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A new variety of *Merendera* Ramond (Liliaceae):
M. montana var. *paucitepala* var. nov.,
from south-eastern Spain

Javier LÓPEZ-TIRADO



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A new variety of *Merendera* Ramond (Liliaceae): *M. montana* var. *paucitepala* var. nov., from south-eastern Spain

Javier LÓPEZ-TIRADO

Department of Botany, Ecology and Plant Physiology, Celestino Mutis building,
Campus of Rabanales, University of Córdoba, 14071-Córdoba (Spain).
javier.lopez.tirado@uco.es

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KEY WORDS

Liliaceae,
paucitépaly,
south-eastern Spain,
new variety.

ABSTRACT

Merendera montana var. *paucitepala* var. nov. is described as a new variety from south-eastern Spain. Fieldwork observations and morphological characters are given. A key to the genus for the Iberian Peninsula and chorological and habitat comments are also provided.

RÉSUMÉ

Une nouvelle variété de *Merendera* Ramond (Liliaceae): *M. montana* var. *paucitepala* var. nov. du sud-est de l'Espagne.

MOTS CLÉS
Liliaceae,
paucitépalye,
sud-est de l'Espagne,
variété nouvelle.

Merendera montana var. *paucitepala* var. nov. est décrite comme une nouvelle variété du sud-est de l'Espagne. Les observations de terrain et les caractères morphologiques sont donnés. Une clé du genre pour la péninsule ibérique et des commentaires sur la chorologie et l'habitat sont également fournis.

INTRODUCTION

Merendera Ramond is a genus that includes 10-15 species in the Mediterranean Region and adjacent areas, reaching Central Asia (Rico 2013). These species correspond to bulbous herbs with a membranous tunic; leaves basal; flowers solitary or in fascicles, subsessile; capsule septicidal (Valdés 1980). In the Iberian Peninsula, three species occur; in some cases, two of them (*M. montana* (Loefl. ex L.) Lange and *M. filifolia* Cambess.) are confused with each other. In fact, the most diagnostic character is the foliage, which generally appears after blooming. In this way, the distribution of both species was not clear some decades ago. Although *M. filifolia* is the species reported to grow in Córdoba province (Valdés 1987), recent personal observations indicate that the prevailing species is *M. montana* (López-Tirado *et al.* 2015). This fact is confirmed by Enrique Rico (pers. comm.) who only studied two herbarium vouchers of *M. filifolia* located in the north-easternmost part of Córdoba province. Nowadays, the distribution of these species is more clear (Rico 2013). Within Jaén province *M. montana* seems to follow the same pattern of distribution of Córdoba province, i.e., *M. filifolia* is quite rare, only located in Sierra Morena range, whereas *M. montana* is found throughout the territory (Navarro 2011).

Intraspecific taxa such as varieties are described when populations of a given species keep one or more characteristics that differ from the typical ones. Pigmentation or number of pieces in a flower whorl is considered in new variety descriptions (Summerbell *et al.* 1989; Blanco-Dios 2002), like the number of tepals (Ya-Ling *et al.* 2014).

The aim of this work is to describe a new variety of *M. montana* from south-eastern Spain by fieldwork observations and morphometric measurements.

MATERIAL AND METHODS

A waypoint was set by means of a Garmin eTrex 30 GPS to have ultimately precise coordinates, elevation and other parameters of the type by means of ArcGIS 10.4.1. A ruler in tenths of millimetres and a stereomicroscope were used for measuring the smaller parts of the specimens. Two herbarium vouchers

were collected in different periods – because of phenology – from the same locality for being studied and then deposited in the Herbario del Real Jardín Botánico de Córdoba (COA).

Nineteen quantitative measurements were considered as follows: bulb length, bulb width, tunic neck length, mucronate apex sheath length, leaf length, leaf width, number of leaves, tepal length, tepal width, number of tepals, staminal filament length, anther length, anther length/staminal filament length ratio, number of anthers, teak separation at the base, style length, number of styles, stigma length, and stigma width. Five qualitative characters such as sheath apex shape, tepal shape, tepal colour, anther insertion and teak colour were also considered. In total, 17 flowers were measured and analysed.

RESULTS AND DISCUSSION

Family LILIACEAE Juss.
Genus *Merendera* Ramond

Merendera montana (Loefl. ex L.) Lange
var. *paucitepala* J. López-Tirado, var. nov.
(Fig. 1)

Merendera montana Lange var. *paucitepala* var. nov. shows four tepals, four stamens and two carpels, differing from the typical variety *M. montana* var. *montana* that shows six tepals, six stamens and three carpels.

TYPE. — Spain. Andalusia, Jaén province, Cazorla municipality, Refugio Fuente de Acero, elevation 1500 m, 30SWG1394, 29.VIII.2020, J. López Tirado s.n. (holo-, COA[COA60573]); 10.X.2020, J. López Tirado s.n. (para-, COA[COA60574]).

STUDY AREA, HABITAT, PHENOLOGY AND DISTRIBUTION. — The study area is located in south-eastern Iberian Peninsula, Spain, Andalusia region and the Baetic range within Jaén province (Fig. 2). This area is a limestone formation, ranging the highest points from 2000 to 2100 m a.s.l. It was growing in a pastureland surrounded by some limestone outcrops and shrubs where *Pinus nigra* Arnold subsp. *salzmannii* (Dunal) Franco dominates. Regarding phenology, it was mainly blooming in late August and no leaves were found. In the first half of October, only few scattered flowers were present and most of the specimens were only showing leaves. At this moment, this new variety is exclusive from Sierra de Cazorla, Segura y Las Villas Natural Park in Jaén Province.

KEY TO THE IBERIAN *MERENDERA* RAMOND GENUS (ADAPTED FROM RICO [2013])

1. Leaves developed at the same time of the blooming period; the wider ones at least of 4 mm. Flowers 1-4(5) per bulb; blooming period from December to March. Anthers 2.8-5.5(6.8) mm, subdorsifixed *M. androcymbioides* Valdés
- Leaves generally developed after the blooming period, variable width. Flowers 1(2) per bulb; blooming period from June to December. Anthers (2.5)5-20(25) mm, basifixed 2
2. Leaves (3)5-12 per bulb, underground or aerial when blooming, from acute to subobtusate in the apex; the widest one until 2.8(3.8) mm. Anthers (2.5)5-8(13) mm; stigma 0.1-0.2 × 0.1-0.2 mm, not or slightly decurrent *M. filifolia* Cambess.
- Leaves 3(4-5) per bulb, generally underground when blooming, from obtuse to truncate, retuse or not in the apex; the widest one at least 3 mm. Anthers (4.2)6.5-20(25) mm; stigma (0.1)0.2-1(1.5) × (0.1)0.2-0.6(0.8) mm, frequently decurrent 3
3. Tepals 6, stamens 6 and styles 3 *M. montana* (Loefl. ex L.) Lange var. *montana*
- Tepals 4, stamens 4 and styles 2 *M. montana* var. *paucitepala* J. López-Tirado, var. nov.



FIG. 1. — Images of *Merendera montana* var. *paucitepala* var. nov.: **A**, front view of the flower; **B**, lateral view of the flower; **C**, front view of the leaves.

ETYMOLOGY. — The new variety here described as *paucitepala* refers to the most evident character: the lower number of tepals in comparison with the typical variety.

DESCRIPTION

Bulbous herb with membranous dark tunic; tunic neck of 1.5-6.8 cm length. Bulb 2.2-3.4 × 1.5-2.8 cm. Cataphyll

apex generally obtuse or truncate, more rarely acute, either not mucronate or up to 2 mm when mucronate. Leaves 3(4) per specimen, 2.8-5.2 cm length and 3-4 mm width. Leaf shape from linear to linear-lanceolate, canaliculate, sometimes with minutely denticulate margin, generally developed after the blooming period. Flowers 1 per bulb, subsessile. Tepals 4, 3.1-5.7 × 0.4-1 cm, elliptic, more rarely oblanceolate or

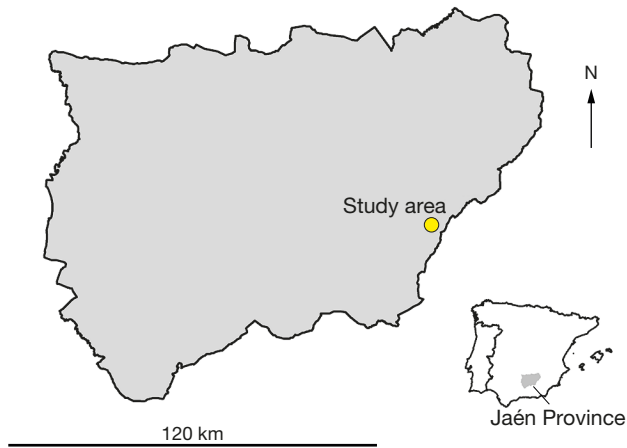


FIG. 2. — Location of the type locality within Jaén province. The latter is also shown within Iberian Peninsula at the bottom part on the right.

narrowly elliptic, pink, white at the base. Stamens 4, staminal filaments 0.3-0.65 mm length; anthers 1-1.86 cm length, basifixed, yellow, with teaks separated 0.2-0.8 mm at the base. Anther longer than its staminal filament (anther length/staminal filament length rate = 1.53-5.76). Styles 2, 4.6-9.6 cm length; stigmas 0.3-1.5 × 0.3-0.8 mm.

NOTES

Populations of *Merendera montana* with 4 tepals, 4 stamens and 2 styles were found in south-eastern Andalusia and here described as the new variety *M. montana* var. *paucitepala* var. nov. Morphometric parameters of the new variety were compared with the typical one (Rico 2013) and no further differences were detected. Besides the type locality, it was observed near to *Tranco del Perro* and *Refugio Cañada Rincón* within *Sierra de Cazorla, Segura y Las Villas* Natural Park. It is expected that this variety could be more spread in Jaén province; surrounding provinces such as Granada and Albacete should be also prospected.

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