
***Iris zagrica* subsp. *zagrica* (Iridaceae); A New Record Locality for the Flora of North Iraq**

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Abstract

Iris zagrica B.Mathew & Zarrei subsp. *zagrica* (Iridaceae), a new record for the flora of North Iraq, is collected in Şêrwan region province, North Iraq. It was previously known from Turkey and Iran, with the type specimen of the species from Iran. The distribution locality in North Iraq is given for the first time in this study. Locality information was not recorded for North Iraq, in here the first time recorded. Morphological description, photographs and distribution map of the new record are presented.

Keywords: *Iris zagrica*, Iraq, new record, *Hermodactyloides*, Monocots.

INTRODUCTION

Iridaceae Juss. includes more than 60 genera and about 800 species (Goldblatt and Manning 2008) widely distributed in tropical, subtropical and temperate regions, and is especially numerous in Africa, south of the Sahara, the eastern Mediterranean, western and eastern Asia, and Central and South America (Takhtajan, 2009). According to The Plant List (2012), the genus *Iris* includes about 400 species currently accepted.

During floristic surveys of in Barzan region province in march 2020 and 2021, author collected specimens of one unidentified species from *Iris* subgenus *Hermodactyloides* Spach, which were examined using a wide range of literature (e.g. Fedchenko, 1935; Fırat 2012, 2013, 2016, 2017; Güner and Peşmen 1980; Mathew, 1984; Wendelbo and Mathew 1975; Wendelbo, 1985). At first glance, because of the similarities in plant height, leaf number, flower number, and length of perianth tube, the plants seemed similar to *Iris zagrica* Mathew & Zarrei (2008/2009). However, comparison of those unidentified plants with material of both *I. zagrica* and the related species *I. reticulata* M.Bieb. in Turkey revealed remarkable morphological differences allowing easy separation.

Furthermore, a detailed description, ecological data, illustrations, distribution maps, and vernacular names are given.

MATERIALS AND METHODS

Images of the living material were taken with a Sony DSCR1 digital camera. Geographical positions were identified using a Magellan eXplorist 710 GPS. This new record, which is present in Barzan region, (Fig. 1). A total of 10 herbarium specimens of the new species were collected from three adjacent localities and deposited in the

herbaria VANF (acronyms according to Thiers, 2022), and in the personal herbarium of the author (Herb. Fırat).

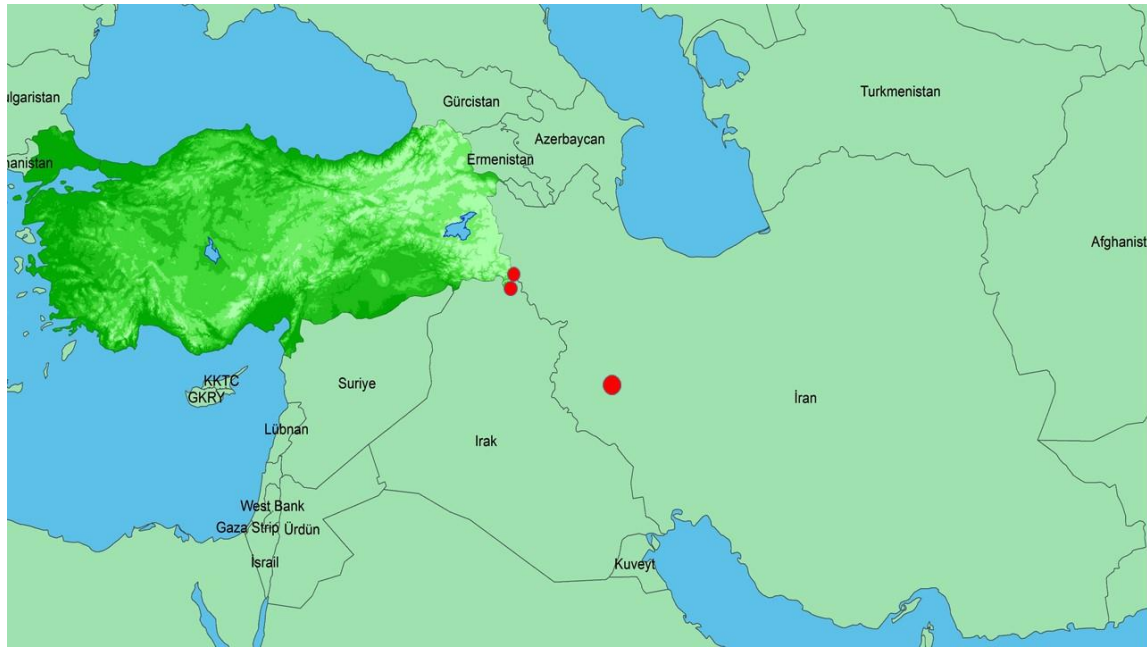


Figure 1. Distribution map of *Iris zagrica* subsp. *zagrica* (marked red) in the World

RESULTS AND DISCUSSION

Iris zagrica B.Mathew & Zarrei subsp. *zagrica*. Bull. Brit. Iris Soc. Spec. Group 2008/9: 23 (plates 10-11) (2009). (Figs. 2–3)

Type: Iran, Zirreh Pass, 38 km east of Khorramabad, 1950 m, May 8, 1962, P. Furse 1864, cult. B. Mathew February 25, 1970 (holotype K!).

Description: Plant 20–30 cm tall at flowering time. *Bulb* 2–4 cm × 1.5–2.0 cm, ovoid; outer tunics netted, especially at apex; inner tunics membranous, splitting longitudinally into fibres, slightly netted at apex. *Leaves* usually two (rarely one), each subtended by a membranous semi-transparent, green-veined, mainly subterranean sheath with only the tip visible; lamina quadrangular in section, grey-green, glabrous, 2–4 mm wide, 18–29 cm long at flowering time, elongat to 30–55 cm long at fruiting time; apex acuminate, whitish. *Inflorescence* one-flowered; pedicel 2.5–3.0 cm long, raising the ovary to just above ground level, merging almost imperceptibly with the slender ovary; bracts and bracteoles anequal, bract narrowly cylindrical, closely sheathing the ovary and its beak, rigid, 9–12 cm long; bracteole narrowly cylindrical for most of its length, wholly enclosed within the bract, rigid; ovary green, 10–14 mm long, extended gradually into a long beak (which has the appearance of a perianth tube) c. 2.7–3.3 cm long. *Flower* articulated at its base, separating from the beak of the ovary after anthesis; perianth tube cupuliform, 3–4 mm long, 2–3 mm wide; *outer perianth segments* (falls) narrowly obovate, 3.5–4.5 cm long, 8–10 mm wide across the lamina tapering to 3 mm at base of haft, obtuse, whitish or pale blue, semi-transparent, flushed green and conspicuously streaked purple, lamina dark purple with a median, triangular, yellow-green low ridge,

papillose and the papillae extending along the median vein towards the base of the haft; *inner perianth segments* (standards) erect, very narrowly oblanceolate, 3.7–4.7 cm long, 4–7 mm wide at widest point, obtuse or subacute, dark violet; *style branches* narrowly cuneate, 3.4–3.6 cm long, 5–7 mm wide at apex, splitting into two sharply reflexed or curled lobes, ±lobes triangular, acute, 8–11 mm long, 2–3 mm wide at base; stigma bilobed, the lobes obtuse or rounded, erose; stamens 21–24 mm long; filaments 10–12 mm long, flattened, c. 1 mm wide, narrowing at apex, white streaked purple; anthers linear, 11–12 mm long, 2 mm wide, violet with yellowish pollen. *Capsule* carried above ground level at maturity, ovoid, 34–38 mm long, 10–15 mm wide with a slender beak 25–40 mm long; *seeds* subglobose, brown, c. 4–5 mm diameter. Chromosome number: $2n = 14$ (Firat, 2017, Table 1)



Figure 2. *Iris zagrica* subsp. *zagrica*. A) habit; B, C) flower; D, E) flower parts; F) habitat,

Phenology: Flowering in February to April.

Distribution: *Iris zagrica* subsp. *zagrica* is an element of the Irano-Turanian floristic region Iran, Turkey and Iraq (Fig. 1).

Vernacular name: *Iris zagrica* subsp. *zagrica* is called “Bilbilaze” in Kurdish by the local people of Şêrwan region province.

Habitat and ecology: *Iris zagrica* subsp. *zagrica* grows in on loose soil at c. 1100–1950 m, with other interesting plants such as *Bellevalia kurdistanica* and *Gagea confusa*, *Lamium amplexicaule*, *Poa* sp.

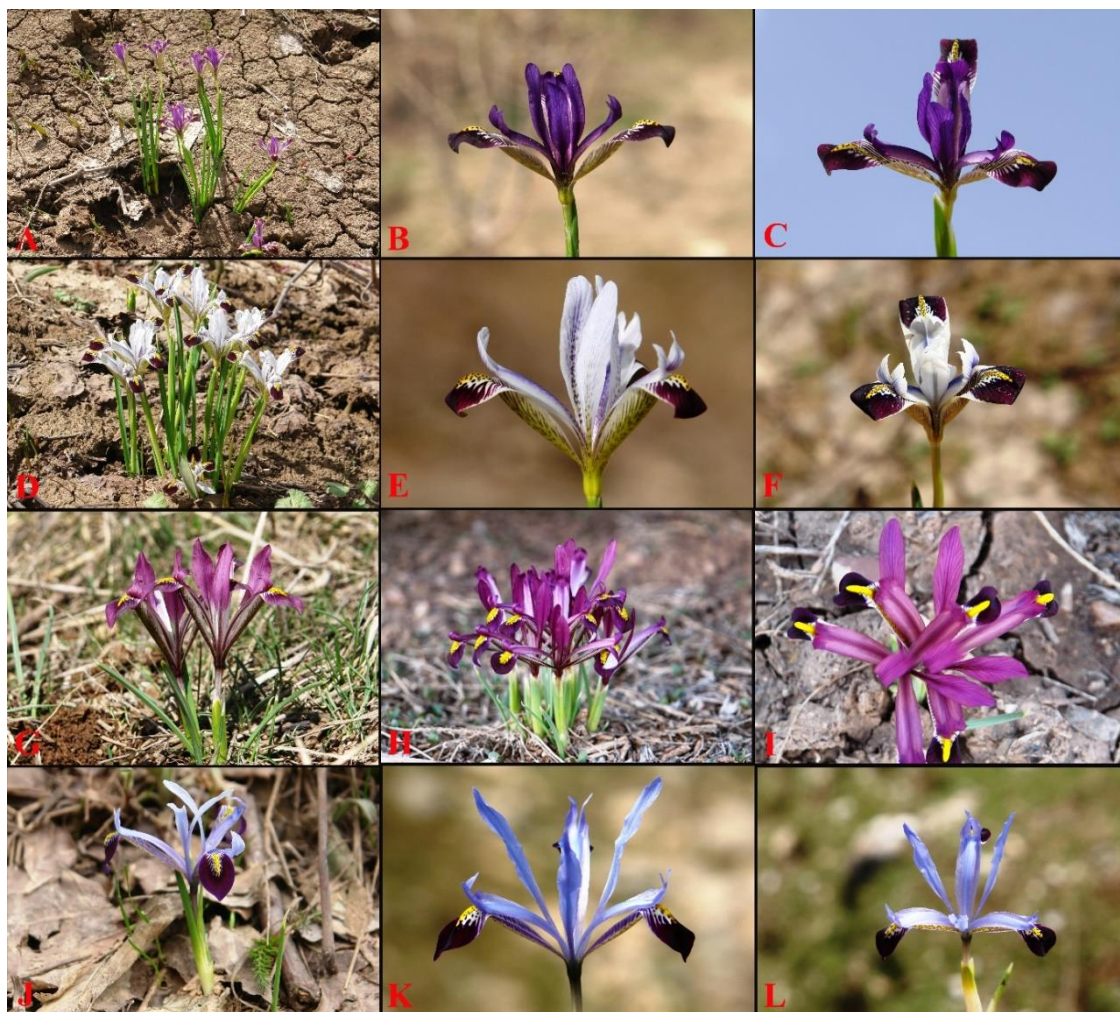


Figure 3. *Iris zagrica* subsp. *hakkariensis*: A-C) general view and flowers. *Iris zagrica* subsp. *zagrica*: D-F) general view and flowers. *Iris reticulata* var. *kurdica*: G, H, I) general view and flowers; *Iris reticulata* var. *reticulata*: J-L) general view and flowers (Firat, 2017).

Other specimens examined:—*Iris zagrica* subsp. *zagrica*. North Iraq (Kurdistan), Erbil, Mergesor district, Şêrwan region, Hezil village, opening oak forest, 1104 m, 36°56'13" N, 44°15'42" E 14 March 2019, M. Firat 33759; Turkey. C10 Hakkâri: Şemdinli district, Balkaya mountain, opening oak forest, 1200 m, 4 April 2012, M. Firat

28482 (NGBB, Herb. M. Fırat), *Iris zagrica* subsp. *hakkariensis*. Turkey. C10 Hakkâri: Şemdinli district, from Cıyayê Govende (Güney Dağı) to Oremar (Dağlıca), on loose soil, 1543 m, 37°12'58" N, 44°16'55" E, in fruit, 24 June 2013, *M. Fırat 30011* (Herb. M. Fırat.—*Iris reticulata* var. *reticulata*. Turkey. C10 Hakkâri: Çukurca district, Bilêcan region, 1300 m, 7 April 2011, *M. Fırat 27325* (Herb. M. Fırat).—*Iris reticulata* var. *kurdica* Turkey. B9 Van: Başkale district, 27 km from Başkale to Hakkâri, 2600 m, 7 April 2011, *M. Fırat 27323* (Topotype, Herb. M. Fırat).

Comments

Iris zagrica subsp. *zagrica* belongs to subgenus *Hermodactyloides*. With the new record, the number of Iraqi *Iris* species amounts to 13, 2 belonging to subgenus *Hermodactyloides*. *I. zagrica* is distributed by two subspecies: *I. zagrica* subsp. *zagrica* (Iran, Turkey and Iraq), and *I. zagrica* subsp. *hakkariensis* (Turkey). The distribution locality in North Iraq is given for the first time in this study.

The detailed and natural photos of *I. zagrica* subsp. *zagrica*, *I. zagrica* subsp. *hakkariensis*, *I. reticulata* var. *reticulata* and *I. reticulata* var. *kurdica* were given for easy differentiation (Fig. 3).

Table 1. Comparison of morphological characters of *I. zagrica* subsp. *hakkariensis*, *I. zagrica* subsp. *zagrica*, *I. reticulata* var. *reticulata* and *I. reticulata* var. *kurdica* (Fırat, 2017)

Morphological characters	<i>I. zagrica</i> subsp. <i>zagrica</i>	<i>I. zagrica</i> subsp. <i>hakkariensis</i>	<i>I. reticulata</i> var. <i>reticulata</i>	<i>I. reticulata</i> var. <i>kurdica</i>
Height of plant	15–25 cm	20–30 cm	7–15 cm	7–13 cm
Leaf size	c. 2 mm wide, 15–16 cm long at anthesis	2–4 mm wide, 18–29 cm long at flowering time, 30–55 cm long at fruiting time	2–5 cm wide, to 30 cm long at fruiting time	2–5 cm wide, to 25 cm long at fruiting time
Perianth tube	c. 3.0 cm long	2.7–3.3 cm long	4–7 cm long	4–6 cm long
Outer perianth segments	whitish or pale blue	purplish to violet	blue, violet or purple	violet or purple
Inner perianth segments	whitish or pale violet-blue	dark violet	blue, violet	blue, violet
Bract	7.0–9.0 cm long	9.0–12 cm long	5.0–7.0 cm long	4.5–6.0 cm long
Capsule	25–30 mm long	34–38 mm long	30–35 mm long	28–31 mm long
Chromosome number	unknown	2n = 14	2n = 20	unknown
Elevation	1200–2260 m	1543 m	600–2700 m	2600 m
Habitat	in humus-rich soil in open situations and beneath <i>Quercus brantii</i>	In loose soil in open forest area	in mountain grassland, stony slopes and in scrub, In <i>Quercus</i> scrub	in mountain grassland, stony slopes
Distribution	Iran, Iraq, Turkey	Turkey	N. Iraq, Iran, Transcaucasia	Turkey

Recently, Crespo *et al.* (2015) asserted that *I. zagrica* should be renamed as *Iridodictyum zagricum* (B.Mathew & Zarrei) M.B.Crespo, Mart.-Azorín & Mavrodiev in their monograph on the irises worldwide, in which *Iridodictyum* Rodionenko (1961) was accepted at the genus rank. However, as some professional botanists and author's points of view, the genus *Iris* is treated here in a wide sense to include *Iris*.

According to Majeed (2021) based ITS described a new section *Zagrica*. looking at the pictures I'm not sure the species is *Iris zagrica*. And, locality information was not recorded for North Iraq, in here the first time recorded.

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