

## *Hypericum boehlingraabei* (*Hypericaceae*), a new species from the northern Peloponnese (Greece)

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**Abstract.** *Hypericum boehlingraabei* (*Hypericaceae*) is described as a new species endemic to Greece and illustrated by photographs. It occurs on rocks in a few localities in north central Peloponnese, and resembles *H. taygeteum* from Mt Taigetos and Mt Parnon in the south Peloponnese. Its similarities with *H. rumeliacum* are also noted; the latter occurs in the Balkans and Romania.

**Key words:** Balkans, endemic, Greece, *Hypericum*, new species, Peloponnese

### Introduction

At least 40 species and subspecies of the large genus *Hypericum* L. (*Hypericaceae*) occur in Greece with several taxa endemic to the country. However, hardly any new species have been described and added to the Greek flora in recent years, an exception being *H. taygeteum* Quézel & Contandriopoulos which was described in 1967. The area in the vicinity of Evrostina (formerly known as Zachuli) is in the northern foothills of Mt Killini and Mt Chelmos, two floristically rich mountains in north central Peloponnese. This region has been botanically investigated for some years by Uwe Raabe (Marl, Germany) and found to be on par with the Vou-raikos gorge (between the towns of Kalavrita and Diakopto) in terms of numbers of local endemics and other rare plants. Our new *Hypericum* originates from this area.

***Hypericum boehlingraabei*** Kit Tan, Iatrou, Vold & Strid, **sp. nov.** (Figs. 1, 2 & 5).

**Diagnosis:** Species nova a *Hyperico taygeteo* foliis glandulis intramarginalibus nigris obsitis, sepalis glanduloso-fimbriatis et petalis cum glandulis nigris differt. A *H. rumeliaco* habitu prostrato, folio forma, folio margini non revoluto, foliis glandulis nigris superficialibus nullis et seminibus hyalino-papillosis discrepat.

Caespitose glabrous perennial, less than 6 cm tall with numerous, slender, angular-terete, ascending-procumbent stems (1-)3–10 cm long, not rooting at lower nodes. Leaves opposite, simple, herbaceous, shortly petiolate to sessile, mid-green to glaucous, entire, smaller towards base; middle cauline leaves broadly ovate to elliptic-orbicular, 4–10 × 2.5–9 mm, obtuse-rounded at apex, truncate or rounded at base, with scattered translucent glandular dots on surface and distinct black intramarginal glands. Inflorescence 1–5(–8)-flowered. Bracts lanceolate, 1.5–3 mm,



Fig. 1. *Hypericum boehlingraabei* at Korakofolia (photo U. Raabe).

with 4–6 black glandular-tipped fimbriae on each side. Sepals 5, oblong-ovate, 3.5–4.5 × 1–2 mm, subacute, black glandular-fimbriate, with some translucent and black glandular streaks and a few superficial black glandular dots. Petals 5, free, narrowly oblong-ovate, 6–15 × 2.5–6 mm, obtuse, reddish in bud, bright yellow at anthesis, reddish or reddish-brown beneath veined darker, with a few scattered black glands. Stamens numerous, in 3 fascicles; anthers globose, c. 0.3 mm, yellow (drying purplish), lacking black glands. Pedicels recurved after anthesis. Carpels 3. Capsule ovoid, c. 4 mm, ± smooth, dehiscent. Seeds cylindrical-oblong, c. 1.5 × 0.5 mm, obtuse-rounded at both ends, incurved on one side, reticulate-striate, hyaline-papillose throughout, greyish to blackish-brown.

*Flowering* late May to late July; *fruiting* July to October.

**Type.** Greece: Nomos Korinthias, Eparchia Korinthias, Mavro Oros, crevices of shaded conglomerate rock at summit, with *Arenaria cretica* and *Gyp-*

*sophila nana*, 1680–1720 m, 38°02' N, 22°25' E, 21 July 2009, Kit Tan & G. Vold 30773 (**holotype** C; **isotypes** ATH, LD, herb. Kit, herb. Strid).

#### Other specimens collected

Nomos Achaia, Eparchia Achaia: Seliana, south of Karkara, NW of Prof. Ilias, ca. 1400 m, 25 May 2007, Raabe (herb. Raabe).

Nomos Korinthias, Eparchia Korinthias: Korakofolia, rocks, 10 May 2006, Raabe (herb. Raabe); Korakofolia, rocks opposite Skoufia, 24 May 2007, Raabe (herb. Raabe, MSTR); *loc. ibid.*, 25 May 2007, Raabe (herb. Raabe); *loc. ibid.*, 9 May 2009, Raabe (seeds, herb. Raabe); *loc. ibid.*, 7 November 2009, Ristow & Raabe (herb. Raabe); *loc. ibid.*, 28 May 2010, Raabe (B, MSTR, W, UPA, herb. Böhling, herb. Kalheber, herb. Raabe); NE to NNE-facing calcareous conglomeratic rock walls, northern slope of Korakofolia, 1400–1450 m, 38°02' N, 22°24' E, 14 June 2006, flowering, Böhling 13682a & b (herb. Böhling); *loc. ibid.*, 28 August 2006, fruiting or sterile, Böhling 14334-14337 (herb. Böhling) & Böhling & Iatrou (herb. Iatrou).

Nomos Korinthias, Eparchia Korinthias: Mavro Oros, rocks on northern side, east of Skoufia, 1 May 2007, Raabe (herb. Raabe); rocks just below top of Mavro Oros, 8 May 2007, Raabe (herb. Raabe); rocks on Mavro Oros near small church, 8 May 2007, Raabe (herb. Raabe); east of Skoufia, 17 May 2007, Raabe (B, MSTR, herb. Raabe); rocks opposite Korakofolia, 22 May 2007, Raabe (herb. Raabe); rocks on the western side, 22 May 2007, Raabe (herb. Raabe); rocks on the northern side of Skoufia, 25 May 2007, Raabe



Fig. 2. *Hypericum boehlingraabei* at Korakofolia (photo U. Raabe).

(B, MSTR, UPA, herb. Raabe); Mavro Oros, N-facing slope and overhang, conglomerate rock crevices, 1680 m, 38°02'N, 22°25'E, 2 May 2009, Kit Tan & G. Vold 30765a (herb. Kit); *loc. ibid.*, 30 October 2009, Kit Tan & G. Vold 30849 (herb. Kit).

### Ecology

The new species of *Hypericum* is not uncommon on Mavro Oros and on the rocks of the northern slopes of Mt Korakofolia at 1200–1450 m, where it grows on compacted Tertiary conglomerate. At the Korakofolia locality, the habitats are within reach of goats and although the plants are exposed on the cliffs they are sheltered from severe northerly winds and extreme summer drought by being often in small caves, hollows and rock pockets on the east, west and northern sides of vertical rocks. Chasmophytes growing nearby include *Arenaria cretica* (two varieties), *A. filicaulis*, *Asperula arcadiensis*, *Campanula asperuloides*, *Euphorbia herniariifolia*, *Gypsophila nana*, *Silene auriculata* and *S. parnassica*. Other taxa occupying the larger and deeper cracks and

fissures of the rock walls are *Achillea holosericea*, *A. umbellata* and *Campanula versicolor*. In the vicinity of the new species at Mavro Oros, the plants collected by Kit Tan and Gert Vold represent typical mountain limestone flora in north central Peloponnese. They include *Achillea umbellata*, *Arenaria cretica*, *Asperula arcadiensis*, *Asplenium fissum*, *Campanula rotundifolia* s.l., *Erodium chrysanthum*, *Euphorbia herniariifolia*, *Gypsophila nana*, *Hieracium pannosum*, *Jurinea mollis*, *Mycelis muralis*, *Pimpinella tragium*, *Potentilla speciosa*, *Silene auriculata*, *Thesium parnassi*, *Valeriana olenaea* and *Viola chelmea*. There was also a *Silene* closely related to *S. parnassica* which could well be a new species, having a combination of characters not seen in other members of the group.

### Affinities

*Hypericum boehlingraabei* has a particular combination of characters not seen in any *Hypericum* species (Table 1). Its leaf shape and prostrate trailing stems forming a loose mat on the rock surface provide a superfi-

**Table 1.** Morphological differences between *H. boehlingraabei*, *H. rumeliacum* and *H. taygeteum*.

Characters	<i>H. boehlingraabei</i>	<i>H. rumeliacum</i>	<i>H. taygeteum</i>
stems	ascending-procumbent to prostrate-trailing	ascending to suberect	ascending-procumbent to prostrate-trailing
middle cauline leaves	broadly ovate to elliptic-orbicular, 4–10 × 2.5–7 mm margin not revolute with scattered translucent glands black intramarginal glands present  black superficial glands absent herbaceous	narrowly oblong-lanceolate to ovate, 10–20 × 3–10 mm margin revolute with scattered translucent glands black intramarginal glands present  black superficial glands present subcoriaceous	ovate to elliptic-ovate, 2–8 × 1–4 mm margin not revolute with scattered translucent glands black intramarginal glands absent, translucent intramarginal glands present black superficial glands absent subcoriaceous
inflorescence	1–5-flowered	1– several-flowered	1–3-flowered
bracts	with 4–6 glandular fimbriae on each side	with 8–12 glandular (gland-tipped) fimbriae on each side	without any glandular fimbriae
sepals	glandular-fimbriate at margin black superficial glands and glandular streaks present	glandular-fimbriate at margin black superficial glands and glandular streaks conspicuous	entire, not glandular-fimbriate black superficial glands and glandular streaks absent
petals	5–6 mm black glands present	8–12 mm black glands present	6–8 mm black glands absent
seeds	cylindrical-oblong, c. 1.5 × 0.5 mm, obtuse-rounded at both ends, incurved on one side, hyaline-papillose throughout, reticulate-striate, yellowish ripening dark greyish-brown	shortly oblong, c. 1 × 0.6 mm, obtuse-rounded at both ends, slightly incurved on one side, longitudinally ribbed and scalariform-foveolate, pale brown	cylindrical, 1.7–1.8 mm, obtuse-rounded at both ends, incurved on one side, hyaline-papillose at base, reticulate-striate
distribution	north central Peloponnese	Balkan Peninsula	south Peloponnese

cial resemblance to *H. taygeteum* Quézel & Contandriopoulos (*Hypericum* sect. *Triadenioidea* Jaub. & Spach) which is endemic to the south Peloponnese (Taigetos and Parnon ranges including the low mountains at the southern end of Parnon). The latter (Fig. 3) has 1–3(-5) flowers, more coriaceous leaves without black intramarginal glands, entire (not glandular-fimbriate) bracts and sepals, and petals lacking black glands. However, seed morphology of both species is very similar. Some affinities of *H. boehlingraabei* may also lie with *H. rumeliacum* Boiss. (Fig. 4), a Balkan species extending to beyond the Danube in Romania, near Kalafat (Ciocârlan 2000). In Greece it is common in the mountains and represented by two subspecies, with subsp. *rumeliacum* occurring mainly in the northern part of the country, and subsp. *apollonis* (Boiss. & Heldr.) Robson & Strid from Sterea Ellas to the S Albanian border, extending locally to N Peloponnese (see Fig. 5). *Hypericum rumeliacum* is usually a larger plant with subcoriaceous leaves revolute at the margin and black intramarginal and superficial

glands. The inflorescence of *H. rumeliacum* is 1–several-flowered; the bracts with 8–12, up to 1 mm long, reddish-brown or black glandular-tipped fimbriae on each side. The sepals are also black- or reddish-brown glandular-fimbriate, with superficial black glands and black glandular streaks. The petals of *H. rumeliacum* are 8–15 mm and with scattered black glands. *Hypericum boehlingraabei* differs from *H. rumeliacum* by its prostrate stem habit, leaf shape, non-revolute leaf margin, and absence of superficial black glands on leaf surfaces. The bracts have fewer and shorter black glandular-tipped fimbriae on each side. The seeds are longer (c. 1.5 mm, not c. 1 mm) and with conspicuous hyaline papillae, and in this respect, they are more similar to the seeds of *H. taygeteum* than to those of *H. rumeliacum*. The habitats of the two taxa are also different. *Hypericum boehlingraabei* grows only on rocks and shady rock overhangs, probably in its own specialized micro-climate, protected from extreme drought and frost whereas *H. rumeliacum* inhabits open rocky places.



Fig. 3. *Hypericum taygeteum* from the Langada gorge, Mt Taigetos (photo A. Strid).



Fig. 4. *Hypericum rumeliacum* from northern Pindos (photo A. Strid).

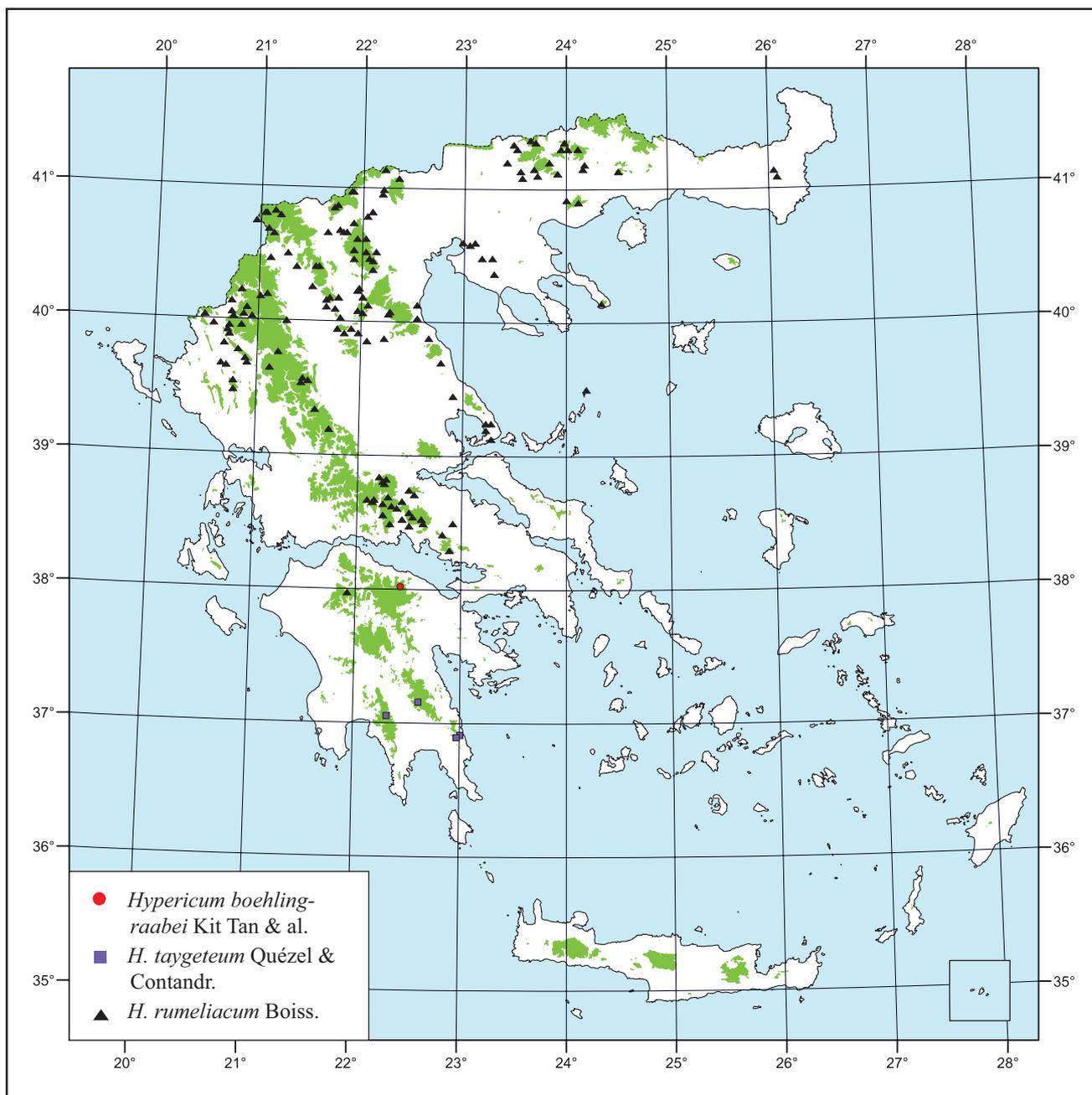


Fig. 5. Distribution of *Hypericum boehlingraabei*, *H. taygeteum* and *H. rumeliacum* in Greece.

### Eponymy

Named after Uwe Raabe (Marl, Germany) who has during the past several years, studied in detail the flora of the area situated at the border of the northern foothills of Mt Killini and Mt Chelmos, and was the first to find this species in May 2006.

Böhling stated he was also the first to find it with Raabe and so the epithet bears both their names.

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### References

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