

Epipactis leptochila (Orchidaceae): a new species for the Bulgarian flora

Antoaneta S. Petrova & Diana Y. Venkova

Botanical Garden, Bulgarian Academy of Sciences, P.O. Box 664, 1000 Sofia,
e-mail: petrovabotgar1@abv.bg

Received: August 08, 2005 > Accepted: November 08, 2005

Abstract. *Epipactis leptochila* is reported as a new species for the Bulgarian flora on the basis of personal collections and a revision of the specimens of genus *Epipactis* in the herbaria SOM, SO and SOA. There are records from three mountain areas: the Balkan Range (*Central*), Mt Vitosha and Rila Mts. Data about the habitats and populations are given and the threat status is evaluated.

Key words: Bulgarian flora, *Epipactis* (Orchidaceae)

Introduction

Genus *Epipactis* is taxonomically among the most difficult European orchid genera, with a number of new species described in the last decades (Delforge 2001). There have been no special studies of the genus in Bulgaria until recently. Our field investigations show a significant diversity, especially in the beech forests in the Rhodopi and Rila Mts, Mt Vitosha and the Balkan Range. This article reports the discovery of *E. leptochila* (Godfery) Godfery in the country. This species was described from Britain in 1921 and for some decades was considered an Atlantic geoelement, but kept being steadily discovered in a number of Central European countries, reaching eastwards to Poland (Szlachetko 2001), Czech (Holub 1970) and Slovakia (Vlčko & al. 2003). There are data from Slovenia (Jogan 2001) and Croatia (Flora Croatica Database 2005) in the Balkan Peninsula.

Epipactis leptochila has characteristic morphological features and herbarium specimens are comparatively easy for identification. A revision of the samples of genus *Epipactis* was undertaken in the herbaria of the

Institute of Botany, BAS (SOM), Sofia University (SO) and the Agrarian University, Plovdiv (SOA & the collection of the Agrarian University: in the Bulgarian floristic literature usually the acronym PAU is used for this collection) and this supplied same additional information.

Results and discussion

***Epipactis leptochila* (Godfery) Godfery, Jour. Bot., 59: 146-147 (1921) (Figs 1, 3)**

Rhizomatous perennial herb; rhizome long, deep-seated with numerous roots; stems 1–3 (5), 20–60 cm high, flexuous, yellowish-green, shortly pubescent in the upper part; cauline leaves 3–6 (10), *in two rows, yellow-green*, spreading, curved in the base, margins undulate, middle ones broadly lanceolate, 5–11 cm long, 2.5–5 cm wide, 2–3 upper leaves lanceolate; *lower bracts very long – up to 8 cm, like the top leaf*; inflorescence usually long, up to 30 cm, *subunilateral, loose*; flowers 8–35, somewhat campanulate, pendant to subhorizontal, *whitish to yellowish-green*, occasionally *violet-tinted*; sepals and petals spreading, lanceo-



Fig. 1. *E. leptochila*, a general view.

late, acuminate, sepals 10–11 mm long, keeled, petals 8–11 mm long, green, often pink-tinted; the lip whitish, up to 10 mm long; hypochile cup-shaped, reddish brown, shining inside; *epichile whitish*, sometimes pink-tinted, *narrowly cordate*, 4–7 (-9) mm long, 3–5 mm wide, *pointing obliquely forwards*, with two small rounded, usually pinkish swellings at the base, separated by a rather deep groove; anther narrow; clinandre developed; rostellum present in bud, *non-functional and later disappears*; pollinia crumbly, rapidly turn to powdery, disintegrating on the stigma; ovary fusiform, elongate, puberulent, yellowish-green, pedicel 3–5 mm long, *base greenis-yellow*. A self-pollinating species.¹

The existing data prove the distribution of *E. leptochila* in three mountain areas in Bulgaria. The corresponding vouchers are listed below.

The Balkan Range (*Central*): in a beech forest along the road in the Gabrovo – Shipka pass, at about 1000 m, 12.08.1999, with flowers and fruits, LH-63, coll. A. Petrova, SOM 155295; Troyan area, undated, LH-04 (or LH-14), coll. S. Grancharov, sub *E. latifolia* All. var. *longibracteata* Davidov (in sched.), SOM 15340.

Mt Vitoshka: at the margin of a beech forest along the road Sofia – Zlatni Mostove locality, 1200 m, 12.07.1997, with flowers, FN-82, 42°39' N, 23°11' E, coll. A. Petrova & Y. Stojanov, SOM 155296; in a beech forest along the road Sofia – Zlatni Mostove locality, 1050 m, 27.07.1997, with flowers, FN-82, coll. D. Venkova, det. A. Petrova & D. Venkova, SOM 155822 (Fig. 1).

¹ This description is based on personal observations and Delforge (2001). The diagnostic morphological features are given in *italic*.

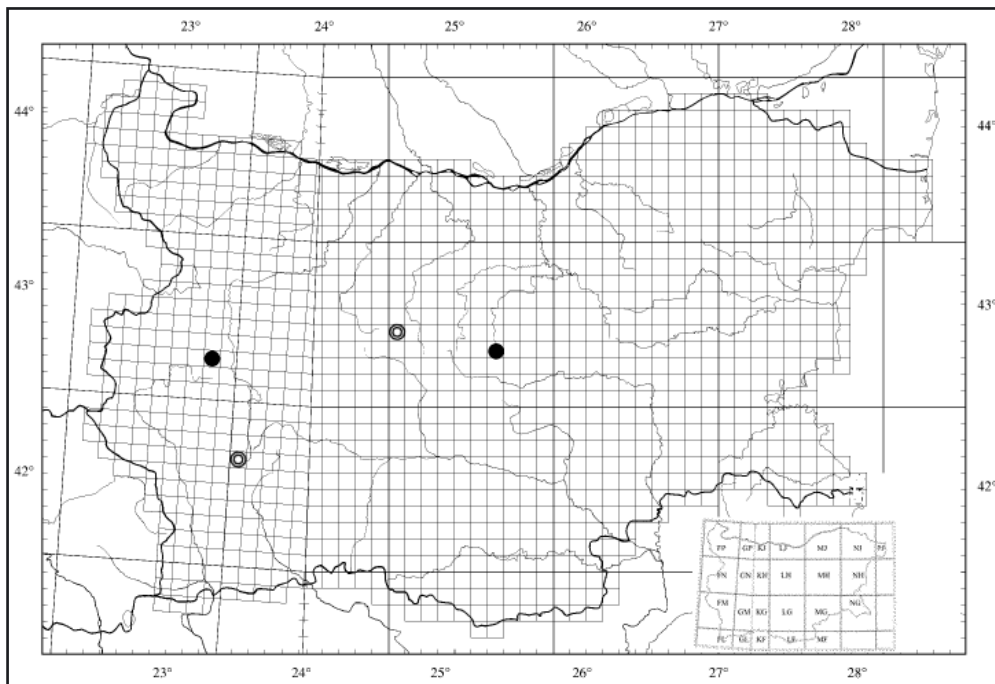


Fig. 2. Map of the localities of *E. leptochila* in Bulgaria.
● personal data
⊙ herbarium data

Rila Mts: in a beech forest along the road Kirilova Polyana–Ribni lakes, between 1500–1600 m, 19.07.1998, with flowers, GM-06, SV (coll. B. Assyov, det. A. Petrova & D. Venkova, SOM 155823).

A map, based on the so far known chorological information, is presented in Fig. 2.

The locality in the Balkan Range, near Shipka pass, is on a steep north-facing slope. The community is a beech forest, with a second floor of *Laurocerasus officinalis* M. Roem. *Epipactis* plants use to grow in places with smaller inclination and deeper humus deposits. The population density is very low: eight plants were discovered on an area of about 2 ha. *E. helleborine* (L.) Crantz was found in the same forest.

The first locality in Mt Vitosha is on a north-facing slope. Although the inclination is great, *E. leptochila* grows in some almost flat spots with humus deposits at the forest margin. Due to greater sunlight along the roadside, there is a cover of different grasses and herbs. A small population of nine individuals was observed here on 100 m². All plants were damaged by insects (Fig. 3) and only three of them had opened flowers. The population was visited again in 1998, when seven plants, five with flowers, were counted.

The second locality in Mt Vitosha is in the same region, at about 3 km distance down the slope, in a small depression in an old, very shady beech forests without a herbaceous floor. Four plants were counted in 1997, three in 1998 at area of about 300 m², and all were flowering.

Conclusion

In our opinion *E. leptochila* is more widely distributed over the country, but definitely is not a common plant. This opinion is based on the fact that in spite of the numerous field investigations in appropriate habitats for *Epipactis* species in the beech belt in mountainous areas in Bulgaria (mostly in the Rhodopi Mts, Mt Vitosha, parts of the Balkan Range, Rila and Pirin Mts) carried out since 1996, these were our only observations of the species. We have made rather extensive personal studies in the area of river Rilska watershed, where Assyov (cited above) made his collection. We have also investigated different parts of the Troyan area, the locality



Fig. 3 Flowers damaged by insects in a population in Mt Vitosha.

of the old collection of Grancharov (possibly dated 1925). Considering the general distribution of the species, as well as its ecology, its spread in the western part of the Balkan Range with its spacious beech woods is the most possible. The altitude range is between 900–1600 m, according to the available information.

On the basis of the available data, the species is rated according to the IUCN criteria (IUCN 2001) as vulnerable [VU B1ab(iii)+2ab(iii)] in the national Red List on the grounds of its limited extent of occurrence and area of occupancy, and considering the strong decline of beech forests in Bulgaria. This cautious evaluation is made without relying on the quantitative population characters because of insufficient available data.

Acknowledgements. The authors are grateful to Mr. Y. Stoyanov for his assistance during some of the field investigations and to Mr. B. Assyov for providing the herbarium specimens of *Epipactis*.

References

- Delforge, P.** 2001. Guide des Orchidees d'Europe, d'Afrique du Nord et du Proche-Orient. Delachaux & Niestlé S. A., Lausanne & Paris.
- Flora Croatica Database.** 2005. (Department of Botany, Faculty of Science, University of Zagreb): <http://hirc.botanic.hr/fcd> (accessed 24.07.2005).
- Holub, J.** 1970. *Epipactis leptochila* (Godf.) Godf. und *Epipactis muelleri* Godf. – neue Arten der tschechoslowakischen Flora. – Preslia, **42**: 330-349 (in Czech).
- IUCN.** 2001. IUCN Red List Categories and Criteria. Version 3.1. – IUCN Species Survival Commission. IUCN, Gland & Cambridge.
- Jogan, N.** (ed.). 2001. Materials for the *Atlas of Flora of Slovenia*. Center for Mapping flora and fauna, Ljubljana.
- Szlachetko, S.** 2001. Flora of Polish orchids. MULTICO Oficyna Wydawnicza, Warszawa.
- Vlčko, J., Díte, D. & Kolník, M.** 2003. Orchids of Slovakia. ZO SZOPK Orchidea, Zvolen.