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# Two New Species of Iridaceae, *Crocus naqabensis* and *Romulea petraea*, from Jordan

**Abstract:** Two new species *Crocus naqabensis* and *Romulea petraea*, Iridaceae, are described from Jordan. *Crocus naqabensis* differs from the closely related to *C. pallasii* by having reduced tunics that are not forming a neck, white glabrous throat and chromosome number  $2n=14$ . *Romulea petraea* has been collected from the mountains of Petra and differs from *Romulea bulbocodium* in flower colour, shape and insertion of perianth segments as well as in the narrower leaves and distribution that is restricted on sandy rocks. *R. petraea* has totally dark purple flowers that differ from *R. phoenicia* which has violet flowers with darker veins, yellow at the base of the throat, in addition to different habitat.

**Key words:** Jordan, New species, Flora, Iridaceae, *Crocus*, *Romulea*

## Introduction

Taxonomic revision of some monocotyledons in Jordan is continuous. Revision of families such as **Orchidaceae** and other remarks related to new taxa have been published (Al-Eisawi, 1986a,b). There have been other revisions of genera, such as *Crocus* (Kiswani, 1994) and *Colchicum* (Omar, 1994). Accounts of monocotyledons in the flora of Jordan are given in the *List of Jordan Vascular Plants* (Al-Eisawi, 1982). Accounts of monocotyledons in the Flora Palaestina, including Jordan, are given by Feinbrun-Dothan (1986). Similarly, monocotyledons of Syria, Palestine and Sinai, including Jordan, were covered by Post (1933). Mathew (1982) as presented in his book *The Crocus*, produced a revision of the genus *Crocus*. Consultation of monocotyledon collections

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نوعين جديدين من نباتات العائلة السوسنية هما زعفران النقب من الأردن *Crocus naqabensis* و جرسنة البتراء *Romulea petraea* داود محمد العيسوي

المستخلص: تم وصف نوعين جديدين من الأردن تتبع العائلة السوسنية هما زعفران النقب *Crocus naqabensis* و جرسنة البتراء *Romulea petraea* يختلف زعفران النقب عن النوع القريب من المعروف بالهريف *Crocus pallasii* باختزال الحراشف المغلفة للكورمة والتي تكون رقبة في نوع زعفران الهريف ويكون حلق الزهرة أبيض أملس ويعدد الكروموسومات  $2n=14$ . لقد تم جمع جرسنة البتراء *Romulea petraea* من مدينة البتراء الأثرية وهي تختلف عن الجرسنة البيضاء *Romulea bulbocodium* في لون الزهرة وشكلها وطريقة ترتيب أجزاء المحيط الزهري وبأوراقها الرفيعة وتوزيعها الجغرافي المحدود في الصخور الرملية. إن جرسنة البتراء لها أزهار قرمزية داكنة بكاملها وهي بذلك تختلف عن نوع الجرسنة الفينيقية *Romulea phoenicia* ذات الأزهار البنفسجية والعروق الغامقة والحلق الأصفر عند القاعدة، إضافة إلى اختلاف توزيعها الجغرافي.

كلمات مدخلة: الأردن، أنواع جديدة، فلورا، العائلة السوسنية، الزعفران، الجرسنة

deposited in Kew (K), the Natural History Museum (BM), Edinburgh (E) and Geneva have confirmed the new taxa in the flora of Jordan. The following two species, which appear to be new, are described here.

## Materials and Methods

Plant specimens were collected in the field, taken to the laboratory, pressed until dry, then poisoned for protection against insects feeding on cellulose, mounted and labelled after identification. The specimens are deposited at the herbarium, Department of Biological Sciences, Faculty of Science, University of Jordan, Amman, Jordan (AMM).

## Results and Conclusions

*Crocus naqabensis* Al-Eisawi & Kiswani, sp. nova.

Holotype: Ras en-Naqab: 1-3 Km E. of Naqab Ashtar village; along the way to the T.V. station.

5.11.1992. Al-Eisawi, D. & Kiswani, O., 17680B (AMM). ( Fig. 1) & In: Al-Eisawi, D. M. (1998), *Field Guide to Wild Flowers of Jordan and Neighbouring Countries*, Pl. 293, p.160.



**Fig. 1** *Crocus naqabensis*

*C. moabiticus* et *C. cartwrightianus* affinis sed floribus albis lilacino venosis, fauce perianthii alba glabraque, tunica non extensa nec collum formanti, folio in sectione transversali fasciculos vasculares cannis triangulares et fasciculos vasculares branchii rectangulares praebenti, grano pollinis polypantocolpato atqua scabibus remotis ornato, chromosomis  $2n=14$  differt.

Corm 1.5-2.5 cm in diameter, globose, flattened at the base; tunics membranous (papery) with parallel fibers. Cataphylls 4-6, membranous, brown acute tip. Leaves 11-14, hysteranthous, flowers 1-5, white with pale lilac veins, throat white, glabrous. Prophyll present. Bract membranous, 4.0 mm wide, white. Bracteole present, membranous, 3 mm wide, white. Perianth tube 5.0 cm long, white; segments elliptic to oblanceolate, acute or mucronate, outer segments 3.0-3.5 cm x 1.0 cm, inner segments 2.5-3.0 cm x 0.9 cm. Filaments 4.0-6.0 mm long, white, glabrous; anthers 1.4-1.9 cm long, yellow, longer than stigma. Style divided into 3 deep red branches at a point above the anther bases, each up to 1.0 cm long, 1/3 of the segment's length, thickened apex.

The name *C. naqabensis* came after a place called Ras An-Naqab (An-Nagb) in south Jordan, where the species was collected for the first time. According to Matthew (1982), it belongs to the subgenus *Crocus*, section *Crocus* and series *Crocus*.

The most related species to *C. naqabensis* is *C. pallasii*. Both have a style divided into 3 short apically thickened branches at a point above the

anthers base. The branches in both species are not more than half as long as the perianth segments. However, *C. pallasii* can be distinguished from *C. naqabensis* by its tunics, which form a neck up to 10 cm long, by the lilac pubescent throat and by having chromosome count  $2n=16$ . On the other hand *C. naqabensis* has reduced tunics that are not forming a neck, white glabrous throat and chromosome number  $2n=14$ .

*C. naqabensis* is closely related to the endemic *C. moabiticus* and *C. cartwrightianus*. However, they differ in the following:

1. *C. naqabensis* has short style branches which are no more than half as long as the perianth segments, but *C. moabiticus* and *C. cartwrightianus* have long style branches which are more than half as long as the perianth segments.
2. The absence of tunic necks in *C. naqabensis*, whereas *C. moabiticus* and *C. cartwrightianus* have 5-6 cm long tunic necks.
3. *C. naqabensis* has a glabrous throat but *C. moabiticus* and *C. cartwrightianus* have a pubescent throat.

#### ***Romulea petraea* Al-Eisawi sp. nova.**

Holotype: Petra: along the road to Al-Baida, c. 1-2 km. S. of the housing area, waste area on white sand stone, near a cultivated cereal field. 3.2.1994. Al-Eisawi, D., Abu-Seir, S. & Omar, O., 18369 (AMM). ( Fig .2) & In: Al-Eisawi, D. M. (1998), *Field Guide to Wild Flowers of Jordan and Neighbouring Countries*, Pl. 308, p.166.

*Bulbo tunicis siccis tenuis, foliis linearibus longius quam flores, floris 3-4 centimetrum purpura-ianthinus infundibularis-campaniflorus, perianthia segmenta acutiapices fauce purpurainthinus, antherae flavo-aurantiacus.*

Perennial herb, 5-15 cm long, with underground corms, 1 cm in diameter, covered by dry, thin scales. Leaves narrow linear, longer than the flowers. Flowers 3-4 cm in diameter, purple, funnel to bell-shaped; floral parts with acute tip curling outwardly; throat has the same colour as the perianth segments; anthers yellow orange almost as long as the style or a little shorter. Flowering time January-February. Habitat: sandy stone, Petra.

*Romulea petraea* has been collected from the mountains of Petra and differs from *Romulea bulbocodium* in flower colour, shape and insertion of perianth segments, as well as in the narrower

leaves and distribution that is restricted to sandy rocks. *R. petraea* differs from *R. phoenicia* by having larger, dark purple flowers without apparent venation and has no yellow throat at the base. Finally the distribution of *R. petraea* is restricted to rather dry southern Jordan, Petra, differing from Lebanon and Mount Carmel in the north, which are much more humid.



**Fig. 2** *Romulea petraea*

## Acknowledgments

I would like to thank Mrs. O. Kiswani for doing extra systematic work such as anatomy, palynology and cytology to confirm the identity of *Crocus naqabensis*.

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Received 07/04/2001, in revised form 10/11/2001