

A Note on *Grimmia capillata* De Not., (*Grimmiaceae*, *Musci*) in Turkey

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Abstract: *Grimmia capillata* De Not. is recorded for the first time from Eastern Anatolia, Turkey. A description of the species is given along with its ecology and a discussion of its phytogeographical significance.

Key Words: Moss flora, *Grimmia*, *Grimmiaceae*, phytogeography, Turkey

Türkiye'deki *Grimmia capillata* De Not., (*Grimmiaceae*, *Musci*) Türü Üzerine Bir Not

Özet: *Grimmia capillata* De Not. Türkiye'nin Doğu Anadolu Bölgesinden ilk kez kaydı verilmektedir. Türün ayrıntılı bir tanımlaması ile birlikte fitocoğrafik önemi ve ekolojisi de verilmiştir.

Anahtar Sözcükler: Karayosunu florası, *Grimmia*, *Grimmiaceae*, bitkicoğrafyası, Türkiye

Introduction

During floristic investigations, the second author collected some interesting *Grimmiaceae* specimens from Gürpınar district (Van, Eastern Anatolia, Turkey). One of these is *Grimmia capillata* De Not. It was first recorded from Ankara province, Polatlı district, north-west of Yassihöyük, on marl soil in a secondary dwarf-shrub community, ca. 1100 m, 08.09.1999, M. Döring, G. Parolly & D. Tolimir 7431. (Erdağ et al., 2001). Furthermore, this species has not yet been recorded from either the north and north-east districts of Ankara or Eastern Anatolia (Ünal, 1974; Altan & Yurdakulol, 1987; Frey & Kürschner, 1991; Uyar & Çetin, 2001; Çetin et al., 2002; Abay & Çetin, 2003, Uyar & Çetin, 2004).

In this study, *Grimmia capillata* De Not. was recorded for the first time from Eastern Anatolia (Figure 1).

Phytogeographically, the area is in the West Irano-Turanian province (Frey, 1986). The main vegetation types are anthropogenic steppes in oak forests, among thorn-cushion shrubs or on open mountain sides, 1300-2350 m.

Grimmia capillata De Not., -Mem. Reale Accad. Sci. Torino 39: 248. 1836.

Type: Italy, Sardinia, Cagliari, leg. G. de Notaris, holotype, RO!

Synonyms: *Grimmia crinita* Brid. var. *capillata* (De Not.) De Not.,

G. mairei Card. & Coppey,

G. mesopotamica Schiffn.

Plants small, grey-green, growing in dense patches, autoicous, stems 0.5-1 cm high occasionally branched, leaves appressed when dry, erecto-patent when moist, 2-3 mm long including hair point, the lower leaves of vegetative shoots only mucous and carinate, with recurved margins almost to apex; carinate leaves ovate-lanceolate to obovate, concave abruptly narrowed at apex; upper perichaetial leaves piliferous, obovate-spathulate, concave, margins plane to slightly recurved, leaf cells unistratose, basal cells rectangular 4-5 times as long as wide, thin walled, pellucid, basal marginal cells hyaline; upper cells irregularly quadrate, slightly sinuate, incrassate in mid-leaf 9-12 µm wide; costa;

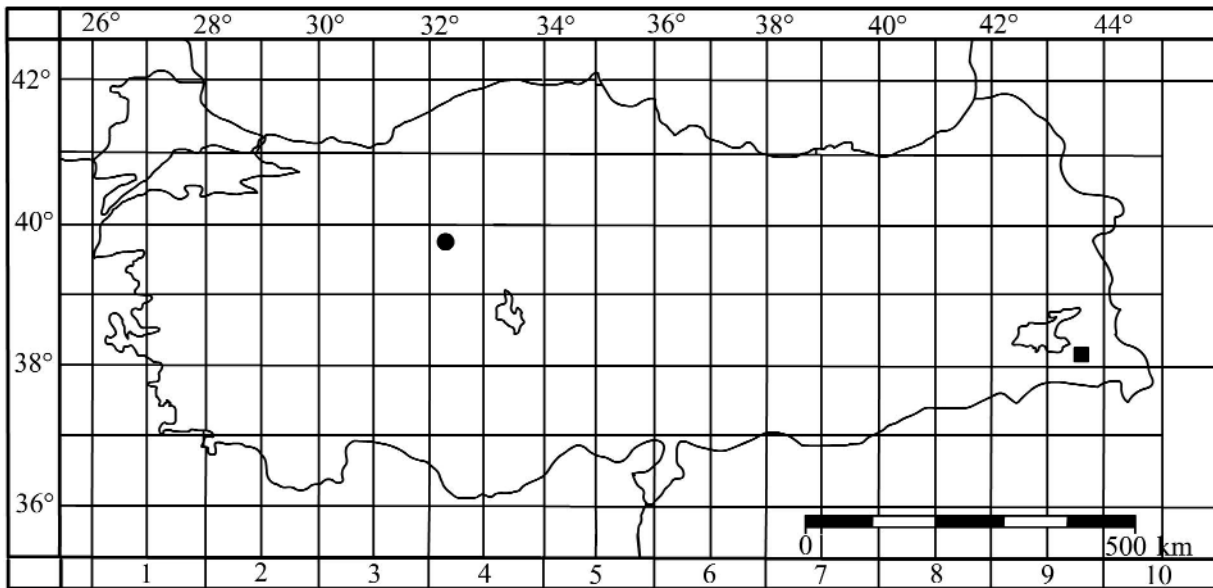


Figure 1. Distribution of *Grimmia capillata* in Turkey (based on published and own records).

- Geographic location of the study area.
- The first record location of *Grimmia capillata* (Erdağ et al., 2001)

subpercurrent, weak below, much stronger in apex, projecting at dorsal side; hair-points long, flattened at base, decurrent down margin, terete above, setae 0.75-1 mm long, straight to slightly curved, approximately half of the setae covered by vaginula; capsules shortly emergent, striate and very slightly bulging on one side at base, ca. 1.3 mm long with wide-cylindrical operculum and broad annulus (Figure 2).

Specimen examined: Turkey: Van province: Gürpınar district, in the vicinity of Yoldüştü village, on weathered rocks, alt. 2300 m, 6. x. 2002, (herb. Uyar) UYAR 752.

World Distribution: Europe (in particular, Mediterranean countries), Algeria, Iraq, Jordan, Syria (Schiffner, 1913; El-Oqlah et al., 1988; Frey & Kürschner, 1991; Greven, 1995), Turkmenistan (Abramova & Abramov, 1988), Afghanistan (Froehlich, 1964). It has been recently discovered in the Iberian Peninsula (Guerra et al., 1993), where it appears on xeric, gypsaceous soils in the vicinity of Almería (SE Spain), and on marl soil around Polatlı in Turkey (Erdağ et al., 2001).

Ecology: Thermophytic, photophytic, mainly in steppes and semi-deserts related to the continental

section of the Mediterranean vegetation zone. Here it grows on loamy limestone, gypsiferous basiphytic soils and mortar of walls (Dierßen, 2001). The species is syntaxonomically known from the *Grimmia mesopotamicae-Tortuletum obtusatae*, an association described by Frey & Kürschner (1992) from brown-red sandstones around the Dead Sea and the Edom mountains in Jordan.

Discussion

Grimmia capillata is closely related to *G. crinita* and both species may grow in the same habitat: dry sunny upper sides of old weathered rocks. It differs from *G. crinita* in its carinate leaves with recurved margins, hair-pointed only in perichaetial leaves and capsules on straight to slightly curved setae (Frey et al., 1995; Greven, 1995, 2003; Pedrotti, 2001; Heyn & Herrnstadt, 2004).

This species was first described by De Notaris in 1836 and published by the same author (De Notaris, 1838) as a variety of *G. crinita* Brid. established by Schiffner (1913) as a synonym of *G. mesopotamica* Schiffn. Nevertheless, Loeske (1930) conceived *G. capillata* as a thermophilous southern variety of *G. crinita*. In addition,

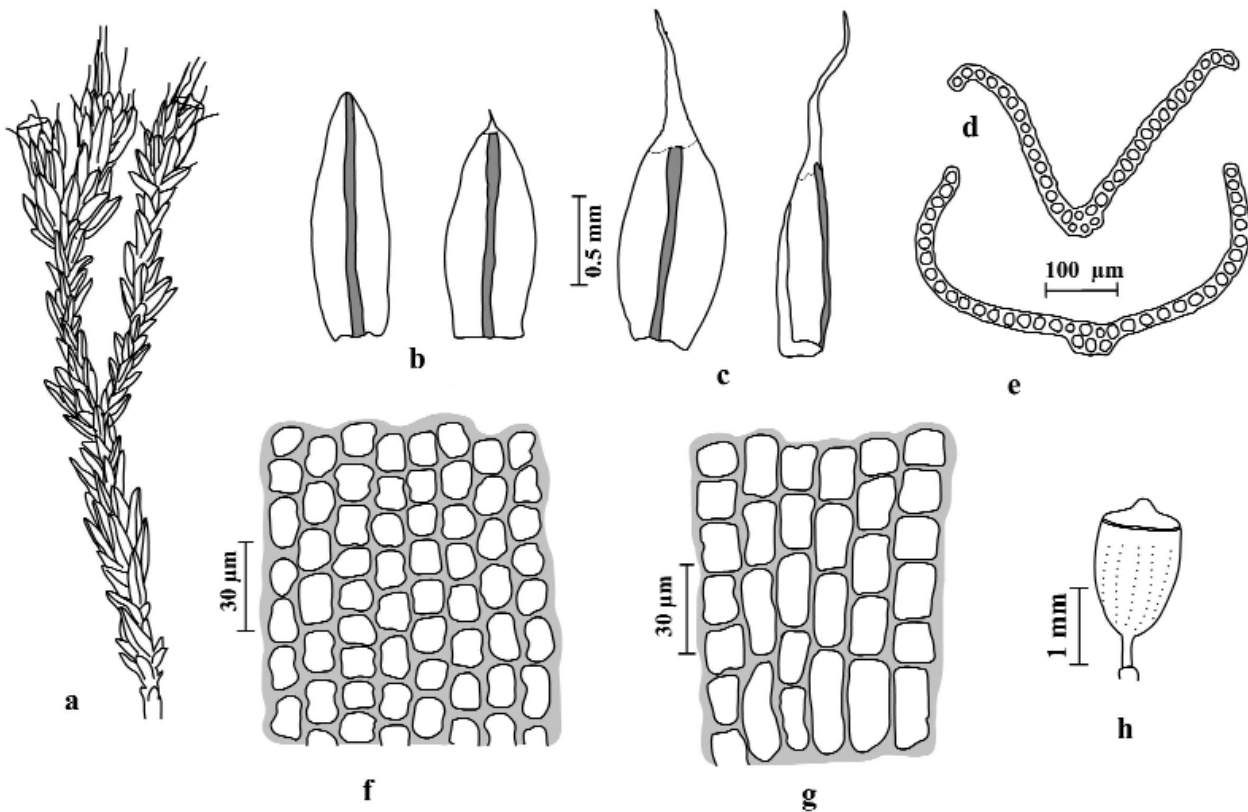


Figure 2. *Grimmia capillata* De Not.

- a. Habit wet
- b. Carinate leaves
- c. Perichaetial leaves
- d. Cross-section of carinate leaf
- e. Cross-section of perichaetial leaf
- f. Upper laminal cells
- g. Basal laminal cells
- h. Capsule

this species has recently been published from Spain, as *G. mesopotamica*, new to Europe (Guerra et al., 1993). Finally, Greven (1995) has recently reassigned the status of distinct species to this taxon on the basis of the original description by De Notaris (1836). However, Heyn & Herrstadt (2004) did not agree with Greven (1995) because they worried that the type specimens were not seen by Greven when he recognised *G. capillata* as a distinct species. Nevertheless, the characters of our specimens are similar to the descriptions given by Greven (1995, 2003) and Pedrotti (2001) and Erdağ et al. (2001). Apparently the main difference between the descriptions given by Heyn & Herrstadt (2004) and the others is found in the carinate leaves with hair - pointed in the specimens described by Heyn & Herrstadt. In our opinion these taxa need to be investigated further. It is

even possible that one of these different specimens will be defined as a new variety of *G. capillata*.

Although this species was found in Iraq, Jordan, Syria, Turkmenistan and Afghanistan, it was known only from a single record from Inner Anatolia (Turkey). Consequently, the new record is not surprising because of its distribution in nearby localities. In our opinion, the reason for there being no record for *G. capillata* between these localities could be that floristic studies on moss flora of Turkey are scarce and localized in this region.

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