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HERZOGIELLA TURFACEA (LINDB.) Z. IWATS. (PLAGIOTHECIACEAE, BRYOPHYTA) NEW TO TURKEY

HERZOGIELLA TURFACEA (LINDB.) Z. IWATS. (PLAGIOTHECIACEAE, BRYOPHYTA) – НОВЫЙ ВИД ДЛЯ ТУРЦИИ

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Abstract

During our field trips to Ardahan province of Turkey, we have collected some interesting moss samples, such as *Herzogiella turfacea* (Lindb.) Z.Iwats., which was determined as new for Turkey, Mediterranean basin and Southwest Asia. Descriptions, illustrations, geographic distribution and comparisons with morphologically similar taxa are given.

Резюме

Во время экспедиции в провинцию Ардаган в Турции мы нашли, в числе прочих интересных видов, *Herzogiella turfacea* (Lindb.) Z.Iwats., которая является новым видом не только для Турции, но и для всего Средиземноморья, равно как и для Юго-Западной Азии. Приводится описание, иллюстрации, отличия от внешне сходных видов и данные о географическом распространении.

KEYWORDS: biodiversity, mosses, *Herzogiella*, Yalnızçam Mountains, new record, Turkey.

INTRODUCTION

The geography and climate of Turkey varies remarkably across the country. Turkey has three main floristic regions: Euro-Siberian, Mediterranean and Irano-Turanian (Akman, 1999). So, Turkey is characterized by rich biodiversity of different ecological areas that supply excellent habitats for plants, including bryophytes. The total number of bryophyte species of Turkey have reached 962 (179 liverworts, 779 mosses, 4 hornworts) with the addition of new records (Batan *et al*., 2014a,b; Abay and Keçeli, 2014, Özdemir and Batan, 2014, Ursava and Çetin, 2014, Ezer *et al.*, 2014, Ören *et al.*, 2015). Compared to other European countries, not many bryophyte flora studies have been conducted in Turkey. On the other hand, Turkey has the highest bryophyte taxa of all countries of Southwest Asia.

This paper reports findings resulting from bryological surveys performed in south east Turkey in the surroundings of Ardahan (Irano-Turanian) (Fig. 1).

According to the checklists of mosses of Turkey, *Herzogiella* is represented by a species: *Herzogiella seligeri* (Brid.) Z.Iwats. (Uyar & Çetin, 2004; Kürschner & Erdağ, 2005; Kürschner & Frey, 2011 and Ros et al., 2013).

MATERIAL AND METHODS

The moss specimens were collected from Eastern Black Sea region (Ardahan province) on 7 September 2014. The samples examined with stereomicroscope (Carl Zeiss Stemi 2000-C) and a light microscope (Carl Zeiss Axio Imager A2) and their identifications were performed by consulting keys (Ireland, 1992; Noguchi *et al*., 1994; Frey et al., 2006). The status of taxa was evaluated by reviewing the related literature for Turkey (Uyar & Çetin, 2004; Kürschner & Erdağ, 2005; Kürschner & Frey, 2011; Ros et al., 2013), for Southwest Asia (Kürschner & Frey, 2011) and for Mediterranean (Ros et al., 2013). Samples are kept in the Herbarium of the Biology Department, Faculty of Science, Karadeniz Technical University, Turkey (KTUB).

SPECIES DESCRIPTION

Herzogiella turfacea (Lindb.) Z.Iwats. Fig. 2

Plants pale, green to yellowish-green, glossy, with branches which are 0.8–1 cm long and simple spreading. Leaves ca. 1.5–1.8 mm, with a long, tapering tip, becoming wavy or irregularly bent when dry, erect-spreading, lanceolate or ovate-lanceolate, narrow acumen, slightly decurrent, usually near the end of the shoots, curve one side. Margin of leaves serrate or dentate near the apex, serrate to serrulate from mid-leaf to basal part. The nerve is indistinct and forked. Mid-leaf cells thin walled, 60–70 μm long, 4–5 μm wide. Alar cells weakly differentiated, not inflated. Setae reddish-brown, ca. 1.5–2 cm tall. Capsules abundant, reddish-brown or brown, oblong to oblong-cylindrical, curved, ca. 1.5–2 mm long. Capsules furrowed when dry and empty.

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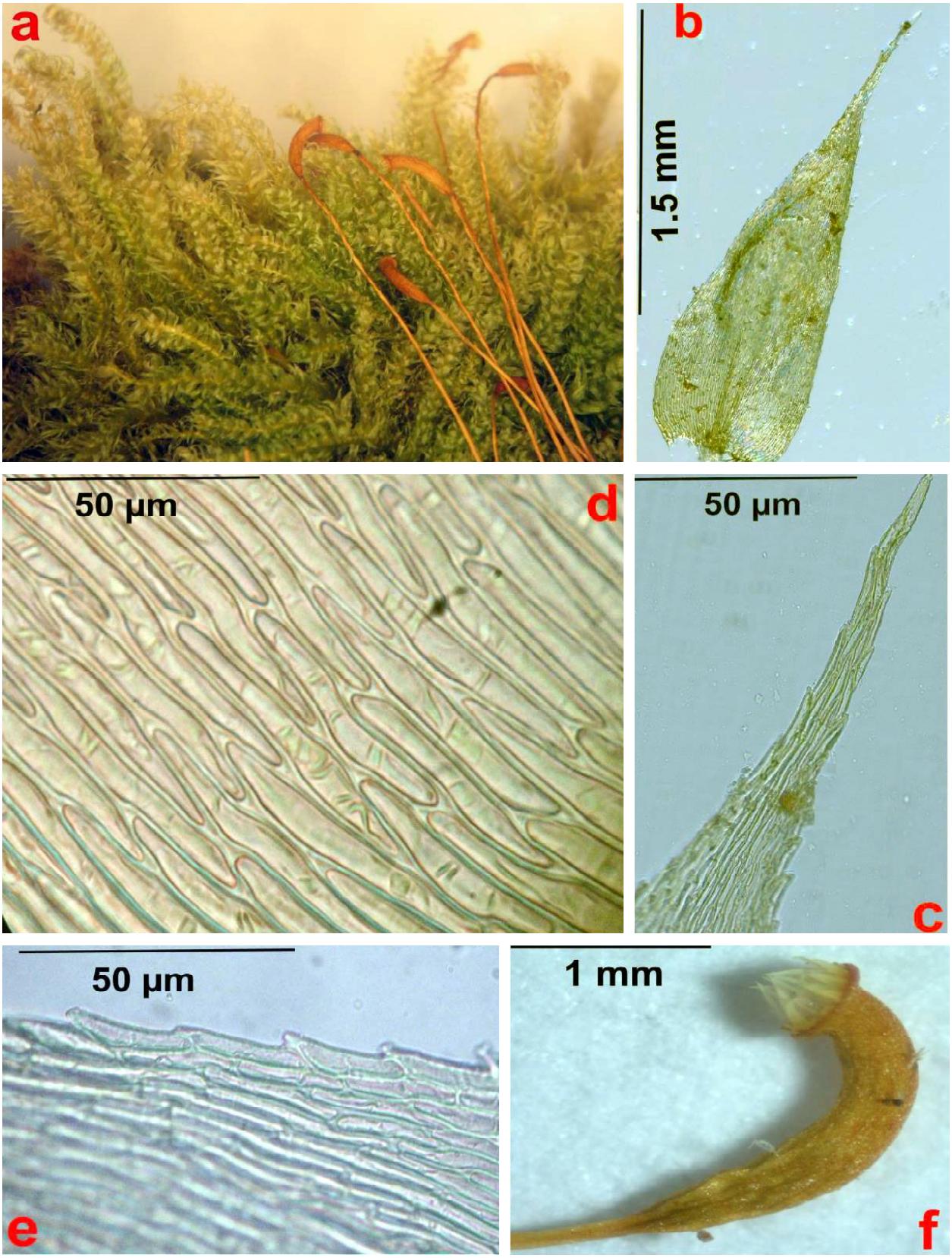

Fig. 2. *Herzogiella turfacea* (from KTUB 1606): a: habit; b: leaf; c: leaf apex; d: mid-leaf cells; e: leaf margin; f: capsule.

Specimen examined: TURKEY: Ardahan, Hasköy village, Yalnızçam Mountains, Yalnızçam forest, 41°01'44"N, 42°25'15"E, on rotten log, in the *Pinus* sp. forest, *alt. ca* 1893-1950 m a.s.l., (*leg*. N. Batan and *det*. N. Batan & T. Özdemir), 7 September 2014, KTUB 1606.

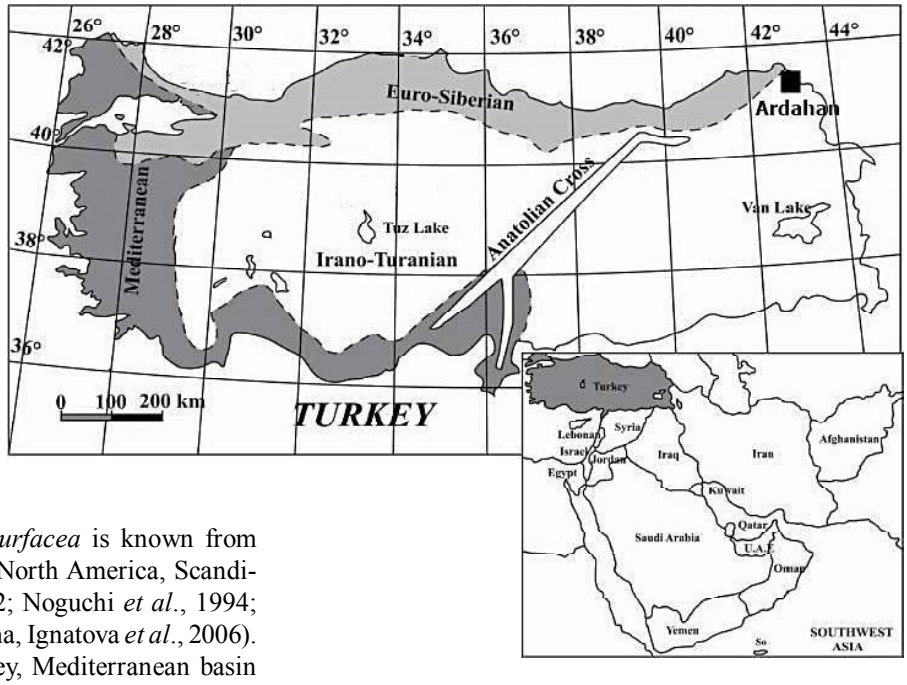

Fig. 1. The collection locality [(■) Ardahan] of reported taxon and florisic regions of Turkey (borders are shown in dash-lines.

Distribution: *Herzogiella turfacea* is known from Europe, Japan, Northern Asia, North America, Scandinavia and Russia (Ireland, 1992; Noguchi *et al*., 1994; Frey *et al.*, 2006; Ignatov, Afonina, Ignatova *et al*., 2006). It is firstly reported from Turkey, Mediterranean basin and Southwest Asia in this paper.

The genus *Herzogiella* was represented in Turkey by *H. seligeri* (Brid.) Z.Iwats. (Uyar & Çetin, 2004; Kürschner & Erdağ, 2005; Kürschner & Frey, 2011; Ros *et al*., 2013). In this paper, the second species is added to this genus in Turkey, *H. turfacea*.

Herzogiella turfacea is similar to *H. perrobusta* (Broth.) Z. Iwats., but *H. perrobusta* is distinguished from *H. turfacea* by its mid-leaf cells narrower than those of *H. turfacea*. Additionally *H. turfacea* has leaves and cells of the leaf apex narrower or shorter than those of *H. perrobusta*.

Moreover, *H. turfacea* resembles *H. seligeri*, but *H. turfacea* typically differs from that in having cells of the leaf apex narrower or shorter, and also its capsule is furrowed and 1.5–2 mm long, versus never furrowed, 2–3.5 in *H. seligeri.*

This new record, *Herzogiella turfacea* contributes to the moss flora of Turkey and Southwest Asia. Moreover, *Herzogiella turfacea* has been categorized as rare (R) to threats in European moss flora (ECCB, 1995).

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