

A new subspecies of *Nepeta* (Lamiaceae) from Turkey

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Received January 2004; accepted for publication July 2004

A new record (*Nepeta sibthorpii* Benth.) for Turkey is described as a new subspecies, *N. sibthorpii* Benth. **ssp. tumeniana** T. Dirmenci **ssp. nov.** Diagnostic characters, description, detailed illustrations and taxonomic comments are presented. Its characteristics are compared with those of the related four subspecies of *N. sibthorpii*. The geographical distribution of *N. sibthorpii* ssp. *tumeniana* is mapped. IUCN threatened category and observations on the population are noted. © 2005 The Linnean Society of London, *Botanical Journal of the Linnean Society*, 2005, 147, 229–233.

ADDITIONAL KEYWORDS: endemic – *Nepeta sibthorpii*.

INTRODUCTION

The multiregional genus *Nepeta* L. is one of the largest genera in Lamiaceae and has approximately 250 species distributed mainly in south-west and central Asia, Europe, North Africa and North America (Pojark, 1954; Hedge, 1986). According to Pojark (1954), the widest variation of types and the greatest abundance of species within the genus *Nepeta* is found in two regions: south-west Asia (especially Iran) and the western Himalayas including the adjacent Hindu-Kush Mountains.

According to recent studies on the Turkish *Nepeta*, it is represented by 44 taxa of which 22 are endemic to Turkey (Aytaç & Yıldız, 1996; Güner *et al.*, 2000; Dirmenci, 2003). Endemic and non-endemic species mostly grow in east Anatolia and the Taurus Mountains.

Specimens of a new subspecies were collected from Kazdağı (İda), located in Balıkesir province in west Anatolia, during periodic field trips made in 1999 and 2003 (Fig. 1). Morphological comparisons were made with closely related species, *N. sibthorpii* Benth. from Greece deposited in the ISTE and a photograph obtained from the BDB in Greece and with those belonging to other Turkish species of *Nepeta* from various localities in our herbarium as well as specimens

deposited in ANK, GAZI, HUB and ISTE. All related literature references to the genus were checked (Boiss, 1879; Turner, 1972; Hedge & Lamond, 1982; Baden, 1984, 1987; Strid & Tan, 1986).

Following these investigations, it was found that the Kazdağı specimens were different from all other Turkish specimens, although closely related to the European species *N. sibthorpii*. Indeed we decided to include the Kazdağı specimens in *N. sibthorpii* but as a new subspecies. They are named as *Nepeta sibthorpii* Benth. ssp. *tumeniana* T. Dirmenci (Figs 2, 3). This is the first record of *N. sibthorpii* for Turkey.

NEPETA SIBTHORPII BENTH. SSP. TUMENIANA T. DIRMENCI SSP. NOV.

Diagnosis: *N. sibthorpii* Benth. ssp. *malacotrichi* et *N. sibthorpii* Benth. ssp. *dirphya* similis; sed a *N. sibthorpii* Benth. ssp. *malacotrichi* caulibus brevioribus (10–27 cm non 30–70 cm), inflorescentiis brevioribus (2–4.5 cm non 5–10 cm) differt; A *N. sibthorpii* Benth. ssp. *dirphya* indumento piloso et lanato, calycibus et calycis dentibus longioribus (7.5–10 mm et 3–5 mm non 5.5–6.5 mm et 2–3 mm) atque bracteolis longioribus (6–10 mm non 5.5(6) mm) recedit.

Type: [Turkey]: B1 Balıkesir, Edremit, Kazdağı (İda), Dökük, rocky slopes, 1300 m, 10.vii.1999, T. Dirmenci 1024 (holo: GAZI; iso: ANK, EGE, HUB, ISTE).

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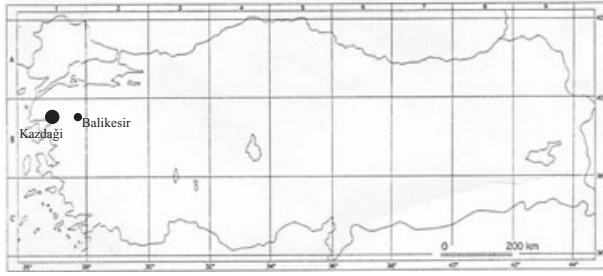


Figure 1. Distribution map of *Nepeta sibthorpii* Benth. *ssp. tumeniana* T. Dirmenci *ssp. nov.* in Turkey.

Description: Perennial, many stemmed from a woody rootstock, ascending, 15–27 (32) cm, densely villose to lanate, hairs to 1 mm, sparsely to densely sessile glandular. LEAVES ovate, ovate-lanceolate, 1.5–3 × 0.7–1.8 cm, densely pilose or lanate, both surface glandular papillate and sessile glandular, crenate, truncate to subcordate, obtuse at apex, lower leaves petiolate, petiole 0–1.5 cm, upper leaves subsessile to sessile. INFLORESCENCE unbranched, 2–4.5 (6) cm, verticillasters conferted, rarely lowermost distant and pedunculate, upper sessile. Lowermost bracts similar to leaves, ovate-lanceolate, 12–18 × 5–8 mm, pilose to villose, upper bracts linear-elliptic, 6–10 × 1–5 mm, puberulous, scarious margined. BRACTEOLAS linear, acuminate-aristate, 6–10 × 0.5–0.7 mm, longer than calyx tube, white membranous margins, puberulent to sparsely pilose, sessile glandular. CALYX tubular, 7.5–10 mm, actinomorphic, pilose, densely glandular, teeth equal, 3–5 mm, narrowly lanceolate, acuminate-aristate, with scarious margins. COROLLA white with purplish spots, 10–12 mm, tube shorter than calyx teeth, puberulent, sparsely glandular and minutely papillate, upper lip bifid, outer surface of lips long haired, with sessile glandular, lower lip bearded. STAMENS exerted from corolla. STYLE shortly bifid, protruding from corolla. NUTLETS oblong-trigonal, 1.7–2 × 0.8–1 mm, tuberculate all surface and densely at apex, black, blackish-grown.

Phenology: Fl. and Fr. June–August.

Habitat: Rocky slopes and open spaces within *P. nigra* forests, 1300–1500 m.

Material examined: B1 Balıkesir: Edremit, Kazdağı (İda), Nanekırı, rocky slopes, limestone bedrock, 1500 m, 20.vii.2003, T. Dirmenci 2303!

Etymology: The new subspecies is named after Professor Gülemdam Tümen, a well-known researcher in Turkey.

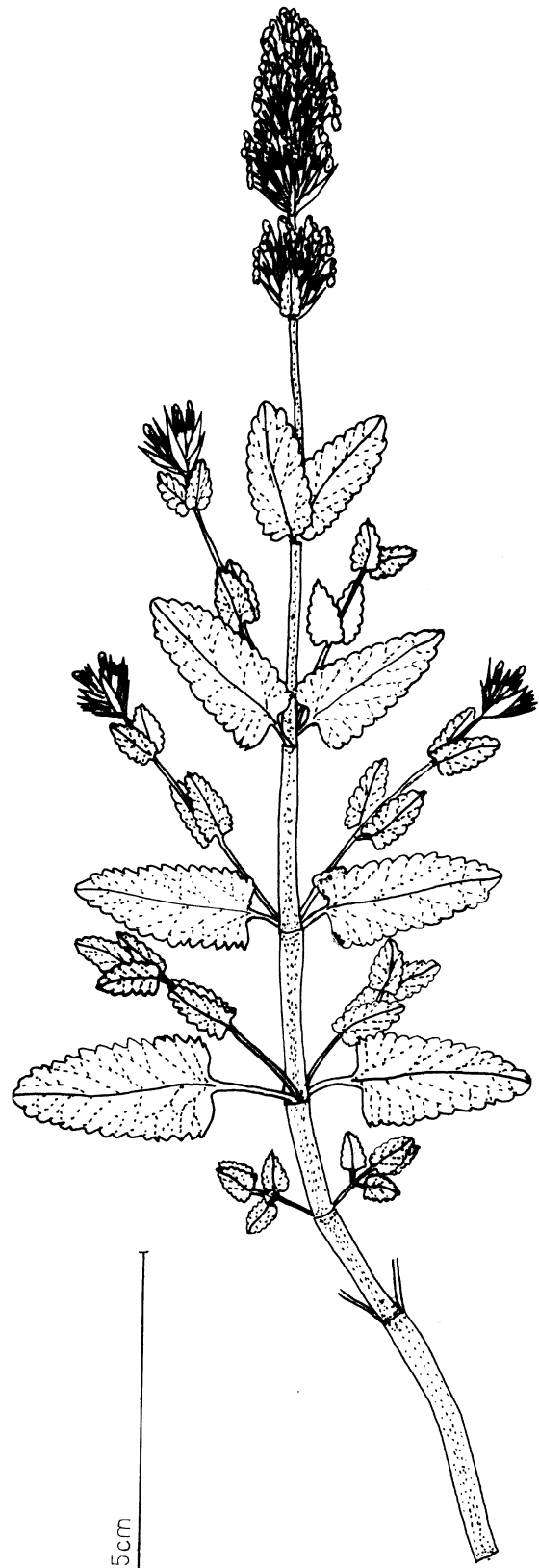


Figure 2. *Nepeta sibthorpii* Benth. *ssp. tumeniana* T. Dirmenci *ssp. nov.* habit.

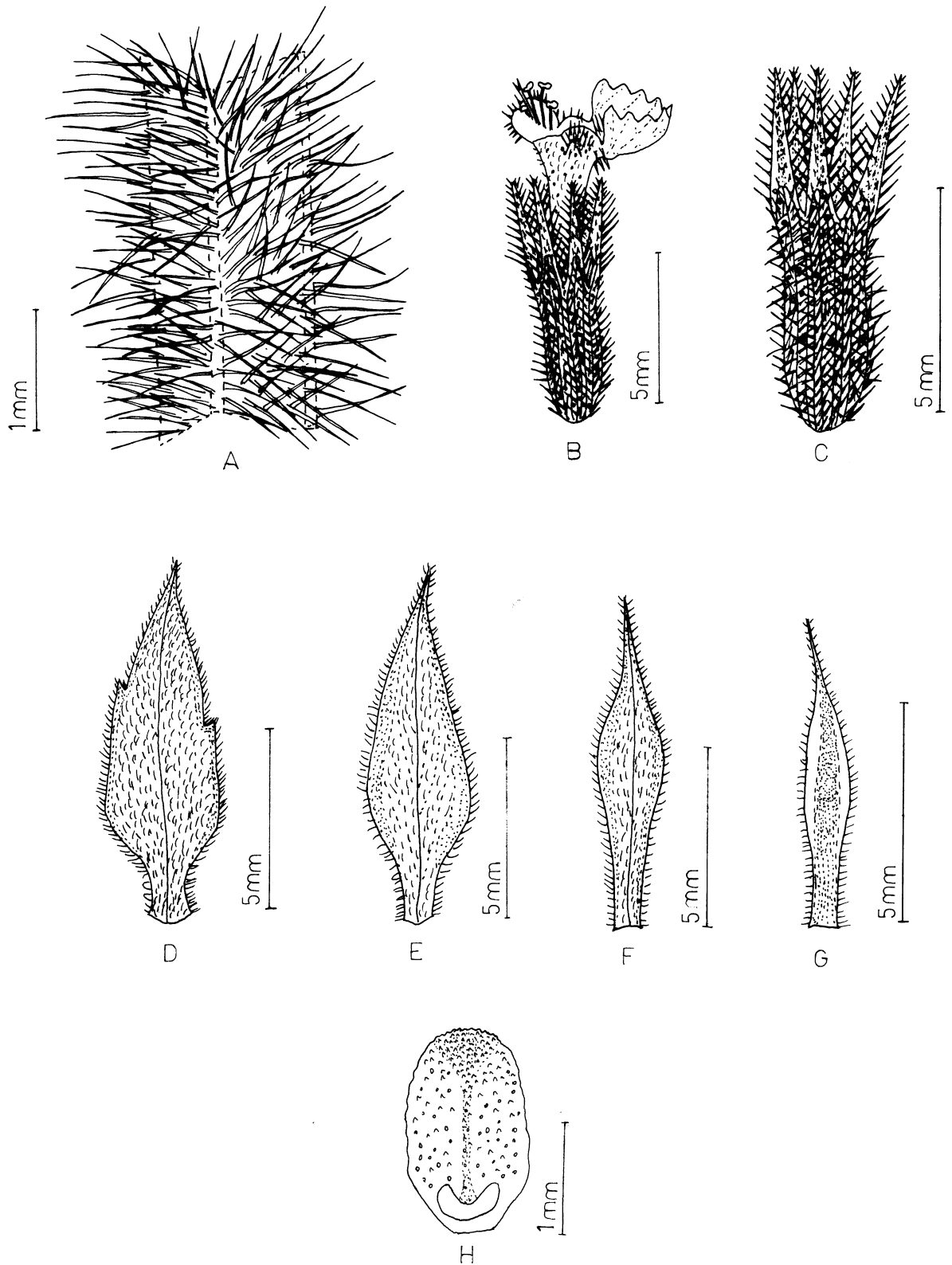


Figure 3. *Nepeta sibthorpii* Benth. **ssp. tumeniana** T. Dirmenci **ssp. nov.** A, indumentum on stem. B, flower. C, calyx. D–F, bract. G, bracteole. H, nutlet.

Distribution and proposed conservation status: Subspecies is endemic to Kazdağı (İda)-Balıkesir, western Anatolia, Mediterranean mountain element. The subspecies is known only from one population in the type locality and from an area of approximately 1000 m². The population is not in good condition and numbers of individuals are approximately 40–50. Therefore, it should be regarded as belonging to CR category (IUCN, 2001).

Ecology: *N. sibthorpii* ssp. *tumeniana* ssp. nov. grows on rocky slopes, and open places in *P. nigra* forests. Some of the species occurring with the new species are given in Table 1.

DISCUSSION

N. sibthorpii is morphologically very variable and has been divided into four subspecies: *N. sibthorpii* Benth ssp. *sibthorpii*, *N. sibthorpii* Benth. ssp. *malacotrichos* Baden, *N. sibthorpii* Benth. ssp. *dirphya* (Boiss.) Baden and *N. sibthorpii* Benth. ssp. *vourinensis* Baden (Baden, 1987). The new material described here comprises the fifth subspecies.

Table 2 details some of the taxonomic characters used to distinguish *N. sibthorpii* ssp. *tumeniana* from its related subspecies. The most important characters distinguishing the five subspecies of *N. sibthorpii* are

Table 1. Species growing with *Nepeta sibthorpii* Benth. ssp. *tumeniana* T. Dirmenci ssp. nov. in the type locality at Kazdağı-Edremit-Balıkesir, Turkey

Family	Taxon
Lamiaceae	<i>Sideritis trojana</i> Bornm. <i>Salvia argentea</i> L. <i>Thymus sipyleus</i> Boiss. ssp. <i>sipyleus</i> var. <i>sipyleus</i>
Asteraceae	<i>Centaurea odyssei</i> Wagenitz.
Liliaceae	<i>Allium kurtzianum</i> Asch. & Sint.
Caryophyllaceae	<i>Dianthus arinaceus</i> Boiss. var. <i>alpinus</i> Boiss.
Papaveraceae	<i>Papaver strictum</i> Boiss. & Bal.
Rosaceae	<i>Sorbus</i> sp.
Pinaceae	<i>Pinus nigra</i> Arn. ssp. <i>pallasiana</i> (Lamb.) Holmboe

Table 2. Characters used to distinguish between *Nepeta sibthorpii* Benth ssp. *tumeniana* T. Dirmenci and other subspecies of *N. sibthorpii*

Character	<i>N. sibthorpii</i> ssp. <i>tumeniana</i>	<i>N. sibthorpii</i> ssp. <i>sibthorpii</i>	<i>N. sibthorpii</i> ssp. <i>malacotrichos</i>	<i>N. sibthorpii</i> ssp. <i>dirphya</i>	<i>N. sibthorpii</i> ssp. <i>vourinensis</i>
Habitat	limestone, rocky slopes, 1300–1500 m	rocky habitats, dry places, 0–1500 m	rocky places, 100–1500 m	scree, rocky crevices, 1100–1600 m	rocky crevices, limestone, 750–1300 m
Habit	ascending, branched from base	erect, simple	branched	erect or ascending	mostly simple
Stem height (cm)	15–27 (32)	(40) 45–75 (80)	30–70	20–40	30–80
Stem indumentum	densely pilose to lanate, 0.5–1 mm	puberulent to tomentose, 0.25–5 mm	pilose to villose or lanate, 0.5–1 mm	tomentose to villose, 0.25–0.5 mm	puberulent-tomentose, 0.25–0.75 mm
Leaf shape	ovate, ovate-lanceolate	ovate, triangular-ovate	triangular-ovate	ovate	triangular-ovate
Leaves size (cm)	1.5–3 × 0.7–1.8	(2)2.5–3.5(5) × 1.2–1.6(2.5)	2.5–4(5) × 1.4–2.2	1.5–2.5 × 0.9–1.5	2.1–3.5 × 1–1.6
Inflorescence length (cm)	2–4.5 (6)	5–10	5–10	2–4	4–8
Calyx (mm)	7.5–10	7–8.5 (10)	7.5–9	5.5–6.5 (7)	7.5–8.5 (9)
Calyx teeth (mm)	3–5	(3) 4–5	3.5–4.5	2–3	(3) 4 (4.5)
Corolla (mm)	10–12	10–12	10–13	9–11	10–12
Bracteole shape and size (mm)	linear, 6–10	narrowly elliptic, 7–9	narrowly elliptic, (7.5) 8–10	narrowly elliptic, 5.5(6)	Narrowly oblong to narrowly elliptic, 7.5–9.5
Nutlet size (mm)	1.7–2 × 0.8–1	2–2.5 × 1–1.2	2 × 1.2	2–2.5 × 1	2–2.2 × 1
Nutlet surface	tuberculate, glabrous at apex	tuberculate, simple hairs at apex	tuberculate at apex	tuberculate at apex	tuberculate, apex shortly puberulent

habit, stem height, stem indumentum, length of inflorescence, bracteoles, calyx and calyx teeth. Similar characters of the subspecies of *N. sibthorpii* are habitat, leaf shape and size, bracteole shape and nutlet surface and size, in part.

N. sibthorpii ssp. *tumeniana* is closely allied to *N. sibthorpii* ssp. *malacotrichos* and *N. sibthorpii* ssp. *dirphya*. The new subspecies is also closely related to ssp. *malacotrichos* but can be distinguished by the characters cited in the diagnosis: short stem (15–27 cm not 30–70 cm), short inflorescence (2–4.5 cm not 5–10 cm) and tuberculae on all surfaces of the nutlets (not tuberculate only at apex).

N. sibthorpii ssp. *tumeniana* can be easily distinguished from ssp. *dirphya* by its pilose to lanate hairs on stems (not villose to pilose), hairs up to 1 mm (not 0.25–0.5 mm), long calyx (7.5–10 mm not 5.5–6.5 mm) and teeth (3–5 mm not 2–3 mm), long bracteoles (6–10 mm not 5.5 mm) and small nutlets (1.7–2 × 0.8–1 mm not 2–2.5 × 1 mm).

It differs from ssp. *sibthorpii* and ssp. *vourinensis* in habit, its short stem, short inflorescence, pilose to lanate hairs and small nutlets.

ACKNOWLEDGEMENTS

I should like to thank Professor Bayram Yıldız for helpful discussion and checking of the Latin diagnosis, and to the curators of ANK, GAZI, HUB and ISTE who allowed me to examine their *Nepeta* specimens in Turkey.

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