

THE BASAL CALLOSITY OF *SERAPIAS LINGUA* POPULATIONS IN THE PROVINCE OF MÁLAGA, SPAIN.

Ian PHILLIPS and Michael R. LOWE

Summary

In small populations of *Serapias lingua* south of Cóin, Málaga, Spain, the flowers in most clonal groups had single callosities at the base of the hypochile. However, a few groups had flowers with two parallel callosities similar to those of *Serapias strictiflora*, and to those recently described among a large population of *S. lingua* near Grazalema, Cádiz, Spain. This suggests that paired basal callosities may not be unusual in *S. lingua* in Andalucía.

Samenvatting

In kleine populaties van *Serapias lingua* ten zuiden van Cóin, Málaga, Spanje, hadden de bloemen in de meeste groepen een enkelvoudige knobbel aan de basis van het hypochilium. Maar enkele groepen hadden bloemen met twee evenwijdige lijsten, zoals die voorkomen bij *Serapias strictiflora* en, zoals recent beschreven, in een grote populatie van *S. lingua* nabij Grazalema, Cádiz, Spanje. Dit wijst erop dat dubbele lijsten bij *S. lingua* in Andalusië niet ongewoon zijn.

Zusammenfassung

In kleinen Populationen von *Serapias lingua*, südlich von Cóin, Málaga, Spanien, hatten die Blüten in den meisten Gruppen nur eine einzige Schwiele an der Basis des Hypochils. Bei einigen Gruppen jedoch besaßen die Blüten zwei parallele Schwielen, wie diese bei *S. strictiflora* und – wie neulich beschrieben – in einer großen population von *S. lingua* in der Nähe von Grazalema, Spanien, vorkommen. Dies zeigt, dass paarweise angeordnete Schwielen bei *S. lingua* in Andalusien nicht ungewöhnlich sind.

Introduction

Flora Europea (Moore, 1980) states that *Serapias lingua* L. has a solitary black ridge at the base of the labellum, and this is consistent with advice that the species can be distinguished in the field by the presence of a 'coffee-bean' in the throat of the flower. In the Province of Málaga in southern Andalucía, Spain, four species of serapias have been identified: *S. cordigera* L., a rarity in the centre of the Province; *S. lingua*, scattered throughout but uncommon; *S. parviflora* PARL., widespread, and the commonest; *S. strictiflora* WELW. ex DA VEIGA., uncommon and in the west of the Province. The first and third of these can be distinguished from the others without difficulty, and theoretically, there should be no problem in distinguishing between the other two, not least on the basis of the presence in *S. strictiflora* of two parallel basal ridges on the hypochile of the labellum. Delforge (2001), one of the few



authorities to describe *S. strictiflora*, describes the basal callosity of *S. lingua* as “entière, parfois émarginée, prolongée souvent par 2 fines crêtes vers la base”, while *S. strictiflora* has a callosity that is “émarginée, profondément canaliculée”. Given that both species often grow in groups, consistent with vegetative reproduction, that the flower sizes and colours can on occasion be similar, although *S. strictiflora* is always dark brown, and that the epichile of the labellum of *S. strictiflora* is often shaped more like that of *S. lingua* than Delforge’s photograph suggests, the shape of the basal callosity assumes great importance. The recent description of *S. lingua* with two parallel basal ridges by Kapteyn den Boumeester, from Grazalema in the adjacent Province of Cadiz, suggests that the character may be of less value than supposed.

In late March 2003, it became clear that more populations of *S. lingua* had flowered in Málaga than is normally the case, giving us an opportunity to examine the basal callosities in several populations.

Study populations

All of the populations of *S. lingua* with the exception of one, came from the margins of pine woods bordering roads running south from the road between Coin and Puerto de los Pescadores. The exception came from cork-oak woodland, south east of the town of Casares. We were able to examine eight separate populations, which in no case had more than 25 flowering spikes.

Investigations

In the field, attempts were made to examine the basal callosities without damaging the flowers, and representative flowers were photographed. Because of the relative sparsity of the populations, we collected for detailed examination only one flower from each of the eight groups. For comparative purposes, we examined a single, well-known population of *S. strictiflora* near the town of Manilva, and collected a single flower.

The labella were removed from each of the flowers at the junction with the stigmatic surface, and the basal callosities measured and described. They were then photographed after the lateral lobes of the hypophyses had been flattened. It was not our purpose to conduct a statistical examination of any of the parameters.

Foto’s pagina 72:

Figure 1: *Serapias lingua*, south of Coin, Málaga, Spain, 8 April 2003

1a (left): with paired basal callosities.

1b (right): with single basal callosity.

Figure 2. *Serapias strictiflora* with paired basal callosities. North of Manilva, Málaga, Spain, 12 April 2003.

Foto’s: I. Phillips

Results

In all the populations of *S. lingua* except one, the spikes, which were in early flower, were 10-15 cm in height, the exceptional group being 20-30 cm in height. The colour of the epichile ranged from cream (often with purple borders) to deep reddish purple, and the density of pale labellum hairs also varied considerably. On collected specimens, the length of the labellum was 20-24 mm, the width of the hypochile averaged 15.5 mm, and of the epichile 8 mm. The corresponding dimensions for the single *S. strictiflora* were 18.5 mm, 13 mm, and 4.5 mm.

The basal callosities of *S. lingua* were from 2-3 mm in length and 2.2 to 2.4 mm in width, while those of *S. strictiflora* were 4x2 mm. They took three forms, one the classical smooth "coffee bean" with projections towards the base of the labellum (Figure 1b), one with a similar outline but with longitudinal and horizontal ridges (not photographed), and a third with two ridges separated by a deep cleft (Figure 1a), very similar to those of *S. strictiflora* (Figure 2). Each population appeared from our limited field observations to have only one of these shapes, that from Casares having only a single callosity.

Discussion

We have found that, in this small area of Málaga, *S. lingua* may have the classical single basal ridge, much as appears in most of the books on European orchids (Baumann and Künkele 1982, Davies, Davies and Huxley 1983, Buttler 1991, Delforge 1994, Bournérias 1998). We have also confirmed that it may have two distinct ridges as described and photographed by Kapteyn den Boumeester (2001) in Grazalema. We add an observation of a third form with a flattened ridged surface. It seems from our limited observations that clonal groups of *S. lingua* may have basal ridges of the same morphological type.

The similarity of the paired basal ridges of the two orchids *S. strictiflora* and *S. lingua*, can make them difficult to distinguish in the field, especially when they are growing in separate sites with a similar dark flower colour. Only careful examination of sampled flowers, with the lateral lobes of their hypochiles and their epichiles suitably flattened, can ensure correct identification.

It is possible that some of the populations that we have observed are of hybrid origin, with *S. parviflora* as one of the possible parents, since it grows in or close to most of the sites that we visited. Despite the close resemblance of *S. lingua* with paired basal callosities to *S. strictiflora*, this seems a less likely recent partner since it grows only some 50 km to the east and west of the Málaga *S. lingua* sites. Nor does *S. cordigera* seem a likely recent parent since it is rare in this area.

References

- Baumann, H. & Künkele S. (1982). Die wild-wachsenden Orchideen Europas. Kosmos, Stuttgart. Germany. p 377.
- Bournérias, M. (ed) (1998). Les orchidées de France, Belgique et Luxembourg., Collection Parthenopé, Montpellier, France. p253.
- Buttler, K.P.(1991). Field guide to orchids of Britain and Europe. The Crowood Press, UK.
- Davies, P., Davies, J. & Huxley, A. (1983) Wild orchids of Britain and Europe. Chatto and Windus, London, UK. figure 226.
- Delforge, P. (2001). Guide des orchidées d'Europe d'Afrique et du Proche-Orient 2nd edition, Delachaud et Niestlé, Lausanne, Switzerland. pp 231, 256.
- Kapteyn den Boumeester, D. W. (2001). Variabiliteit van *Serapias lingua* op een standplaats bij Grazalema (Andalusië, Spanje). Eurorchis 13, 41-44.
- Moore, D.M. in Tutin, T.G. et al (eds). (1980) *Flora Europea* volume 5. Cambridge University Press, Cambridge, UK. pp 343-344.

Ian Phillips
Calle Cabello 7
Málaga 29012
Spain
e-mail: iphillips@attglobal.net

Michael R. Lowe
School House
17, The Village
Brancepeth
Durham DH7 8DG
United Kingdom
e-mail: MichaelRLowe@orchid.freemove.co.uk