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NEW SPECIES OF THE GENUS *Juno* (*Iris*) FROM CENTRAL ASIA

Jílek J. Nowy gatunek irysa *Juno* z Centralnej Azji. Opisano i zilustrowano nowy gatunek żółto kwitnącego irysa z podrodzaju *Iris* (*Juno*) *hoellerii* Jílek, stwierdzony na obszarze Gór Karatau w Kirgistanie. Przedstawiono różnice i rozmieszczenie geograficzne w stosunku do najbardziej spokrewnionych gatunków.

Йилек Я. Новый вид *Juno* (*Iris*) из Центральной Азии. Новый вид желтых цветущих ирисов подрода *Iris* (*Juno*) *hoellerii* Jílek, описан и проиллюстрирован с территории гор Каратау в Кыргызстане. Представлены различия и географическое распределение по отношению к наиболее родственным видам.

Key words: Iridaceae, *Iris*, *Juno*, Flora, Kyrgyzstan, Monocotyledones

Abstract

A new yellow blooming *Iris* L. species of *Scorpiris* Spach subgenus, *Iris* (*Juno*) *hoellerii* Jílek, has been described and illustrated from Karatau Mountains in Kyrgyzstan. Differences and geographical distribution in comparison to the most closely related species has also been discussed.

INTRODUCTION

On 10th March 2006 during a scientific expedition in Kyrgyzstan in Karatau Mountains, at 1200–1400 m above sea level, north of Kara-unkur village I observed unusual specimens of iris of the subgenus *Scorpiris* Spach, *Iris* (*Juno*) (phot. 1). A few bulbs were taken and then they were planted in a Private Botanic

Garden in Bludov. Next year they blossomed and differed definitely from the owned collection of *Iris* (*Juno*) species. The present author browsed through species from Central Asia and found out that there is no *Iris* (*Juno*) species which would have such a big flower in relation to the size of the whole plant. Besides the structure of the flower differed from other species from that region. It constituted a premise that it may be a new species. In order to verify data the author went to the same area in March 2010. The author collected specimens which confirmed that they differ from species described so far. As a result the author drew a conclusion that the specimens represent a new species of the genus *Iris* (*Juno*):

Iris (*Juno*) *hoellerii* Jílek sp. nov. (**Subgen. *Scorpiris* Spach**) (phot. 1, fig. 1).



Photo 1. Differences between flowers of particular species of *Juno* (phot. by J. Jílek):

Fot. 1. Różnice między kwiatami poszczególnych gatunków irysów (fot. J. Jílek):

a – *Juno hoelleri*, b – *Juno vvedenskyi*, c – *Juno linifolia*



Fig. 1. A new species *Iris (Juno) hoellerii* Jílek 2013 (by G. Kłys)
 Rys. 1. Nowy gatunek *Iris (Juno) hoellerii* Jílek 2013 (rys. G. Kłys)

TYPE

[Kyrgyzstan] Kara-unkur: 1 km north, 1200–1400 m asl, arid rocky southern slopes, 4°77,131'N, 75°72,876'E, 2012. Jílek. Holotype – Herbarium of University of Silesia KTU 137002.

DIAGNOSIS

Related species *Iris voedenskyi* et *Iris linifolia* (phot. 1, table 1). Light yellow flowers, in contrast to related species lack of yellow spot on lower petals (falls) along crest. The crest is orange-yellow and slightly slit. Along the crest there is a blue-green venation. Falls have broad “wings”.

DESCRIPTION

The plant is 8–12 cm high in blossom. The bulb 1,8–2,5 x 1,0–1,4 cm, egg-shaped, dark brown tunics, pa-

pyraceae (peel of the bulb) beyond the neck produced penariae fleshy roots, not thickened. Stem 1 (2–3). Blossoming, internodes are not visible even during blossom and bearing fruit. Leaves (5) 4–6, dependant, directed, linear-lanceolate, 8–13 cm long, 0,6–0,8 cm wide at the base, slightly undulate, pointed, white edges, the remaining part light green. Bracts and bracteoles almost equally tight vaginans perianth tube; bracteae 4–4,4 x 0,8,1,4 cm, lanceolate, green, pointed, membranous at the margin, slightly keeled at the back bracteoles 4,5–5,5 x 1,5–2,1, ovate or lanceolate, sharp or pointy not carinate, membranous and a margin in the lower half.

Flower 5,5 cm in diameter, light yellow, sometimes paler with a yellow crest; perianth tube 3,0–3,5 cm long, sometimes hairy inside; falls 6,8–7 x 2,5–2,7 cm, oblong with side flaps, claw 1,2–1,4 x 1,3–1,4 cm, a bit winged narrow stripe yellow centre, blade 1,2–1,4 x 1,2–1,3 cm, oblong, almost as wide as claw or slightly more narrow, crest c. 2,5 mm

high, crinkle, orange-yellow; along blue-green venation, standard reflexed or spreading, 2,1–1,8 x 0,7–0,8 cm, lanceolate, irregularly dentate; style branches 5,5–6,56 x 0,9–1,1 cm, light yellow; stigma bilobed and retuse, 0,1–0,2 x 0,4–0,5 cm; stamens 2,8–

3,2 cm long, filaments 1,4–1,6 cm long, creamy white, anther 1,4–1,6 cm long, yellow, pollen grains yellow white. Capsule oblong-cylindrical, c. 3–4 x 1 cm. Seeds ovoid, c. 4 mm, rugose.

Table 1. Comparison of *Iris hollerii*, *I. vvedenskyi* and *I. linifolia*
Tabela 1. Różnice pomiędzy *Iris hollerii*, *I. vvedenskyi* i *I. linifolia*.

Species	<i>Juno (Iris) hoellerii</i>	<i>Juno (Iris) vvedenskyi</i>	<i>Juno (Iris) linifolia</i>
Distribution	Stony slopes of Pamir-Alay Karatau Mountains	Stony slopes of Pamir-Alay Kugitang Mountains	Stony slopes of Western Tien Shan and Pamir-Alay.
Height above sea level (m)	1200–1400	2400–2600	2800–3000
Bulb	1,0–1,4	1 cm	1–1,5 cm thick
Roots	fleshy roots not thickened	strongly thickened roots, short, spindle-shaped	thickened roots, short, spindle-shaped
Number of flowers	1 (rarely 2–3)	1–2	1 (rarely 2–3)
Internodes	not visible	more or less visible	short but noticeable
Leaves	linear-lanceolate, narrowing towards the tip, 6–8 mm wide at the base	falcate, narrowing towards the tip, 4–5 mm wide at the base	linear or slightly falcate, narrowing towards the tip, 6–8 (10) mm wide at the base
Flower	5,5 cm in diameter. Light yellow, lack of yellow spot on falls along the crest Falls have broad “wings”.	3–4 cm in diameter. Light yellow, with rather small yellow spot on falls along the crest. Falls not broaden	5–7 cm in diameter. Light yellow, with large yellow spot on falls along the crest. Falls not broaden
Crest	orange-yellow slightly slit	white at the base, yellow, not slit	yellow, not slit
Perianth tube	3,0–3,5 cm long	2,5–3 cm long	4–5 cm long
Blossom time	March	March	March
Time of bearing fruit	May	May	May

MATERIAL EXAMINED

Comes from [Kyrgyzstan] Kara-unkur: 1 km north, 1200–1400 m above sea level, arid rocky southern slopes, 4°77,131'N, 75°72,876'E, 2012. Jilek. Grown in private botanic garden in Bludov, Czech Republic. Holotype was deposited in Herbarium of University of Silesia KTU 137002.

DISCUSSION

Iris (Juno) hoellerii is tightly related with *I. vvedenskyi* and *I. linifolia*, differences and similarities are presented in phot. 1a and table 1.

Species both in various areas of Central Asia and various heights (table 1). However time of blossom and bearing fruit is not different between them.

The most striking difference is having easily noticeable (fig. 1) wide broadening (“wings”) on falls.

Additionally, the described species lacks yellow spots on falls along crest as they are observed in related species. Moreover, the crest is slightly slit, which is not the case in related species. There is also no blue-green venation along the crest. Moreover, the species differ between one another in the length of perianth tube (phot. 1). These differences convinced the author that the collected specimens represent a new species.

Iris (Juno) hoellerii prefers dry, stony, steep slopes. In the place where the examined specimens were collected a population of ca. 1000 specimens was observed.

Russian authors often place all tuberous species of subgroup of genus *Iris (Scorpiris)* Spach, *Xiphium* (Mill.) Spach & *Hermodactyloides* Spach) in one genus (*Juno* Tratt., *Xiphium* Mill. & *Iridodictyum* (Regel) (RODONENKO, 1961). This group amounts now to ca. 55 species (MATHEW, 1981, 1989, 2000). They are plants of semidesert steppes, rocky moun-

tain slopes characterized by frosty winters, as well as hot and dry summer. Junos are distributed from Afghanistan and neighbouring Pakistan, Jammu and Kashmir to Central Asia (mainly into Pamir-Alay and Tien Shan), in whole Western Asia, further south to Saudi Arabia and north to Trans-Caucasus. Species were found in western part of the Mediterranean Sea of Europe and Northern Africa. Some species out of this discrete group are found usually in Central Asia (VVEDENSKY, 1971). SIKURA (1999) has shown, that the largest number of species of this genus represented in the Pamir-Alay area is 13, including as much as 12 endemic species. This fact suggests that Pamir-Alay is the centre of origin of the genus Juno.

Pamir-Alay – mountain system in Central Asia, in Tajikistan and partly in Kyrgyzstan (north-eastern part) and Uzbekistan (western part), Turkmenistan (western part) and China. The system includes Gissaro-Alay and Pamir (PAGANUCCI, 1968).

This area stretches from west to east over 900 km and 400 km from north to south. It consists of mountains and highlands between Fergana Valley in the north and upper reaches of Amu-daria in the south (GVOZDECKY, 1959, 1960; ZAPRYAGAYEVA, OVCHINNIKOV, 1976).

Diversification of height of the Pamir-Altay area from the largest number of high mountain glaciers as well as dismembering by valleys constitutes favourable conditions for endemism. They possess narrow ecological amplitudes and often particular species of Juno is found only in one type of habitat.

ETYMOLOGY

The new species was named to honour a friend, deceased in 2010, fifty-six-year-old Johannes Höller

from Linz (Austria). He was a great grower and plant lover.

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