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Research Note

A New Species From Southern Anatolia: *Stachys cydni* Kotschy ex Gemici & Leblebici

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Abstract: A new *Lamiaceae* species, *Stachys cydni* Kotschy Gemici & Leblebici is described from the Bolkar Mountains (İçel) in southern Anatolia. This species grows in rock crevices at an altitude of 1450-1560 m. The diagnostic features, a detailed description and a figure of the species are given with a discussion of its taxonomy.

Key Words: *Stachys, Lamiaceae,* plant taxonomy, plant systematics, Flora of Turkey.

Güney Anadolu'dan Yeni Bir Tür: *Stachys cydni* Kotschy ex Gemici & Leblebici

Özet: Güney Anadolu'da Bolkar Dağları'ndan (İçel) yeni bir *Lamiaceae* türü (*Stachys cydni* Kotschy ex Gemici & Leblebici) betimlenmiştir. Tür 1450-1560 m'ler arasında, kaya çatlaklarında yetişmektedir. Makalede bu türün ayırıcı morfolojik karakterleri belirtilmiş, ayrıntılı tanımı yapılmış, şekli verilmiş ve taksonomik durumu tartışılmıştır.

Anahtar Sözcükler: *Stachys, Lamiaceae,* bitki taksonomisi, bitki sistematiği, Türkiye Florası.

Introduction

In Flora of Turkey, somu sterile Stachys specimens have been described by Bentham as Stachys inflata; however, Kotschy named the specimens collected from the same locality Stachys cydni "nomen nudum" (1). During field studies carried out in the Bolkar mountains between 1988 and 1997, we were, able to collect flowered Stachys specimens for the first time in a small area near Şahinkaya to the east of the Çoçak Stream. In 1997, we came across the same species again in a small area near the Manastır area of Çamlıyayla and collected seeded samples. Even though the collected specimens were somewhat similar to S. inflata described in Flora of Turkey (1), we noticed that there were significant differences.

Materials and Methods

About 15 plants and 100 seed samples were collected from a single locality where the plant displayed optimum growth. Currently, these specimens are preserved in the Herbarium of Ege University (İzmir). We have also compared our specimens with the S. inflata material collected by Adıgüzel (Adıgüzel 1501) from Iran (Shabestar, Till area, Mişov succession, 1850 m) on June 25, 1994.

Description

Stachys cydni Kotschy ex Gemici & Leblebici, spec. nova (Sect. *Ambleia* Bentham) fig. 1.

Affinis Stachys kotschy Boiss. & Hohen. sed folia paulo longa et paulo angusta (non ovata vel elliptica), (17-) 20-35 (-44) mm longa, 5-10 mm lata {non 15-20 (-35) mm longa, 10-20 mm lata}; verticillastri remoti 1-3 cm distanti (non approximati vel rarius remotiusculi), hracteae lineari (non setacea), calyx 8-16 mm longus (non 8-9 mm longus), dentes triangulari-lanceolatis (non lanceolatis) differt.

Plant suffrutescent perennial, 10-20 cm high, without basal rosettes. Root rhizomatous and woody, 2-7 mm wide, thicker in its upper parts. Stem 2-4 mm wide, woody at the base, much branched from basal part upwards, terete, glabrous; bark dark brown, falling off in small pieces. Flowering stem numerous, simple, 10-20 cm, ascending, weakly striate, densely covered white-tomentose with dendroid hairs. Cauline leaves 5-10 mm; margin entire, apex obtuse to acute, rotundate or cuneate at base; greenish-grey above weakly domentose, densely white-tomentose beneath. Floral leaves subsessile, lanceolate, longer than verticillasters. Verticillasters 2-4 (-5), remote, 1-3 cm distant, 2-6 flowered. Bracteoles inconpicuous, linear, herbaceous, 2.5 mm, densely white-

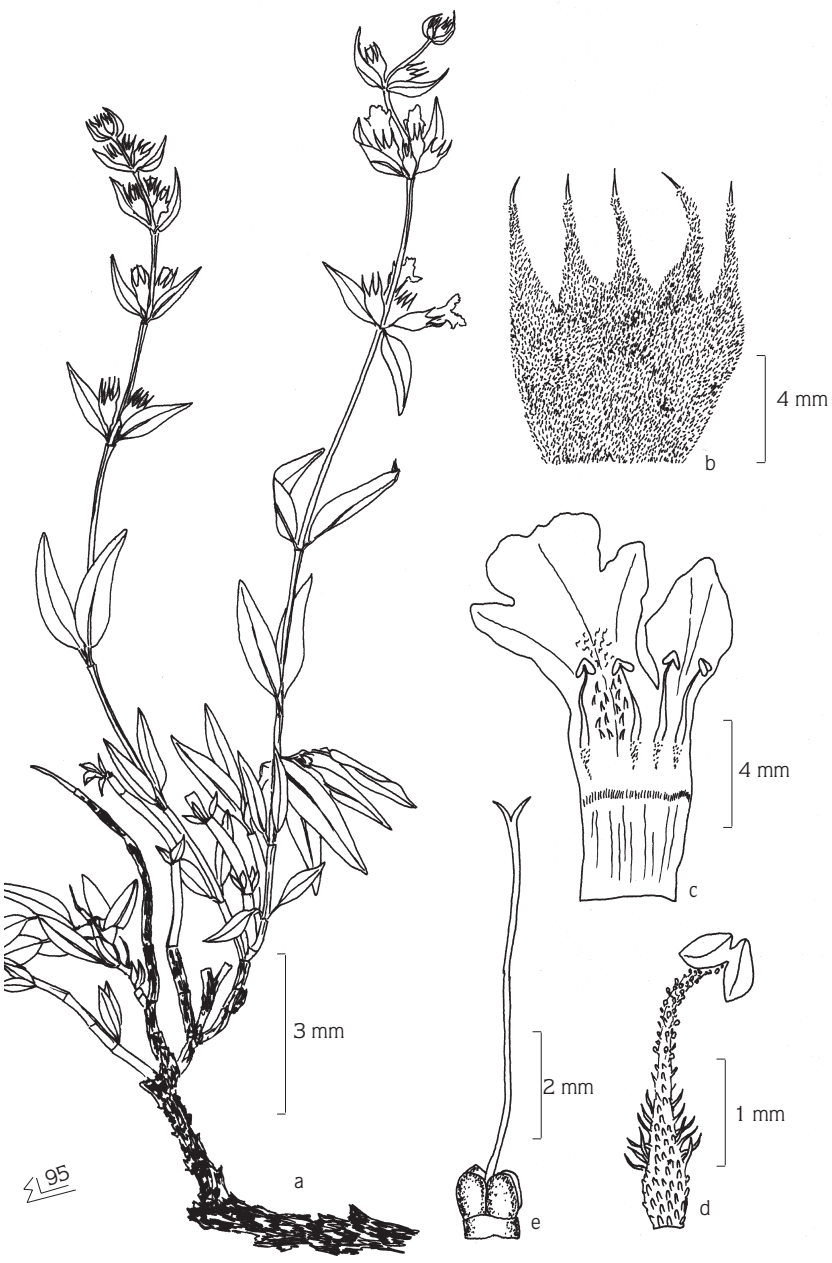

Figure 1. Stachys cydni Kotschy ex Gemici et leblebici a. habit, b. dissected calyx, c. dissected corolla, d. stamen, e. pistil.

tomentose. Pedicel up to 1.5 mm. Calyx ± campanulate, not inflated, distinctly 10-veined with indistinct nervules between veins, 8-11 mm, long including teeth), covered with densely white-tomentose outside, regular; tube gladrous inside; teeth erect, not incurved in fruit, subequal, densely white-tomentose outside and inside, narrowly triangular-lanceolate, 3-4.5 mm; with brownish and glabrous mucro up to 0.5 mm. Corolla pale rose, distinctly bilabiate, 12-15 mm, annulate; densely white-tomentose hairs outside, upper part of limbs glabrous and white spotted; tube not exerted from the calyx. Stamens included, filaments glandular, papillose and ciliate at the middle, thecae subparallel.. Nut ovate-triangular glabrous, black.

Type: C5 İçel; Arslanköy, Çoçakdere, Şahinkaya region, 1560 m, crevices of calcareous rocks. 07.06.1995, Gemici 16079 (Holo and Iso EGE); İçel; Çamlıyayla, Payam, Manastır area rocky calcareous crevices, 1450 m, 26.07.1997, Gem. 8730 (seed).

Table 1. Comparison of diagnostic morphologic characters of *S. cydni, S. kotschy* and *S. inflata*

Characters/species	*S. cydni*	*S. kotschy*	*S. inflata*
Flowering stem	10-20 cm	10-20 cm	16-50 cm
Cauline leaf shape	ovate-elliptic, petiolate	ovate-elliptic, petiolate	lanceolate to narrowly ellipitic, sessile
Cauline leaf size (mm)	17-44x5-10	15-20x10-20	8-40x3.5-12
Flora leaves	subsessile, longer than verticillasters	subsessile, longer than verticillasters	sessile, shorter than verticillasters
Verticillaster	remote, 1-3 cm distant 2-6 flowered	approx, rarely remote, 4-6 flowered	remote, 1-5 cm distant 4-8 flowered
Bracteoles	linear	setaceus	linear-lanceolate
Calyx shape	campanulate	campanulate	tubular, inflated
Calyx size (mm)	8-16	8-9	8-17
Calyx teeth	triangular-lanceolate	lanceolate	triangular
Calyx teeth (in fruit)	erect	erect or divergent	incurved
Corolla tube from the calyx	included	included	subexerted
Corolla size (mm)	12-15	12-15	20-24
Corolla colour	rose	rose	pink
Nutlets	ovate-triangular	?	oboviod

Phenology

In the field, the newly identified *S. cydni* flowers between May 15 and July 15. The seed samples from the Manastır area of Çamlıyayla were collected on July 26, 1997. It was observed that generally one seed develops in each ovarium.

Ecology and Distribution

The newly identified *S. cydni* species is an endemic Eastern Mediterranean (mountain) element. The dominant vegetation of the locality where the species grows is a mixed forest of *Pinus nigra* ssp. *pallasiana* and *Cedrus libani.* The species is found in limestone crevives in open areas within the forest mentioned above. Since it is a persistent limestone dweller, the new species may be regarded as calcicolous. Further, it is a chasmophyte and thus displays xerophytic features. The other taxa of the locality are *Potentilla speciosa, Stachys rupestris, Inula heterolephis, Galium canum, Scutellaria orientalis, Rosularia libanotica, Dianthus zonatus, Michauxia campanuloides, Sedum album.* These species are also chasmophytes, found on limestone rocks.

The new *S. cydni* species is a characteristic member of the "*Hypericum vaccinifollium* and *Mindium thyrsoideum* Quezel 1973" association and the "*Campanula trachyphylla* Quezel 1973" subassociation. In terms of syntaxonomy, the above association belongs to the "*Onosmiom mutabile* Quezel 1973" alliance, "*Silenetalia odontopetalae* Quezel 1973" order and "*Asplenietea rupestria* Quezel 1973" class. However, the charcteristic units mentioned above generally exhibit limited local distribution with discontinuities and very low frequencies. Consequently, the authors believe that there are certain problems concerning this classification.

Discussion

Contrary to Flora of Turkey (1), *S. cydni* does not exhibit similatiries to *S. inflata.* İnstead, the new species is closer to *S. kotschy* Boiss. & Hohen. which grows in southwestern Iran and northwestern Iraq (2). The diagnostic morphological characteristics of these three species are given in Table 1.

The new species is obviously different from *S. inflata.* These distinctive differences are as follows (1): Cauline leaves petiolate (not subsessile to sessile), narrowly ovate-elliptic (not lanceolate to narrowly elliptic); floral leaves subsessile and longer than verticillasters (not subsessile and shorter than verticillasters); calyx campanulate (not inflated), up to 11 mm (not up to 17

mm), teeth erect in fruit (not incurved); corolla pale rose (not pink), up to 15 mm (not 20-24 mm), tube included from the calyx (not subexerted); nuts ovate-triangular (not obovate).

On the other hand, the new species also exhibits some features that are different from those of *S. kotschy:* Verticillasters distant (not approximate and rarely remote), cauline leaves (-17) 20 x 35 (-44) mm {15-20 (-35) x 10-20 mm}; calyx size 8-16 mm (not 8-9 mm), teeth triangular-lanceolate (not only lanceolate).

The new *S. cydni* species evidently belongs to section "*Ambleia* Bentham" which is described by the following characteristics according to Bahattacharjee (1): suffruticose perennials without hasal rosettes; xerophytic; indumentum tomentose with dendroid hairs; leaves lanceolate; bracteoles linear, herbaceus; calyx regular, campanulate, teeth subequal, mouth with ring of hairs. But corolla tube included (not exerted to subexerted) and nut ovate-triangular (not obovoit to ovate).

Of all these, the hair is the most important characteristic of the species. The corolla tube is neither exerted nod subexerted. In other words, when Bhattacharjee's (2) definition is taken into account, *S. cydni* is distinctly different from *S. inflata* Bentham.

According to Flora of Turkey (1), the *S. inflata* species is currently the only member of the *Ambleia* section that can be found in Turkey. However, according to our findings, *S. inflata* appears to be nonexistent in Turkey. Instead, this desertic type is mostly found in Iran and Transcoucasia. Further, even if one supposes that there is a possibility that the type grows in Turkey, it is certion that *S. inflata* does not inhabit the locality cited in Flora of Turkey.

In Flora of Turkey, it is mentoined that stachys has 105 taxa in Turkey. This paper indicates that *S. inflata* does not occur in Turkey. However, after adding this new species to the list, the totel number of taxa is unchanged.Since the similar species *S. kotschy* grows only SW Iran and NE Iraq (3), there is considerable isolation. Similar separation is seen among most *Lamiaceae* members in Turkey. Particularly, in the Toros mountain range numerous vicariants occur in the many genera, including *Salvia L., Sideritis L., Stachys L., Lamium L. and Phlomis. L.* In conclusion, the apparent problems related to Flora of Turkey could be overcome by means of additional future (phytotaxonomic and phytochrologic) studies on these genera.

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