

## *Syntrichia papillosa* (Wilson) Jur. (Pottiaceae, Bryopsida), an epiphytic species new to the bryophyte flora of Turkey

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**Abstract** — *Syntrichia papillosa*, an epiphytic propaguliferous member of *Pottiaceae* is recorded for the first time to the bryophyte flora of Turkey. The specimen was collected from north east of Turkey (prov. Trabzon, Tonya county) on *Pyrus sp.* with two mosses which hitherto are known only from a single locality of Turkey, *Orthotrichum obtusifolium* and *Orthotrichum rivulare*. A description of *S. papillosa* with illustrations and distribution map for the three species in Turkey is presented.

**Bryopsida / mosses / Pottiaceae / *Syntrichia papillosa* / Turkish bryophytes / bryogeography / *Tortula***

### INTRODUCTION

*Tortula brevissima* Schiffn. (Kürschner & Parolly, 1998), *Gymnostomum lanceolatum* Cano, Ros et Guerra (Kucera, 1998), *Barbula glauca* (Ryan) Möll (Cetin, 1999), *Cinclidotus bistratosus* Kürschner et Lubenau-Nestle, a new species to Turkey (Kürschner & Lubenau-Nestle, 2000), *Tortella inflexa* (Bruch) Broth. (Özdemir, 2001) and *Stegonia latifolia* (Schwaegr.) Vent. ex Broth. var. *pilifera* (Brid.) Broth. (Erdağ *et al.*, 2001) are recently recorded pottiaceous mosses new to the Turkish bryoflora. New additions to the flora have been increased in the last decade due to intensive collections in the country by native and European bryologists.

*Pottiaceae* Schimp. is a dominant family especially in western Turkey, with a typical Mediterranean climate and arid conditions, whereas its dominance decreases towards the north eastern side of Turkey, because of the more oceanic climate with high annual rainfall (2000 – 2500 mm) and strong humid conditions.

An epiphytic member of this family, *Syntrichia papillosa* (Wilson) Jur. is here reported as a new record for Turkey. A description, illustrations and a distribution map in Turkey may contribute to further studies regarding the bryoflora of this country. In addition, a distribution map for *Orthotrichum obtusifolium* Brid. and *Orthotrichum rivulare* Turn. rare in Turkey is presented.

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*Syntrichia papillosa* (Wilson) Jur.

**Basionym:** *Tortula papillosa* Wilson, *London J. Bot.* 4:193. 1845.

**Plants** small, 4-5 mm high (Fig. 1, A); **stem** with rhizoids, transverse section rounded; central strand absent to very weakly developed; hyalodermal cells thin walled (fig. 1, D); **leaves** incurved when dry, spreading to slightly erect when moist, 1.2-1.5 (2) mm long, oblong-obovate to spatulate (Fig. 1, B); **leaf margins** inrolled, giving the leaf a subtubulose appearance when dry; inflexed when moist (Fig. 1, B5) except near the base (Fig. 1, B4); **hair point** smooth, yellowish-brown at base, up to 300  $\mu\text{m}$  long; **costa** strongly papillose at back, papillae spiculate, up to 10  $\mu\text{m}$ , especially near the apex (Fig. 1, B1); **leaf cells** hexagonal 20-25 (27.5)  $\mu\text{m}$  wide, slightly thickenings at the corners (Fig. 1, B2), papillose only on abaxial side, papillae single and simple, adaxial side of cells smooth; basal marginal cells rectangular to short rectangular, subquadrate with thicker transverse walls (Fig. 1, B3); multicellular globose **propagula** abundant on adaxial side of young leaves, smooth up to 40-50  $\mu\text{m}$  wide (Fig. 1, C); **dioecious**; sporophyte unknown in Turkish specimens.

**Distribution.** — Eur; Afr.2,4,5; Am.1,2,4,5,6; Ant; As5; Austr. 1,2 (based on Düll, 1984 and 1992; Zander, 1993).

**Specimen examined.** — Turkey, Trabzon: Tonya, Ortamahalle, on trunk of *Pyrus* sp., alt. ca 700 m, coll. Uğraş Yurdaarmağan, 6.12.2002, AYDN 731 ( 40° 53' N and 39° 14' E).

*Syntrichia papillosa* can be easily distinguished in the field from *S. laevipila* Brid., by its globose multicellular propagula on the adaxial side of young leaves. Single and simple papillae only in the abaxial side of leaves and very papillose costae at back, large leaf cells 20-25  $\mu\text{m}$  wide, and more or less inflexed margins are additional diagnostic characters to distinguish it from *S. laevipila*. Although papillae on both sides of the leaf were illustrated by Zander (1993), Turkish specimens have papillae only on the abaxial side, as illustrated by Crum and Anderson (1981). Zander's illustration of *Syntrichia papillosa* fits well with *S. subpapillosa* (Cardot & Broth.) Matteri, having two sided papillae and smooth margins, according to the recent combination for *Tortula subpapillosa* Cardot & Broth. by Matteri (1994).

*Syntrichia papillosa* was collected from northeastern Turkey ( 40° 53' N and 39° 14' E) where it grows on a trunk of *Pyrus* L. sp., scattered among shoots of *Pseudoleskeella nervosa* (Brid.) Nyholm. In this community, *Orthotrichum rivulare* Turn., recently recorded from Turkey (Erdağ & Kürschner, 2002) and *Orthotrichum obtusifolium* Brid., previously recorded by Çetin with no indication of the collection locality (Çetin, 1988) were the accompanying species. Interestingly, like *S. papillosa*, these two species of the genus *Orthotrichum* had been previously overlooked. Their Turkish range is updated and mapped (Fig. 2).

*Orthotrichum obtusifolium* Brid.

**Specimen examined.** — Turkey, Trabzon: Tonya, Ortamahalle, on trunk of *Pyrus* sp., alt. ca 700 m, coll. Uğraş Yurdaarmağan, 6.12.2002, AYDN 732. ( 40° 53' N and 39° 14' E).

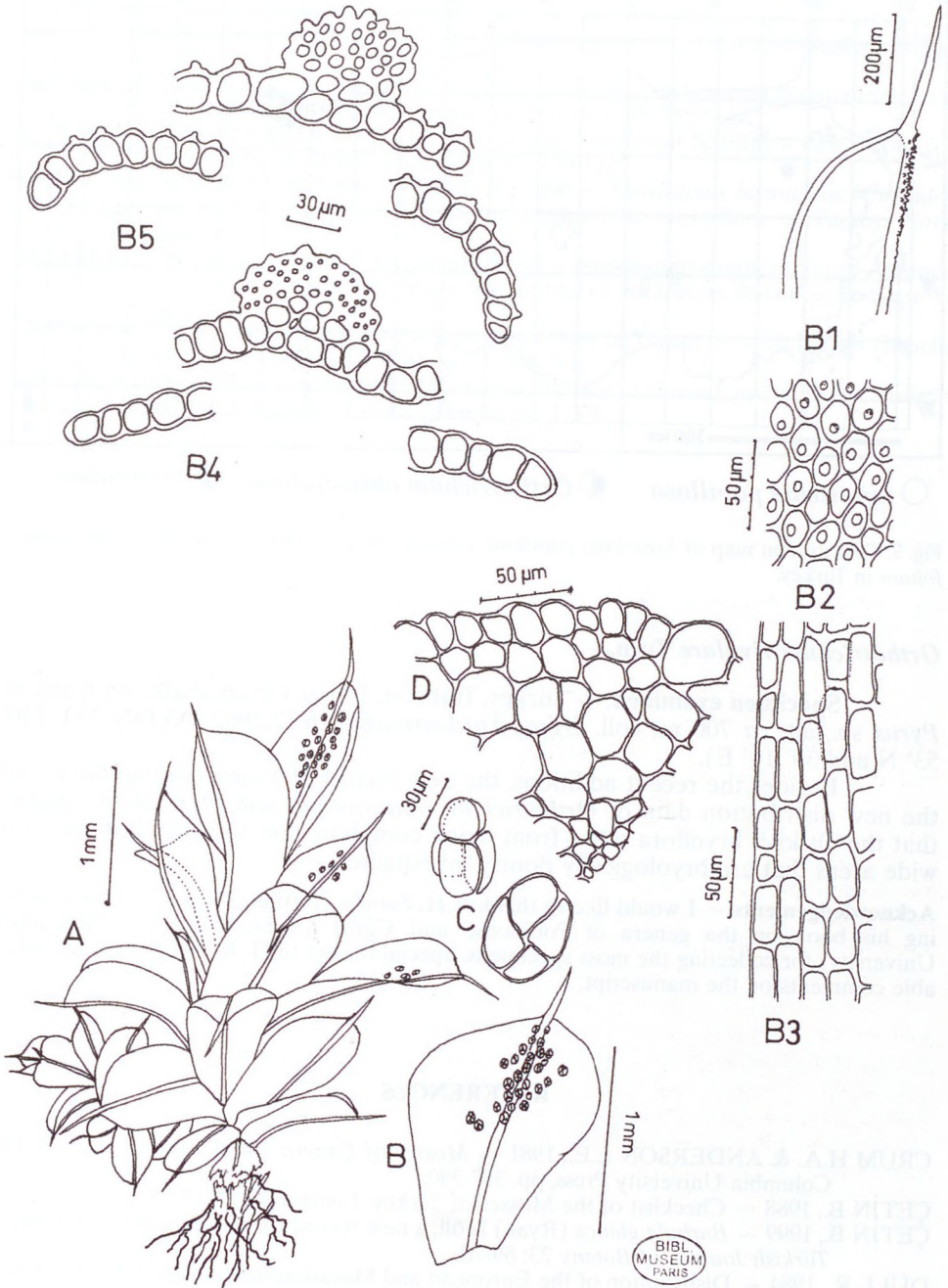


Fig. 1. *Syntrichia paillosa*. **A**, Habitus; **B**, leaf with propagulae; **B1**, Leaf apex; **B2**, Median leaf cells in the abaxial side; **B3**, Leaf basal marginal cells; **B4**, Cross section of costa near base; **B5**, Cross section of costa above mid lamina; **C**, Propagulae; **D**, Cross section of stem.

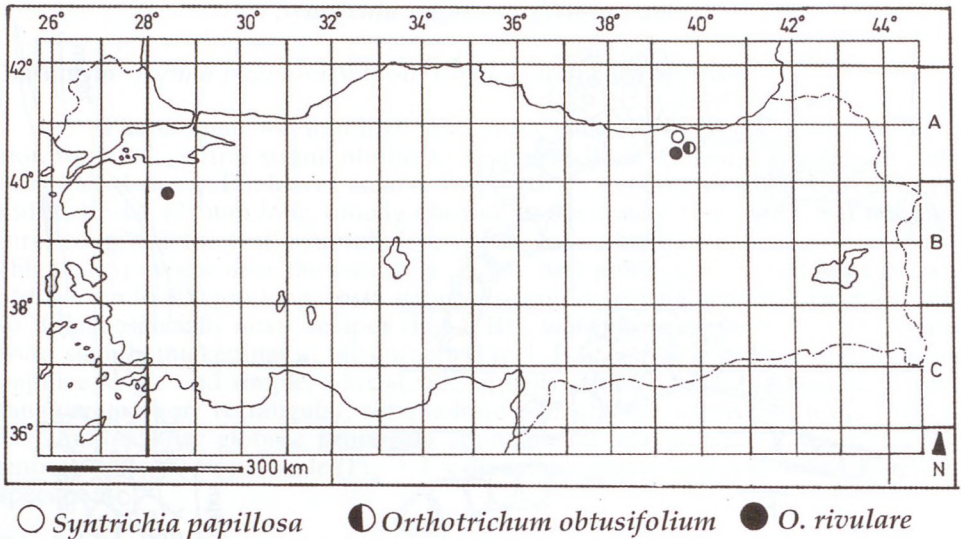


Fig. 2. Distribution map of *Syntrichia papillosa*, *Orthotrichum rivulare* and *Orthotrichum obtusifolium* in Turkey.

### *Orthotrichum rivulare* Turn.

**Specimen examined.** — Turkey, Trabzon: Tonya, Ortamahalle, on trunk of *Pyrus* sp., alt. ca 700 m, coll. Uğraş Yurdaarmağan, 6.12.2002, AYDN 733. (40° 53' N and 39° 14' E).

Besides the recent additions, the new record of *Syntrichia papillosa*, and the new distribution data of *Orthotrichum obtusifolium* and *O. rivulare*, suggest that the Turkish bryoflora is far from being complete, due to many habitats and wide areas that are bryologically poorly investigated.

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