.

*Iris* societies of Europe, America and Australia undoubtedly appear to have rich reserves in developing rare forms of wild flora. Many collectors achieve

excellent success in collecting and developing rarities of the family *Iridaceae*. For example, Maurice Boussard (France, Verdun) and Yanis Rukshans (Latvia, Riga) achieved great success in collection and cultivation of rare *Iridaceae*. The botanist Wendelbo also collected such rarities as *Juno cycloglossa*, which help us to understand many of secrets of the mysterious genus *Juno*. In Rukshan's collection, in addition to rare species of *Crocus*, *Alatavia winkleri* (= *Iridodictyum winkleri*, *Iris winkleri*), was collected in Tien Shan in 1997. Previously, many botanists considered this species to be extinct.

Literature on *Iris* is so rich that it forms the basis of the science iridology. But among this literature there are few books devoted to the problem of rare Irises. There is a lack of an annotated list of species, subspecies, and populations of Irises which need to be immediately saved. Such a list should include the characteristics of the rare *Iris* species, with considerable illustrated information; and of course, reasons must be given for referring the species to the category of a rarity. Texts about rare species should not only reflect the useful properties and localities of these species, but must also be written in a popular manner, in order to arouse in readers a desire to join themselves to the generous activity of saving natural rarities. The first attempts in this direction appear to be two of my articles written for the *Bulletin of the American Iris Society*. In these articles (Rodionenko, 1997), characteristics of two rarities *Iris timofejewii* Woron. and *Alatavia winkleri* were given a popular form.

It remains a priority to compile a general list of rare *Iris* species. With the help of a Russian Group organized by us, we have already made such a list for the flora of Russia and adjacent countries, which includes twenty *Iris* species.

#### FROM ST LOUIS TO ROME

No single *Iris* symposium has raised the question of rare wild Irises as the symposium in St. Louis in May 1995. One result of this was the organisation of the Russian group mentioned above. Botanists of ten cities took part: A. Lepechina, R. Murtuzaliev (Makhachkala University), G. Shevchenko (Stavropol Botanical garden), Mikheev (Pjatigorsk, an experimental station of the Komarov Botanical Institute), V. Doronkin (Novosibirsk Botanical garden), L. Mironova, R. Dudkin (Vladivostok Botanical garden), I. Popova (Kirgisia, Beshkek Botanical garden), Lu Enkhtuya (Mongolia, Ulan-Bator), M. Diev (Moscow, flower-grower); G. Rodionenko (head of the Group: St. Petersburg Botanical garden) and his assistant I. Makarova. In 1997 the Group made the following collections: M. Diev organized a collection of rhizomes of the northern Daghestan population of *Iris acutiloba* C.A. Meyer (*Oncocyclus*). A. Lepechina and R. Murtuzaliev collected rhizomes of *I. timofejewii*, which is almost extinct. V. Doronkin collected rhizomes of the rarest species *I. ludwigii* Maxim. A. Mikheev collected rhizomes of *I. humilis* Georgi (= *I. pontica* Zapal) in the Caucasus. As a result of these collections of two rare dwarf species of *Spuria* Irises, a possibility of their interspecific hybridisation arises. R. Dudkin was successful in finding in the Primorie region *I. mandchurica* Meissner, which is of great scientific interest. Lu Enkhtuya collected seeds of rare Irises in Mongolia.

## ‘ANCHOR’ SPECIES

As our long-term experience shows, when studying rare *Iris* species, especially in northern regions, species which are highly adaptive are extremely useful. Such species are rare in section *Oncocyclus*, but in section *Regelia* we found that *I. hoogiana* has successfully grown, flowered and fruited in the open in St. Petersburg Botanical Garden for over 40 years without winter cover. Other species of this section failed in the second or third year of cultivation in open ground. *I. hoogiana* Dykes and similar species were named by me as ‘ancoralis’ species (using the Latin word for anchor), as they may be brought far from their natural habitat, then after interspecific hybridisation, pull other related species into new environmental conditions. For 36 years we were unsuccessful in introducing Japanese cultivars to northern conditions until we used as a hybridisation partner a northern population of *I. ensata* Thunb. from the Vladivostok region as an ‘anchor’ species. Using plants of this northern rarity as the maternal parent, we obtained a series of forms absolutely resistant to winter conditions.

Another ‘anchor’ species is the rarest species of the Caucasian flora *Iridodictyum winogradowii* (*Iris winogradowii* Fom.). Being a high-altitude species, it is well adapted to our northern conditions. It was collected in Georgia on the mountain Lomtis in 1969 and since then has been growing well in our Botanical Garden, and is a useful hybridisation partner. Moreover, we were able to repatriate bulbs of this species to the Alpine zone of the Gagra range in 1974. On this range this species had been been collected 50 - 70 years ago by many botanists, but then vanished completely, after which it was found in Western Georgia only on Lomtis.

There are also taxa of the genus *Juno* with high adaptive properties: *Juno caucasica* (= *Iris caucasica* Hoffm.) and *J. rosenbachiana* (= *I. rosenbachiana* Regel.) were grown successfully by Edward Regel in the nineteenth century in St. Petersburg.

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