

Newly found *Ophrys promontorii* O. Danesch et E. Danesch (*Orchidaceae*), in Croatia, appears to be subendemic trans-Adriatic species

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Abstract

In late April 2023, a group of British naturalists conducted a botanical survey along the Dalmatian coast. Several interesting species of the bee orchids from the *Ophrys sphegodes* complex (*Orchidaceae*) were recorded and photographed. The species *Ophrys promontorii* O. Danesch et E. Danesch, endemic to central and southern Italy, was discovered on the Pelješac Peninsula. It is the first record of this species outside the Italian borders, and a new species in the Croatian flora. Its description and the main information on the species are given.

Keywords: bee orchids, new species, Pelješac Peninsula

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Sažetak

Krajem travnja 2023. godine, grupa britanskih prirodoslovaca provela je botaničko istraživanje na širem području Dalmacije. Zabilježeno je i fotografirano više vrsta kokica iz kompleksa *Ophrys sphegodes* (*Orchidaceae*). Na poluotoku Pelješcu zabilježena je vrsta *Ophrys promontorii* O. Danesch et E. Danesch, endem srednje i južne Italije. To je prvi nalaz ove vrste izvan granica Italije te ona ujedno predstavlja i novu vrstu za floru Hrvatske. U radu se iznosi detaljan opis te ostale važne informacije o vrsti.

Ključne riječi: kokice, nova vrsta, poluotok Pelješac

In April 2023, members of the British Mediterranean Plants and Gardens Society (MPG) visited Croatia. The MPG is a non-profit association run by volunteers who organize botanical tours for their

members across the wider Mediterranean area. From April 22 to April 29, under the guidance of C. & B. Gardner, the flora of the area between Dubrovnik and Mt Velebit was studied and explored.



Figure 1. Distribution map of *Ophrys promontorii* in Italy, and the newly found site (indicated by the red arrow) on the Pelješac peninsula, Croatia (after Romolini & Souche (2012) and Biagioli (2016), modified).

Slika 1. Karta rasprostranjenosti vrste *Ophrys promontorii* u Italiji, i novo otkriveno nalazište na poluootoku Pelješcu u Hrvatskoj (označeno crvenom strelicom) (karta prema Romolini & Souche (2012) i Biagioli (2016), prilagođeno).

On April 24, 2023, the group visited Pelješac Peninsula. In the north-western part of the peninsula, the flora along the margins of the main road and the nearby clearings composed of rocky grasslands and shrubs was investigated. The recorded orchido-flora comprised *Serapias parviflora* Parl., *Orchis anthropophora* (L.) All., *O. italica* Poir., *Ophrys rhodostephanes* Devillers et Devillers-Tersch. and *Op. incantata* Devillers et Devillers-Tersch., all common and well-known species on the peninsula.

Also, several bee orchids with rather large and dark, blackish flowers were found and photographed, but they remained unidentified. Later in the year one of the MPG members, Christopher Earl, posted a short trip report on their website. The author of the present paper accidentally came across that report and identified one of the photographed bee orchids as *Ophrys promontorii* O. Danesch & E. Danesch, a species considered to be endemic to central and southern Italy.

The author of the trip report, C. Earl was contacted in order to possibly provide more details about the trip and about that particular dark big bee orchid. Also, a permission to publish his photos was kindly granted.

Ophrys promontorii O. Danesch et E. Danesch

Ophrys promontorii O. Danesch et E. Danesch is a member of the small *Op. lunulata* species group and it was first described from Foggia, Italy, by Danesch & Danesch (1971). It is often considered a species of recent hybrid origin between *Op. incubacea* Bianca, *Op. garganica* E. Nelson ex O. Danesch & E. Danesch and *Op. tarentina* Götz et H. R. Reinhard. However, this opinion is dubious and disputed by many specialists. Morphologically it is a very stable and distinct species (Delforge 2006, 2016, Baumann et al. 2006, Croce & Nazzaro 2012, Biagioli 2016, Griebel & Presser 2021).

The known distribution of the species is mainly southern and central Italy (Fig. 1). On the Adriatic

side it is present from Apulia to Marche, and on the Tyrrhenian side from Campania to Lazio (Kalteisen & Reinhard 1987, Delforge 2006, 2016, Baumann et al. 2006, Romolini & Souche 2012, Biagioli 2016, Steffan 2018, Griebel & Presser 2021). It is a species of open habitats, but tolerates a moderate shade. It prefers dry to moist alkaline substrates, and usually inhabits short grasslands, meadows, garrigues, scrubs and open woodlands up to 1300 m a. s. l. Recently, a small stand was recorded at 1500 m a. s. l. (Steffan 2018).

Description: medium sized plant with a basal rosette of several greyish-greenish leaves; stem 12-30 cm tall; lax inflorescence with 2-10 (12) medium to large, dark flowers; sepals green, sometimes with a purplish wash, 11-17 mm × 4-6 mm; petals often very large and especially wide, yellowish-green, olive-green to reddish-brown, darker than sepals, broadly lanceolate to elliptical, 7-12 mm × 4-6 mm; lip 9,5-15 mm × 10-15 mm, black-purplish, entire, elongated, elliptical, obcordate,



Figure 2. *Ophrys promontorii*, Pelješac Peninsula (photo by C. Earl).

Slika 2. *Ophrys promontorii*, poluotok Pelješac (fotografija C. Earl).

convex with prominent basal swellings hairless on the inner face, sides turned down and under, marginal hairs very dark, long, blackish to purplish; speculum usually central, simple, shield shaped, rarely loose, imperfect H-shaped, more often formed by 2-4 dots or streaks, glossy blue or grey; appendage small, triangular, greenish to reddish, inserted into a distinct notch; stigmatic cavity rounded, wide, the cavity walls are usually parallel, or rarely slightly pinched at the base, of the same blackish colour as the lip; specular stage is usually absent, or, when present it is reduced, bluish-white; pseudo-eyes are small and blackish (Fig. 2).

Ophrys promontorii is a late flowering species. It starts to flower in late April at warmer sites, but it flowers mostly in May in the majority of the Italian sites, and rarely in June at higher altitudes (Delforge 2006, 2016, Biagioli 2016, Steffan 2018). In Croatia, it was found with a few opened flowers at the end of April, and with several buds to open in early May.

The species is pollinated by a sexual deception pollination strategy typical of the genus. The pollinator of the *Op. promontorii* is *Osmia mustelina* Gerstäcker, 1869 (Delforge 2016, Biagioli 2016). It is a black bee with a metallic blue shimmer. It occurs in warmer areas of Central and Southern Europe, and in Crimea and Turkey (Peters 1978). The species is also present in Croatia (Józan 2009).

Until the present work *Ophrys promontorii* was always considered to be a strictly Italian endemic (Delforge 2006, 2016, Baumann et al. 2006, Croce & Nazzaro 2012, Biagioli 2016). However, the name was already once mentioned in connection with Croatia. A photo of *Op. promontorii* was published in the exhibition catalogue, “*Orchids of the Kaštela Bay Area*“, by Vladimir Golubić from Split. On the first page of that catalogue, the second photo has the caption: *Ophrys promontorii*, Kaštel Gomilica, 28. III. 2001. (Golubić 2002). Unfortunately, that identification was erroneous. The flower depicts an arahnitiform *Ophrys* of the *Op. exaltata* species group. In fact, it represents the more widespread

Op. archipelagi Gözl et H. R. Reinhard. I have personally investigated a wide area around the Split and Kaštela, a place well known to hold some *Ophrys* populations difficult for identification. In this area *Op. archipelagi* and *Op. liburnica* Devillers et Devillers-Tersch. often form hybrid swarms, and individual plants are sometimes difficult to identify. In some of these stands *Op. archipelagi* is often genetically influenced by *Op. liburnica* and the plants deviate slightly from those of Korčula island where they are typical. Golubić's plant belongs to this less typical type of *Op. archipelagi*, and the identification of his plant as *Op. promontorii* cannot withstand detailed examination.

The early phenology of Golubić's plant (March) is not consistent with the late flowering time of *Op. promontorii*. On the other hand, it perfectly matches the early flowering time of *Op. archipelagi*. The lip colour is a rich brown; the speculum is drab, purplish-brownish, reduced to two distal dots and two proximal lines that reach the stigmatic cavity (somewhat untypical for this species, and it is probably this feature, the reduced speculum, that induced Golubić to identify that particular plant as *Op. promontorii*); the stigmatic cavity is strongly pinched at the base; the pseudo-eyes are big, contrasting, greyish, encircled in whitish-green; the floor of the stigmatic cavity is well decorated with the large specular stage connected to the pseudo-eyes. All the mentioned characteristics are strongly different to those of *Op. promontorii* (see above), but they are perfectly consistent with *Op. archipelagi*. After detailed examination we can certainly eliminate Golubić's plant as misidentification, and it appears that Pelješac Peninsula is the only place in which *Op. promontorii* is known to occur in Croatia.

Ophrys promontorii is a very distinctive and well-defined species, and it is the only member of the *Op. lunulata* species group recorded in Croatia. Its morphology is unique, and if the plants are examined carefully there should be no misidentification in the field work.

To the other well-known bee orchids growing on both sides of the Adriatic Sea: *Ophrys neglecta* Parl., *Op. tetraloniae* W. P. Teschner, *Op. lacaitae* Lojac., *Op. biscutella* O. Danesch et E. Danesch, *Op. archipelagi*, *Op. incantata* and *Op. garganica*, we can now safely add *Op. promontorii* to this group of, often rare, trans-Adriatic subendemic orchids. It is proposed to include this species in the official list of the Croatian flora, and photographic material for the Flora Croatica Database is provided.

Conclusion

Ophrys promontorii is a rare trans-Adriatic species in Croatia. So far, in Croatia it is known only from the NW of the Pelješac Peninsula where it is represented by several known plants. The precise location along the main road where the photos were taken, remains to be discovered in the upcoming season. Still, I consider it significant and useful to publish this note. After all, a new species for the Croatian flora was discovered and documented with photographs of a high quality. With this note and photos in mind, perhaps the botanists visiting the Pelješac Peninsula will pay due attention to any possible discovery of more plants and sites of this remarkable bee orchid. In the following season a targeted search needs to be carried out to learn more about this species, its population size, its habitat, potential threat and its protection.

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