

## *Serapias occidentalis* (Orchidaceae): appearance and distribution

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**Abstract:** Pessoa, J., Borges, L. & Venhuis, C. *Serapias occidentalis* (Orchidaceae): appearance and distribution. *Lazaroa* 32: 15-19 (2011).

*Serapias occidentalis* was known until recently only from Spanish Extremadura. The authors found the first population of *S. occidentalis* outside Extremadura in western Portugal. Like the Extremaduran populations, *S. occidentalis* in Portugal is quite variable morphologically as well as in flower colour. We assume that plants described as *Serapias maria* are representatives of *S. occidentalis* with relatively small flowers.

**Keywords:** *Orchidaceae*, *Serapias occidentalis*, *Serapias maria*, Spain, Portugal.

**Resumen:** Pessoa, J., Borges, L. & Venhuis, C. *Serapias occidentalis* (Orchidaceae): aspecto y distribución. *Lazaroa* 32: 15-19 (2011).

*Serapias occidentalis* es un taxon que sólo se conocía de Extremadura, España. Los autores encontraron la primera población de este taxon fuera de Extremadura en el oeste del Portugal. Al igual que las poblaciones extremeñas, la *S. occidentalis* en Portugal varía tanto morfológicamente, como en el color de la corola. Suponemos que las plantas descritas como *Serapias maria*, son en realidad *S. occidentalis* de flores relativamente pequeñas.

**Palabras clave:** *Orchidaceae*, *Serapias occidentalis*, *Serapias maria*, España, Portugal.

### INTRODUCTION

VENHUIS & al. (2006) performed a literature study on the distribution of several orchids belonging to the genus *Serapias* occurring in Spain and Portugal (PEREIRA & al., 2010). They found that, according to TYTECA (1997), LOWE (1998), CORTIZO & SAHUQUILLO (1999), BENITO AYUSO & TABUENCA MARRACO (2001), DELFORGE (2002), VENHUIS & al. (2004) and SAEZ & al. (2005), *S. vomeracea* subsp. *vomeracea* (N.L. Burman) Briquet does not occur at the north-western part and southern half of the Iberian Peninsula.

Nevertheless, plants from Extremadura were presented by RIVAS MATEOS (1931), RIVAS GODAY (1964), PÉREZ CHISCANO & al. (1991) and MATEOS MARTÍN & al. (2006) as *S. pseudocordigera* (Sebastiani) Moricand and *S. longipetala* (Tenore) Pollini, which are both synonyms for *S. vo-*

*meracea* subsp. *longipetala* (Tenore) H. Baumann & Kunkele, and as *S. vomeracea* (subsp. *vomeracea*) respectively.

PÉREZ CHISCANO (1977), DEVESA ALACARAZ (1995), TYTECA (1997), BENITO AYUSO & TABUENCA MARRACO (2001) and VENHUIS & al. (2004) postulate that some of these Extremaduran plants remind of *S. cordigera* L. or *S. lingua* L. To determine the taxonomic status of these plants, VENHUIS & al. (2006) visited several of these Extremaduran populations and compared its morphological characters with other large flowered taxa belonging to the *S. vomeracea*-group, such as *S. perez-chiscanoi* Acedo, *S. vomeracea* subsp. *vomeracea* (from Italy and France) and *S. cordigera* (France and Spain) by carrying out discriminant analyses in SPSS. *S. lingua* was left out in these analyses as characters of this taxon were not found in the Extremaduran plants (VENHUIS

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& al., 2006). The analyses presented four nicely clustered groups. Based on these analyses and by the deviant appearance, they concluded that the Extremaduran plants morphologically significantly differed from the other taxa and proposed to name this taxon *Serapias occidentalis* C. Venhuis & P. Venhuis.

## APPEARANCE

In spite of the significant morphological differences of *S. occidentalis* with other large flowered taxa, VENHUIS & al. (2006) nevertheless point out that flowers of *S. occidentalis* from Extremadura (Figure 1 a - d) remind of *S. cordigera*, *S. lingua* or *S. vomeracea*. Flowers similar to *S. cordigera* have a relatively broad epichile, flowers resembling *S. vomeracea* have a slender epichile, while flowers close to *S. lingua* have an epichile that is more or less intermediate between the former ones and points outwards. In Portugal, we found a population comprising about twenty five flowering plants. Despite the limited amount of plants, flowers were morphologically quite variable in appearance (Figure 2 a-d). Apparently, the diverse appearance of the flowers is a typical trait for this taxon.

*S. occidentalis* found in Extremadura generally bears bright red coloured flowers although regularly pinkish, dark red or purple flowers were encountered. The majority of the flowers from Portugal were bright red too although infrequently pinkish, dark red to purple. One hypochromatic plant - without colour - was found.

For Extremadura, VÁZQUEZ (2008) described a new taxon: *Serapias maria* F.M. Vázquez. He concludes that Extremaduran plants, previously presented as *S. vomeracea*, are possibly *S. maria*, despite the fact that VENHUIS & al. (2006) already stated the same for *S. occidentalis*. According to VÁZQUEZ (2008, 2009), individual plants of *S. occidentalis* are a product of hybridisation between *S. cordigera* and *S. maria*. Field observations on populations of *S. occidentalis*, however, taught us that this taxon hardly ever co-occurs with *S. cordigera* as both taxa make deviate demands on the habitat. Distribution maps presen-

ted by VÁZQUEZ (2009 - Maps 46, 48 & 49) indeed confirm that as a rule, *S. occidentalis* does not co-occur with *S. cordigera* (nor with *S. maria*). A supposed hybrid origin of *S. occidentalis* between these taxa is therefore highly unlikely. Dimensions of several characteristics of *S. occidentalis* and *S. maria* are presented in Table 1. This data shows that no single morphological character delimitates one taxon from the other. In fact, most characters overlap to a large extent. VÁZQUEZ (2008, 2009) furthermore presents that the length of the hairs present on the base of the epichile distinguishes both taxa, but pictures presented here demonstrate that this length varies considerably according to the exact position on the epichile, and varies too among flowers within and between populations. Finally, the ratio of the epichile length and hypochile length should differentiate *S. occidentalis* and *S. maria*, with values of 1.4 - 1.8 and 0.9 - 1.1 respectively (VÁZQUEZ, 2008 - Table 1). The actual calculated ratio for *S. maria*, based on dimensions presented by VÁZQUEZ (2008, Table 1), varies between 1.62 and 1.74, as assigned for *S. occidentalis*. Considering the preceding information, we expect that plants described as *S. maria* are merely representatives of *S. occidentalis* with relatively small flowers.

Table 1		
Dimensions of plant characteristics from <i>S. occidentalis</i> and <i>S. maria</i> .		
Data of <i>S. occidentalis</i> was derived from VENHUIS & al. (2006), pag. 138. Data of <i>S. maria</i> in VÁZQUEZ (2008), pag. 701, Table 1; pag. 704, and in VÁZQUEZ (2009), pag. 233 was not unambiguous: some measurements were derived from both publications.		
	<i>S. occidentalis</i>	<i>S. maria</i>
plant height (cm)	10-37	17-38
leaf length (cm)	4-16	7-18
leaf width (mm)	6-18	5-18
bract length (mm)	30-60	18-45
bract width (mm)	12-22	7-14
sepal length (mm)	18-32	22-30
epichile length (mm)	15-28	10-24
epichile width (mm)	8-19	6-10
hypochile length (mm)	11-16	8-14
hypochile width (mm)	17-25	12-20



Figure 1. – a, *S. occidentalis*. Obando, Extremadura, Spain. 28-IV-2006; b, *S. occidentalis*. Obando, Extremadura, Spain. 25-IV-2010; c, *S. occidentalis*. Campo Lugar, Extremadura, Spain. 25-IV-2010; d, *S. occidentalis*. Trujillanos, Extremadura, Spain. 27-IV-2007. All photos: C. Venhuis.



Figure 2. – a, *S. occidentalis*. Casmilo, Beira Litoral, Portugal. 01-V-2010; b, *S. occidentalis*. Casmilo, Beira Litoral, Portugal. 01-V-2010; c, *S. occidentalis*. Casmilo, Beira Litoral, Portugal. 28-IV-2011; d, *S. occidentalis*. Casmilo, Beira Litoral, Portugal. 01-V-2010. All photos: C. Venhuis.

## DISTRIBUTION

Several populations of *S. occidentalis* were found in the autonomous Spanish region of Extremadura (VENHUIS & al., 2006). It is found predominantly within depressions, often in dehesa like landscapes, of which the soil is humid during winter and spring. Outside Spanish Extremadura, *S. occidentalis* was not known until recently, as we found a population in 'Portugal. The growing site is located at the central-western part of Portugal,

about 150 kilometres north of Lisboa, about 30 kilometres out of the coast and about 5 kilometres south of Condeixa-a-Velha between the hamlets Casmilo and Quatro Lagoas. The site is situated in a mountainous landscape, part of the Serra de Sicó, on an altitude of about 340 meters. The orchids are present on a slightly sloping surface where the soil is humid during winter and spring. A dense vegetation of numerous grasses accompanies the plants along with several scattered shrubs, while other *Serapias* taxa were lacking.

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