

## *Hypericum sechmenii* (Hypericaceae), a new species from central Anatolia, Turkey

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*Hypericum sechmenii* Ocak & Koyuncu sp. nova (Hypericaceae) is described and illustrated from the peak of Arayit Mountain in central Anatolia, Turkey. The species grows on limestone rocks in B3 Eskişehir province. It is closely related to *H. minutum* and *H. huber-morathii*, the latter an endemic confined to central Anatolia. Diagnostic morphological characters are discussed. The pollen characteristics of three species were examined by SEM.

Key words: Hypericaceae, *Hypericum*, new species, taxonomy

### Introduction

The genus *Hypericum* (Hypericaceae) consists of nearly 500 species. Turkey is one of the centres of diversity of the genus (Tokur 1988), being represented by 19 sections, 84 species, 11 subspecies and four varieties in the country (Robson 1967, 1996, Tutin 1968, Dönmez 2000).

The species described here belongs to *Hypericum* sect. *Adenosepalum*, which has 28 species (Robson 1996), eight of which occur in Turkey: *H. montanum*, *H. lanuginosum*, *H. atomarium*, *H. cuisinii*, *H. huber-morathi*, *H. minutum*, *H. formosissimum*, plus the new species. The genus was revised by Robson (1967) for the *Flora of Turkey*, and 15 new species have since been described from the country (Robson 1967, 1988, Dönmez 2000).

During botanical trips in 2005 and 2006 to the Günyüzü area (Eskişehir), we encountered some peculiar specimens of *Hypericum*. They

were flowering and fruiting, and grew in rocky places at an altitude of 1750–1820 m. After studying the specific descriptions of *Hypericum* in Boissier (1867), Robson (1967), Tutin (1968), Tokur (1988), Robson (1988), Dönmez (2000), Potoğlu Erkara and Tokur (2004) as well as comparing the material with specimens in the herbaria AIBU and EGE, it became clear that the specimens represented an undescribed species.

***Hypericum sechmenii* Ocak & Koyuncu, sp. nova (Fig. 1)**

*H. minutum* affinis, sed foliis imbricatis, ovatis vel ellipticis (non oppositis, late ovatis vel suborbicularibus), inflorescentia floribus 1–3 (non 3–5), sepalis ordinate ciliatis (non irregulare ciliatis vel subintegris), differt.

TYPE: Turkey. B3 Eskişehir: Günyüzü, Arayit Dağı,



**Fig. 1.** *Hypericum sechmenii* in flower (holotype specimen).

1750–1820 m, rock crevices, 39°18.243'N, 31°44.851'E, 10.VI.2006 A. Ocak 5345 (holotype Eskişehir Osmangazi Univ. Herb.; isotypes GAZI, HUB).

**ETYMOLOGY.** The epithet honours Prof. Dr. Özcan Seçmen, a Turkish ecologist and taxonomist.

Perennial herb. Stem 3–6(–8) cm tall, caespitose, erect, glabrous. Leaves 2–5 mm, sessile, entire, ovate to elliptic, the upper larger, cuneate, all densely imbricate, subcoriaceous, with numerous superficial pale glands and a few intramarginal black ones. Inflorescence subcorymbose, 3–5 flowered. Bracts long glandular ciliate. Sepals ca. 2 mm, oblong, acute to obtuse, regularly glandular ciliate, with a few superficial black dots and amber lines and/or dots. Petals

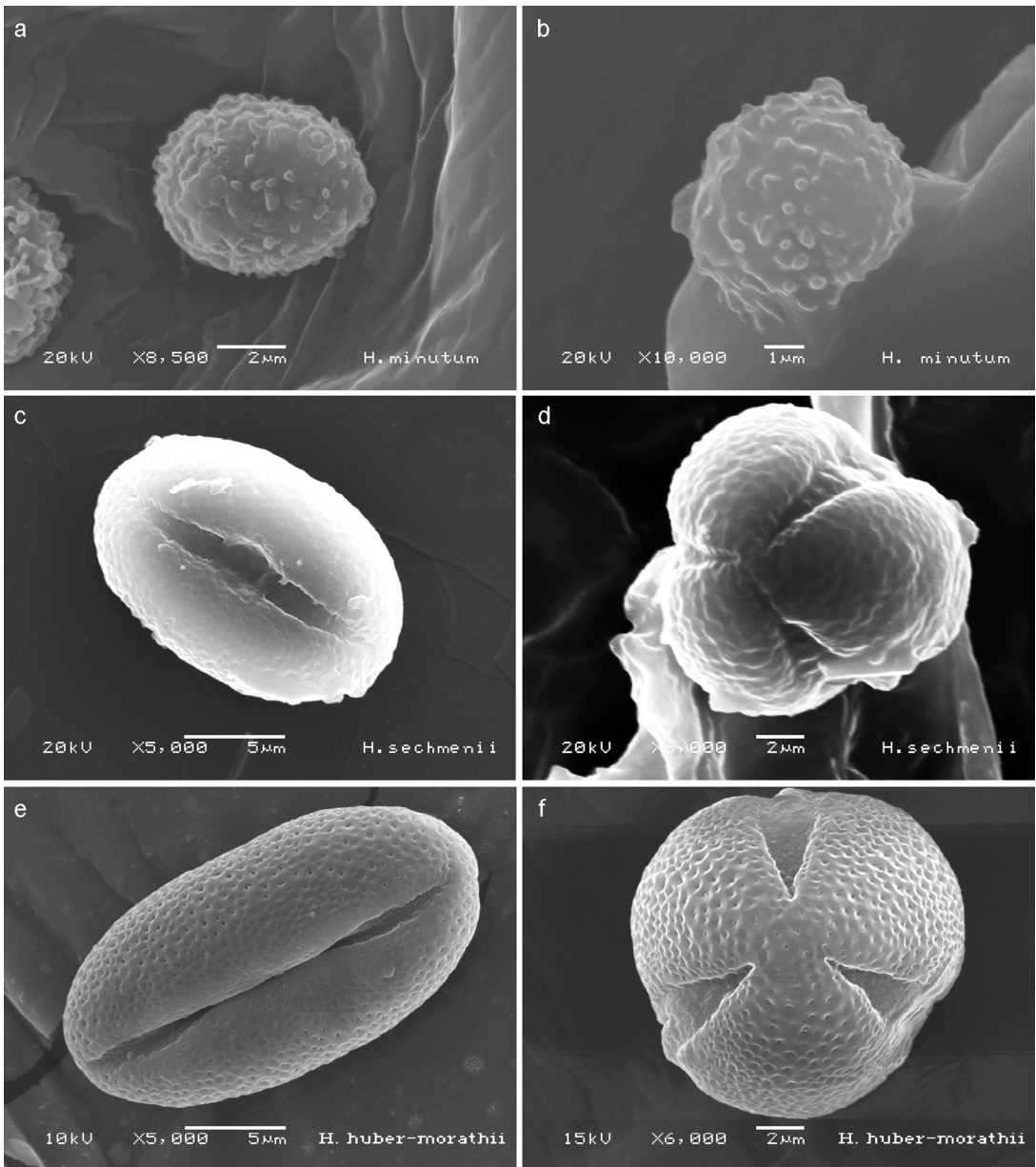
4–7 mm, with a few black marginal glands and superficial amber dots or lines. Capsule 3–4 mm, ovoid, with few interrupted longitudinal vittae. Seed linear foveolate to subscalariform. Flowering in June–July, fruiting in July.

*Hypericum sechmenii* is easily distinguished from the morphologically closest taxa *H. minutum* and *H. huber-morathii*, the latter a local endemic in Turkey, by the imbricate leaves, number of flowers and flowering time, etc. (Fig. 1 and Table 1).

**Distribution and habitat ecology.** Irano-Turanian element, endemic to Eskişehir province, altitude 1750–1820 m. *Hypericum sechmenii* grows on limestone rocks on Arayit Mountain

**Table 1.** Morphological comparison of *Hypericum sechmenii* with *H. minutum* and *H. huber-morathii*.

Characters	<i>H. sechmenii</i>	<i>H. minutum</i>	<i>H. huber-morathii</i>
Stem length	3–6 cm	1–3 cm	8–10 cm
Leaves	imbricate, ovate to elliptic	opposite, broadly ovate or suborbicular	opposite, ovate–oblong to broadly ovate
Inflorescence	3–5 flowered	1–3 flowered	3–12 flowered
Bracts	long and regularly glandular ciliate	glandular denticulate or shortly ciliate	long and regularly glandular ciliate
Sepals	regularly ciliate with few (2–3) superficial black dots	irregularly ciliate to subtentire with numerous superficial black dots	acute to obtuse with numerous superficial black dots
Petals	with superficial amber dots or lines	with numerous amber superficial glands	with only superficial black dots (sometimes)
Flowering	June–July	July	June
Distribution	Irano-Turanian	Mediterranean	Mediterranean



**Fig. 2.** SEMs of pollen grains (**a**, **c** and **e** equatorial views; **b**, **d** and **f** polar views). — **a** and **b**: *Hypericum minutum* (A. Güner 12761, AIBU). The pollen grains are tricolporate, scabrate, amb shape triangular, pollen shape spheroidal-prolate. P = 6.6  $\mu\text{m}$ , E = 5.3  $\mu\text{m}$ , clg = 3.3  $\mu\text{m}$ , clt = 1.6  $\mu\text{m}$ , plg = 1.2  $\mu\text{m}$ , plt = 0.93  $\mu\text{m}$ , t = not measured, Ex = 0.8  $\mu\text{m}$ . Microspine length 0.6  $\mu\text{m}$ , spinule width 0.4  $\mu\text{m}$ . Exine tectatae-scabratae 45 microspinae in 100  $\mu\text{m}^2$  and average distance between to spinules 0.26  $\mu\text{m}$ . — **c** and **d**: *H. sechmenii* (from the holotype). The pollen grains are tricolporate, amb shape triangular, pollen shape spheroidal-prolate. P = 17.2  $\mu\text{m}$ , E = 11.5  $\mu\text{m}$ , clg = 12.2  $\mu\text{m}$ , clt = 2.4  $\mu\text{m}$ , plg = 2.5  $\mu\text{m}$ , plt = 2.2  $\mu\text{m}$ , t = 1.7  $\mu\text{m}$ , Ex = 1.5  $\mu\text{m}$ . Exine tectatae-reticulatae. — **e** and **f**: *H. huber-morathii* (*H. Altınözlü* 1855, HUB). The pollen grains are tricolporate, amb shape triangular, pollen shape spheroidal-prolate. P = 22.40  $\mu\text{m}$ , E = 11.73  $\mu\text{m}$ , clg = 18.75  $\mu\text{m}$ , clt = 1.44  $\mu\text{m}$ , plg = 2.88  $\mu\text{m}$ , plt = 1.73  $\mu\text{m}$ , t = 2.8  $\mu\text{m}$ , Ex = 1.4  $\mu\text{m}$ . Exine tectatae-reticulatae. The abbreviations: P = polar axis, E = equatorial axis, clg = length of colpus, clt = width of colpus, plg = length of porus, plt = width of porus, t = apocolpium, Ex = exine.

with *Aethionema subulatum*, *Hesperis kotschyi*, *Hypericum confertum* subsp. *confertum*, *Asyneuma compactum*, *Silene falcata*, *Ononis adenotricha* subsp. *adenotricha*, *Stachys lavandulifolia* var. *lavandulifolia*, *Scorzonera tomentosa*, *Euphorbia herniarifolia*, *Linum cariense*, *Chaenorhinum minus*, and *Asperula nitida* subsp. *hirtella*.

The pollen surface, size, and exine ornamentation of *H. sechmenii* differ from those of *H. minutum* and *H. huber-morathii* (see Fig. 2).

REPRESENTATIVE SPECIMENS EXAMINED. — *Hypericum minutum*. Turkey. C2 Denizli, Bozdağ 18.VI.1968 A. Güner 12761 (AIBU). — *H. huber-morathii*. Turkey. C3 Konya, Beyşehir, İslibucak, 4.VII.1998 H. Altınözlü 1855 (HUB).

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