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Two New Varieties of *Ctenidium molluscum* (Hedw.) Mitt. (*Hypnaceae, Musci*) for the Moss Flora of Turkey

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Abstract: Two new varieties, *Ctenidium molluscum* (Hedw.) Mitt. var. *condensatum* (Schimp.) Britt. and *Ctenidium molluscum* (Hedw.) Mitt. var. *robustum* Boul. collected from the western Black Sea region were determined to be new records for the moss flora of Turkey.

Key Words: Moss flora, new record, variety, *Ctenidium*, Turkey

Türkiye Karayosunu Florası için İki Yeni Varyete

Özet: Batı Karadeniz Bölgesinden toplanan karayosunu örneklerinin değerlendirilmesi sonucu, Türkiye Karayosunları Florası için iki yeni varyete olan *Ctenidium molluscum* (Hedw.) Mitt. var. *condensatum* (Schimp.) Britt. ve *Ctenidium molluscum* (Hedw.) Mitt. var. *robustum* Boul. taksonları bulundu.

Anahtar Sözcükler: Karayosunu florası, yeni kayıt, varyete, Türkiye

Introduction

The study area is located in the western Black Sea region, situated between Zonguldak and Karabük. According to Henderson (1961), it belongs to the A2 grid-square (Figure 1).

This region has a typical oceanic climate with a precipitation regime of type 2. (Akman 1990). Droughts are not seen in this climate type.

The forest vegetation consists mainly of *Fagus orientalis* Lipsky, *Carpinus betulus* L., *Castanea sativa* Mill., *Tilia argentea* Desf. ex DC., *Quercus cerris* L., *Laurus nobilis* L., *Alnus glutinosa* (L.) Gaertn., *Pinus nigra* Arn. subsp. *nigra* var. *caramanica* (Loudon) Rehder, and *Platanus orientalis* L.

A two-year inquiry between 2000 and 2002 into the Black Sea region bryophytes led to a large number of interesting findings including two new records for the moss flora of Turkey, *Ctenidium molluscum* (Hedw.) Mitt. var. *robustum* Boul. and *Ctenidium molluscum* (Hedw.) Mitt. var. *condensatum* (Schimp.) Britt.

These samples were collected in the spring and autumn of 2001. The identification of the samples follows Smith (1980), Watson (1981), Nyholm (1979), Lawton (1971) and Frey et al. (1995). In addition, the status of the taxa was determined by reviewing the related literature (Çetin, 1988; Düll, 1984). The samples were deposited in the herbarium of UYAR (Zonguldak).

Description of Taxa

Ctenidium molluscum (Hedw.) Mitt. var. *condensatum* (Schimp.) Britt. (Figure 2.)

Plants quite robust, glossy, golden-green to golden-brown, in patches on damp, shaded, basic rocks, shoots to 8 cm long but branches hardly more than 1 cm high; stems prostrate usually regularly pinnate, sometimes branching ± irregularly, branches short, spreading to erect, usually curved at the ends; stem leaves 1.2–1.8 mm long, falcato-secund, cordate-triangular, strongly plicate in lower part, rugose above, shortly narrowed to a fine point, margin denticulate; branch leaves usually narrower and more tapering, capsule inclined, ellipsoid, seta smooth, spores 16–18 µm in diameter.

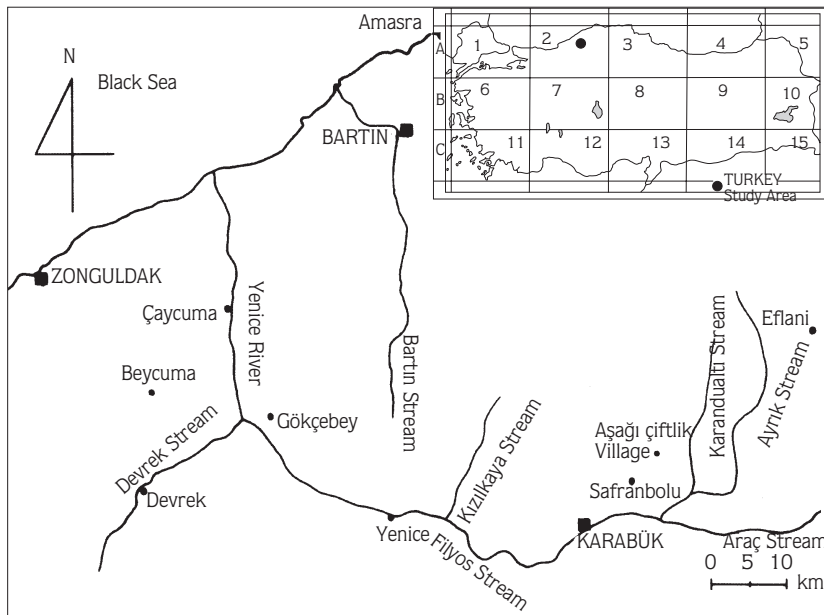


Figure 1. Study area and grid system adopted by Henderson (1961) for Turkey.
 • Study area

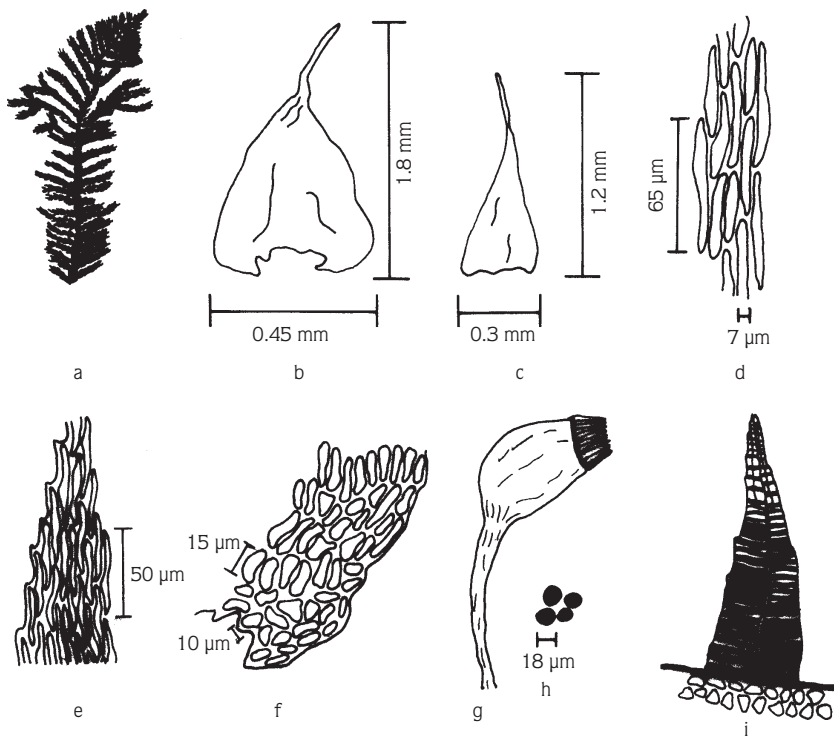


Figure 2. *Ctenidium molluscum* (Hedw.) Mitt. var. *condensatum* (Schimp.) Britt.
 a. General view of plant
 b. Stem leaf
 c. Branch leaf
 d. Mid-leaf cells
 e. Marginal cells
 f. Angular cells
 g. Capsule
 h. Spores
 i. Peristome teeth

World distribution: Europe, South-West USSR, North America.

Specimen examined: Zonguldak (A2); Between Zonguldak and Beycuma, near stream, in *Fagus orientalis* forest, mixed with *Carpinus betulus*, *Castanea sativa*,

Platanus orientalis, *Rhododendron ponticum*, *Tilia argentea*, *Laurus nobilis*, *Alnus glutinosa*, on rock, 200 m, 14.v.2001, (herb. Uyar), UYAR 547.

Ctenidium molluscum (Hedw.) Mitt. var. *robustum* Boul. (Figure 3.)

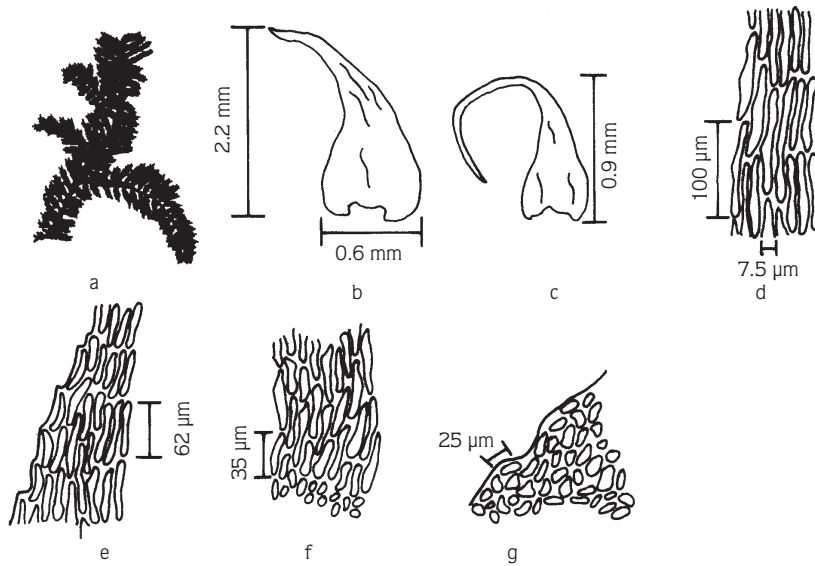


Figure 3. *Ctenidium molluscum* (Hedw.) Mitt. var. *robustum* Boul.
 a. General view of plant
 b. Stem leaf
 c. Branch leaf
 d. Mid-leaf cells
 e. Marginal cells
 f. Basal cells
 g. Angular cells

Plants robust, golden-brown to reddish-tinged, forming deep tufts on damp, basic rocks; primary stems prostrate, to 10 cm long, secondary stems erect, stems irregularly pinnate, branches long and erect, stem leaves 1.7-2.5 mm long, ovate-cordate, falcato-secund, strongly plicate, tapering to a fine acumen, margin denticulate, mid leaf cells 5-7.5 μm x 60-120 μm , 12-16 times as long as wide, angular cells 8-12 μm x 25-35 μm ; branch leaves ovate to ovate-lanceolate, 1.25-1.5 mm long,

smaller than stem leaves, strongly falcate and narrowly tapering to acumen.

World distribution: Europe, South-West USSR, North-East Asia.

Specimen examined: Karabük (A2); between Safranbolu and Bartın, Aşağı çiftlik village, in *Pinus nigra* subsp. *nigra* var. *caramanica* forest vegetation, on rock, 300 m, 12.xi.2001, (herb. Uyar), UYAR 333.

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