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BOTANY, TAXONOMY AND CYTOLOGY OF NEW SPECIES *CROCUS BAYTOPI*

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ABSTRACT
The genus *crocus* consists currently of about 160 recognized species, small, corm bearing, perennial species having an old world distribution, primarily in mediterranean- west Europe and NW Africa to west China, with the center of species diversity on the Balkan Peninsula and in Turkey. Recent phylogenetic analysis proved several infrageneric units with in the genus *crocus* to be para or phyletic. In an attempt to arrive at a system of *crocus* that closely reflects species relationships, here phylogenetic, morphometric, geographic and nomenclatorial data for the species of narrower defined, monophyletic *crocus baytopi* series. *Crocus* series *baytopi* are closely related, and are difficult to be separated taxonomically and have complex cytology. Botany, infra-specific taxa, distribution, ecology, phenology, description and chromosome counts of *crocus baytopi* series are proved with key to their identification.

KEYWORDS: Crocus, Geographic area, Taxonomy, Chromosome, Cytology, Phenology, *Baytopi* series.

INTRODUCTION[1-9]
The genus *crocus* consists currently of about 160 recognized species occurring from W. Europe and NW Africa to W China, with the center of species diversity on the Balkan Peninsula and in Turkey. Mathew divided in to sub-genera (not supported recent phylogenetic research) and two-sections sub-section divided into 15 series. Later, one more series was added and one series was moved to another section. The species discovered since than have been integrated into this classification, distributed sea (Portugal and W Morcco), Europe to W china and Mongolia. The center diversity of the genus in Turkey more than 70 taxa and Greece with 33 taxa. The study shows ` no support for a system of section as currently defined, although despite the many inconsistencies between Mathew classification and current hypothesis`.

The species evolution is generally accompanied or followed by partial changes in the chromosome complement and their can be few genera where such a wide range of variation occurs. The variation is, however, difficult to deal with or without in-formations of breeding systems, hybridization potential and the production of hybrids. So far, it is 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 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 karyotype are observable different than inter-breeding is less likely. Such chromosome barriers are of obvious importance and can be 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.

TAXONOMY[10–12]
The taxonomic classification of the *crocus baytopi* series follows.

01.	Division	Spermatophyta
02.	Sub-division	Angiospermae
03.	Infra-division	Radiatopses
04.	Class	Monocotyledonae
05.	Sub-class	Liliidae
06.	Order	Liliales
07.	Family	Colchicaeae
08.	Sub-family	Crocoidae
09.	Genus	Crocus
10.	Species	*C. baytopiorum*

Genus *crocus*: Herb: small, perennial, cormous, deciduous. Corm: usually symmetrical, enclosed by several tunics of variable texture and colour. Cataphylls:

up to 5, sheathery the aerial shoot. Leaves: appearing with or after the flowers, all basal, flat or channeled (canaliculated) on the upper surface, lower surface usually strong keeled usually with two grooves, deciduous, simple, alternate, linear and sessile with entire margins and parallel venation, 5-8 cm. high. Flowers: scape absent, one to several, each on a short, subterranean pedicel which is sometimes subtended by a membranous, sheathing prophyll. Bract: membranous. Bracteole: similar or reduced or absent. Perianth: regular, tube long and narrow, glabrous or with ring of hairs in the throat at the intertion of the filaments, segments usually sub-equal. Anthers: usually extrose. Style: 3 lobed to multifid. Ovary: sub-teranean. Fruits: capsule cylindrical or ellipsoid, maturing or above ground level by elongation of pedicel. Seeds: numerous, usually globose or ellipsoid, brownish or reddish, with a strophiole.

Section *crocus*: species with a basal prophyll.

Series baytopi (new series): corm with strongly reticulated bibres, leaves numerous, narrowly linear, spring flowering, bract absent, anther extrosely dehiscent.

***Crocus baytopiorum* Mathew, B.**[4,12,13-19]

History: Turkey is homo to a remarkable number of *crocus* species and new ones are still being discovered. *Crocus baytopiorum* was discovered in 1973 and was described by kew botanist and former editor of Asuman Baytop first collected *c. baytopiorum* on the Turkey mountain of Honaz Dag, a mountain and national park near Denizli, it was initially thought to be restricted to this locality, but other sites in SW Turkey have since been found. *C. baytopiorum* was described by Brian Frederick Mathew in 1974,. The name is considered as validly published.

Synonym: *Crocus baytopiorum* Mathew
Binomial name: *Colchicum baytopiorum* C.D. Brickell
Common name: Species crocus, Crocus.
Herb: small, perennial, cormous. Native: Western Turkey and Greek island of Rhodes. Native climate: cold snowy winter, cool summer. Found: Asia – Temperate – western Asia Turkey. Wild habitat: calcareous rocky slopes, rocky areas in the forest and Pinus. Distribution endemic/turkey/Antalya, Burdur, Denizli. Growth: 2-5 cm. Corm: strongly Reticulated corm tunic, often having bristly apex. Leaves : deciduous, simple, alternate, linear and sessile, 1.5 mm wide, delicate, entire margins and parallel venation half to distinguish this species and make it easy to recognize, opposed to produced to producing leaves in spring, green, with longitudinal white stripe along the mid -rib. Flowers: small, bright pink-purple, 4 cm. across, solitary cup-shaped in April, between the upper side of gray tones and floral tube with other petals are slightly darker shade of light blue. Perianth tube: 9 cm long and segments up to 3 cm. long. Anthers: light yellow, gray is seen very rarely in the position facing the interior in some form. They look as if the position of adjacent hills and leans very lightly centers. Pollen: white. Filaments: bright white, hairless. Throat: bright white. Style: pale yellow, rarely in orange reindeer, take anthers level or slightly above, divided in to three branches. Ovary: sub-teranean. Fruit: capsule loculicidal. Seeds: elongated, red. 2n = 28.

Phenology: February – March.
Characteristics: Ornamental. Anthers extrorsely dehiscent.

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REFERENCES

1. Harpke, D. et. al. Phylogeny of *crocus* (Iridaceae) base of the chloroplast and two nuclear loci: incident hybridization and chromosome number evolution. Mole. Phylogent Evol., 2012.
2. Mathew, B. The crocus: A revision of the Genus *crocus* (Iridiceae), Batsford, London., 1982.
3. Peterson, G., Scberg, O., Thorsoe, S., Jogenserv, T. and Mathew, B. A phylogeny of the Genus *crocus* (Iridaceae) based on sequence data from five plastid region, Taxon. 2008; 57: 487–499.
4. Mathew, B., Peterson, G. and Seberg, O. A reassessment of *crocus* based on molecular analysis. The Plantsman. n.s., 2009; 8: 50-57.
5. Brighton, C. A. Cytology of *crocus sativus* and its Allies (Iridaceae). Pl. Syst. Evol. Austria., 1977; 128: 137–158.
6. Saxena, R. B. Entirely gone out useful plant – *Artemisia cina*, Indo-American Journal Pharmaceutical Sciences. 2015; 2. 3: 648–663.
7. Gawler, K. Western publication, Bot. Uni., 1771; 2: 238.
8. Brickell, C. (Editor-in-chief). RHS A-Z Encyclopedia of Garden plants, UK: Dorling Kinderseley., 2008; 1136.
9. Haywood, C. A. Meiosis in some species and cultivars of *crocus* (Iridaceae). Pl. Syst. Evol., 1983; 207–225.
10. Zhao yu- Tang. Iridaceae in: Peichien and Ting Chin-Taun, eds Fl-Reipabl Popularis Sin., 1985; 16: 120–198.
11. www.cretanflora.com/crocus-turnefortii.html
12. Saxena, R.B. Botany, Taxonomy and Cytology of *crocus verni* – series. Indo-American Journal of Pharmaceutic Science., 2015; 2. 4: 757 – 763.
13. crocusmania.blogspot.in/search/label/baytopiorum
14. www.kew.org/science-conservation/plant-fungi/crocus-baytopiorum
15. Mathew, B. *Crocus baytopiorum*, Kew Bull., 1974; 29. 88.
16. en.hortipedia.com/wiki/crocus-baytopiorum.

17. https://en.wikipedia.org/wiki/colchicum-baytopiorum.
18. Ozhaty, N. Diversity of bulbous monocots in Turkey with reference chromosome number, Pure Appl. Chem., 2002; 74. 4. 547.
19. www.alpinegardensociety.net/plants/crocus/baytopiorum/13.