

A DETAILED STUDY OF CROCUS SCARDICI - SERIES.

ASBTRACT

Crocus is Chaldean name meaning `Saffron`. The alpine plants grow in alpine climate, which occurs at higher elevation and above the tree line. Alpine plants are not a single taxon, but many different plants species live in this envirement, most adopt harsh conditions and short growing seasons. These belong to sub-genus crocus, crocus scardici - series are closely related species and are difficult to separated taxonomically and have a complete cytology. Botany of crocus scardici - series, taxonomy of their species and their infraspecific taxa are presented, and their distribution, ecology and phenology, full description and chromosome counts are provided with key to their identification.

Key words crocus, geographic area, classification, chromosome, cytology and scardici - series.

INTRODUCTION

Crocus is a genus of flowering plants in its Iridaceae or Iris family comprising approximately 150 taxa.^{1,2} Mathew`s classification was based on three character states : (1) presence or absence of a prophyll (a basal spathe), (2) aspect of the style and (3) corm tunic, for 80 species,³ distributed mainly in the Mediterranean region.⁴ The species discovered since than have been integrated in to this classification, distributed sea (Portugal and W. Morocco), Europe to W. China and Mongolia. The center diversity of the genus in Turkey with more than 70 taxa and Greece with 33 taxa.⁵⁻⁸ The study shows `no support for a system of sections as currently defined`, although despite the many inconsistencies between Mathew`s classification and current hypothesis.⁵ Two section sub-divided into 15 series. Later, one more series was added⁹ and one series was moved to another section.¹

A species evolution is generally accompanied or followed by partial changes in the chromosome complement and there can be few genera where such a wide range of variation occurs. The variation is, however, difficult to deal with or without informations of breeding systems, hybridization potential and the production of hybrids. So far, it has only been possible to make a comparative analysis of chromosome number and morphology, but these differences and similarities can be significant, and may well indicate barriers to successful inter-breeding. Although similar karyotypes do not reveal the presence of symmetrical structural changes, it may generally be assumed that if the phenotypes are also alike, there is a probability that there are no barriers to gene exchange. If karyotypes are observably different than inter-breeding is less likely.^{4, 10-11} Such chromosome barriers are of obvious importance and can lead on the further divergene which may eventually give rise to acceptable species. The closely related species have been difficult to separate taxonomically and have also been found to be complex cytologically, and have been treated as the series.¹²⁻¹⁴ These physiological features have been discussed by the genus into a hierarchy of sub-genera, section and series of crocus scardici.

BOTANY

01. Domain	Eukaryota
02. Kingdom	Plantae
03. Sub-kingdom	Viridiaeplantae
04. Phylum	Tracheophyta
05. Sub- phylum	Euphylllophytina
06. Infra - phylum	Radiatopses
07. Class	Spermatopsida
08. Sub- class	Liliidae
09. Super-order	Lilianae
10. Order	Asparagales

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|------------------|-------------------|
| 11. Family | Iridaceae or Iris |
| 12. Sub - family | Crocoideae |
| 13. Tribe | Lxieae |
| 14. Genus | Crocus |

Genus crocus : **Herb** : small, perennial, cormous. **Corms** : oblate, covered with tunic. **Leaves** : few all basal, green, linear, adaxially with pale, median strips, base surrounded by membranous, sheath like leaves. **Aerial stems** : not developed. **Flowers** : emerging from ground, with peduncle and ovary subterranean. **Perianth** : white, yellow or lilac to dark purple. **Tube** : long, slender, segments similar, equal or sub-equal. **Stamens** : inserted in the throat of perianth tube. **Style** : 1, slender, distally with three to many branches. **Capsule** : small, ellipsoid or oblong - ellipsoid.¹⁵

Sub - genus : Anthers with extrorse dehiscence.

Section crocus : Scape subtended by a membranous prophyll.

Series scardici : Spring flowering. Leaves have no pale strips on the upper surface. Prophyll and bracteole present. Tunic fibrous - reticulate.¹⁶ The following species of crocus are induced for description :

Crocus pelistericus Pulevic¹⁷

It belongs to the group of bulbous and tuberous plants.

Common name : Species crocus, crocus.

Habit : Herb/ Forb. **Native climate** : cold winter with snow cover, cool with regular rain in summer. **Wild habitat** : Alpine tussock grass, moist or water running throughout the summer. **Distribution** : N. Greece, Macedonia. **Altitude** : 1900 m. **Corm** : tunic fine fibres netted. **Leaves** : 3-4, dull green, deciduous, simple, alternate, linear and sessile with entire margins, parallel venation, unusual not have pale stripe, appearing with flowers and persisting throughout the summer. **Flowers** : deep purple, glossy petalled, 6 - 8 cm. tall, cup-shaped solitary. **Throat** : white. **Styles** : whitish to orange - yellow, late spring. **Capsule** : loculicidal. $2n = 34$.

Phenology : Flowering : Autumn.

Characteristics : The species is little known in cultivation, having been described only in 1976. Special care is need to maintain it dormant. In this respect it resembles the allied crocus scardicus.

A hybrid with crocus scardicus has been produced in cultivation at Gothenburg Botanic Gardens. This plant is mountains were the summer is relatively short, this species retains its leaves throughout the summer. By the one set of winter a new shoot has developed which will produce the next seasons flower soon after the winter snow melts. The pattern must be duplicate the plant is to survive in lowland cultivation - a challenge in areas with worm dry summer has enablen growers in the south of England to grow and flowers this rare plant.

Crocus pelistericus seed pods:¹⁸ Like many crocus the seed pods remain under-ground for long-time after the flowers have faded. Eventually the stem : tallest as seed ripens, elongate, pushing these seeds pods up to shed their previous contents. If seeds at 1 went re-pot this basket and left few days in which time the stem grow by 7 cms.

Crocus pelistericus is never dormant in garden and leaves remain green well into autumn or even in this summer. The few roots, which can start to emerge as early as june, are well developed. After few years each corm will be surrounded by a cluster of offsets which are best removed to prevent congestion.

Crocus scardicus Kosanin.^{15, 19 - 24}

Common name : Crocus scardicus Koanin Ko?anin.

It belongs to the group of bulbous and tuberous plants. A very unusual crocus from the Sar Planina of Macedonia. The only crocus with a colour combination of golden yellow flowers with purple throat and tube. **Habit** : Herb/Forb. **Native climate** : cold winter snow cover, short moist summer. **Wild habitat** : short alpine turf, flowering near melting snow. **Distribution** : native mountain regions of Serbia, Montenegro and Albania. **Altitude** : 1700 - 2500 m. **Corm** : tunic finely reticulate. **Leaves** : 3 - 4, erect, up to 1 mm. wide, deciduous, simple, alternate, linear and sessile with entire margins and parallel venation, present flowering time and through out the summer, no white strip on upper surface. **Flowers** : yellow or orange in upper two third, purple in lower third and tube, 7 - 8 cm. tall, cup-shaped, arranged solitary. **Style** : yellow or orange, with a broadened and frilled top, late spring. **Capsule** : loculicidal. $2n = 22$.

Phenology : Flowering : Spring.

Characteristics : A difficult plant to maintain in cultivation requiring cool moist conditions during the summer and careful watering during the long period between the formation of the flowering shoot and the opening of the flowers. A. gritty, peaty compost is recommended.

It is important species in the middle of Balkan Peninsula. Its locus classicus (the source of the *Tearena Bistrica*) which, until recently, was the only one known in the literature, was supplemented by a number of near finds, which can be used as a basis for are limited.

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