

## FIRST RECORD OF THE EXOTIC SPECIES *PETUNIA AXILLARIS* (SOLANACEAE) FROM THE IBERIAN PENINSULA

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**ABSTRACT:** The sub-spontaneous presence of the ornamental species *Petunia axillaris* subsp. *axillaris* is reported for the first time in the Iberian Peninsula. It is a small, fertile population growing in an urban habitat from southwestern Spain. **Keywords:** exotic plants; ruderal plants; ornamental plants; urban environments; Seville; Spain.

**RESUMEN:** Primera cita de la especie exótica *Petunia axillaris* (Solanaceae) en la península ibérica. Se indica la presencia sub-espontánea de la especie ornamental *Petunia axillaris* subsp. *axillaris* por primera vez en la península ibérica. Se trata de una población fértil de pequeño tamaño, que crece en un ambiente urbano del suroeste de España. **Palabras clave:** plantas exóticas; plantas ruderales; plantas ornamentales; hábitats urbanos; Sevilla; España.

### INTRODUCTION

*Petunia axillaris* (Solanaceae) is a pioneer plant native to temperate South America, where inhabits open and sunny sites on different substrates throughout the Pampa grasslands: from Argentina-Uruguay to south of Bolivia, Paraguay and Brazil. It is an annual to short-lived perennial herb, bearing white, fragrant, hypocrateriform flowers (GERATS & STROMMER, 2009). From a taxonomical viewpoint, three allopatric subspecies are recognized at morphological, ecological and genetic levels: *P. axillaris* subsp. *axillaris*, *P. axillaris* subsp. *parodii* (Steere) Cabrera and *P. axillaris* subsp. *subandina* Ando. This scenario has been interpreted as the expression of an incipient speciation process (TURCHETTO & al., 2014).

### RESULTS AND DISCUSSION

***Petunia axillaris*** (Lam.) Britton, Sterns & Poggenb. Prelim. Cat.: 38 (1888) [= *P. nyctaginiflora* Juss. in Ann. Mus. Natl. His. Nat. 2: 216, tab. 47, fig. 2 (1803)] subsp. **axillaris**

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I have found a few scattered individuals of *P. axillaris* subsp. *axillaris* growing sub-spontaneously as ruderal plants in an urban habitat of the city of Seville, southwestern of the Iberian Peninsula. Plants were located at a well-exposed sunny site, rooted between interstices of a non-trampled pavement. Diagnostic characters follow SHAW (2004: 261) and KOKUBUN & al. 2006 for species and subspecies level respectively (fig. 1). To the best of my knowledge, the sub-spontaneous presence of *P. axillaris* in Spain has been only confirmed in the Canary Islands (SANTOS-GUERRA & al., 2013), whereas adventitious or naturalisation events remain unreported from the Iberian Peninsula (e.g.: GALLEGO & al., 2012). Therefore, it is the first published record for this species in the Iberian Peninsula.

The ornamental use of *P. axillaris* is the primary cause of its introduction in Europe, where it has been cultivated at least from the first quarter of the 19th century (SWEET, 1827). In fact, the widespread hybrid *Petunia x hybrida* (Hook.) Vilm. was precisely originated in England from crosses between *P. axillaris* and *P. integrifolia* (Hook.) Shinz & Tell. (GERATS & STROMMER, 2009), having been occasionally reported as escaped from cultivation in the Iberian Peninsula (GALLEGO & al., 2012). In Spain, *P. axillaris* also became cultivated at gardens of places so distant as Seville, Valladolid or Guadalajara (COLMEIRO, 1851; PASTOR, 1861; CABALLERO, 1926), but currently other species within the genus are preferred for that purposes (TRIGO, 2010). The sub-spontaneous individuals here reported are confirmed as ergasiophytes derived from ornamental potted plants, despite the minor use of *P. axillaris* in green public spaces of Spain.

The sub-spontaneous population is fertile, with individuals that occasionally produce loculicidal capsules, pyriform in shape. These capsules contain from 200 to 450 minute seeds, being dispersed by wind to short distances. Considering the herkogamic design in flowers of *P. axillaris* subsp. *axillaris*, with upper mature anthers just below the wet prominent stigma, the seed production indicates the existence of legitimate pollinators at the study area. In fact, flowers of *P. axillaris* subsp. *axillaris* depend on diurnal and nocturnal insect pollinators for fertilisation, but showing a clear adaption to moth pollination (GERATS & STROMMER, 2009). Moreover, breeding system of these sub-spontaneous plants has been experimentally revealed as self-compatible (Medina-Gavilán, unpubl. data), though only certain geographical lineages within the subspecies present self-compatibility (KOKUBUN & al., 2006). All these circumstances confirm the great difficulties associated with an effective control policy against potential bioinvasions.

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Fig. 1. Individuals of *Petunia axillaris* subsp. *axillaris* growing on the pavement at the study area.