

Notes on *Crocus gilanicus*

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Abstract

Crocus gilanicus MATHEW is a recently described species from Iran. Since the original description was made, more material has been gathered and from this it is possible to add details of the leaves, the chromosome number and karyotype studies. The species is related to a group of species around *C. kotschyanus* C. KOCH.

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یاد داشتی درباره *Crocus gilanicus*

از: براین ماتیو و خانم برایتون

خلاصه

گونه *Crocus gilanicus* MATHEW یکی از گونه‌هایی است که اخیراً "از ایران شرح داده شده است. از موقعی که شرح اصلی در مورد این گیاه داده شده نمونه‌های بیشتری جمع آوری و بهمین منظور امکان توضیح جزئیات بیشتری را جمع به برگها، تعداد کروموزوم و مطالعات کاربوتیپ (karyotype) این گونه وجود دارد. گونه مذکور وابسته به گروه گونه‌های نزدیک به *C. kotschyanus* C. KOCH میباشد.

Crocus gilanicus MATHEW in MATHEW & WENDELBO (1975) was described from flowering material gathered by A. SHIRDELPUR between Heroabad (Khalkhal) and Asalem on the border of the provinces Azarbajejan and Gilan in October 1973, under the number 10486. Since the species has hysteranthis leaves it was not possible to include any details of them in the description, and as no living material was available at the time their chromosome constitution was also unknown. However, in 1974 SHIRDELPUR and WENDELBO collected more specimens, both in the type locality and in Gilan, west of Rustamabad in the Sefid Rud valley, under the numbers 14910 and 14870 respectively, and sent living material to the Royal Botanic Gardens, Kew. By the spring of 1975 these corms had produced new roots and mature leaves making it possible to count the chromosomes, to study the karyotype and describe the leaves.

Crocus gilanicus is apparently most closely related to the three Turkish species *C. kotschyanus* C. KOCH, *C. suwarowianus* C. KOCH and *C. vallicola* HERB. The latter species is easily distinguishable from the rest in having acuminate tips to the perianth segments and a much elongated bract clearly exerted from the sheathing leaves. *C. vallicola* and *C. gilanicus* however share the character of possessing a solitary bract with no accompanying bracteole, but in the latter the bract is very short making it invisible or scarcely visible above the sheathing leaves. Both *C. kotschyanus* and *C. suwarowianus* possess a small bracteole in addition to the short bract. The flowers of *C. kotschyanus* are normally lilac while those of *C. suwarowianus* and *C. vallicola* are creamy-white, although sometimes veined with purple, and all three species have yellow blotches at the base of the perianth segments in the throat. *C. gilanicus* has flowers which are nearly white with a very faint tinge of lilac and has no yellow in the throat.

The leaves, which remain more or less dormant after flowering until the spring have the characteristic cross-sectional shape of this group of species, in which the keel on the abaxial surface is almost as wide or wider than the upper, adaxial, surface

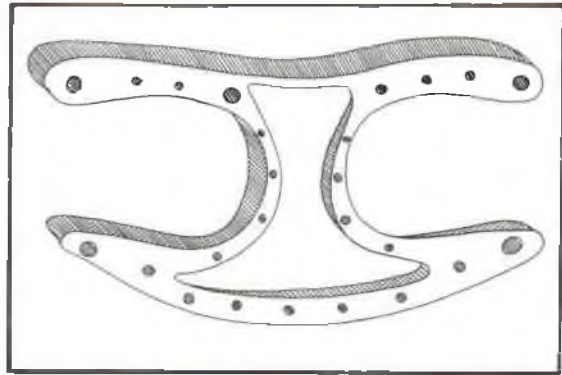


FIG. 1 Thick section of leaf of *Crocus gilanicus*, x 30.

(fig. 1). At maturity they are only about 4 cm in length and about 2 mm wide, and are few, i.e. up to four, in number. Because of this strong cross-sectional shape and their short length the leaves of *C. gilanicus* are rather stiffly erect.

C. gilanicus has a chromosome number of $2n=24$, the karyotype consisting of one pair of large metacentric chromosomes, one pair of small metacentrics and ten pairs of sub-terminal chromosomes (fig. 2). The associated species all have different chromosome constitutions which differ from *C. gilanicus* and between themselves. *C. vallicola* is $2n=8$ with a complement consisting of one pair of large metacentrics and three pairs with subterminal centromeres. *C. kotschyanus* is both $2n=8$ and $2n=10$ whilst *C. suwarowianus* is $2n=20$. The karyotypes of these two species consist mostly of acrocentric chromosomes with short arms of differing size. These chromosomes are smaller in size than those of *C. gilanicus* and *C. vallicola*. The large metacentric pair present in both the latter species is not present in *C. kotschyanus* and *C. suwarowianus*.

C. vallicola ($2n=8$) has the karyotype which is most similar to that of *C. gilanicus* in as much as the eight chromosomes of *C. vallicola* can be seen in the karyotype of *C. gilanicus*. However, a direct comparison between these two species is difficult. They might possibly have the same basic number of $x=4$ but *C. gilanicus* is obviously not an auto-



FIG. 2 Karyotype of *Crocus gilanicus* ($2n=24$).

hexaploid based on the *C. vallicola* chromosome complement. Past hybridizations possibly with subsequent polyploidy cannot be discounted as giving rise to present constitutions.

A more detailed analysis of these four species will be the subject of a future paper.

Reference

MATHEW, B. and WENDELBO, P. 1975. Iridaceae in K.H. RECHINGER. *Flora Iranica* Lfg. 000: pp. 00 – Graz.