DIDYMODON AUSTRALASIAE (POTTIACEAE, BRYOPHYTA),
A NEW SPECIES FOR RUSSIA

DIDYMODON AUSTRALASIAE (POTTIACEAE, BRYOPHYTA),
НОВЫЙ ВИД ДЛЯ РОССИИ

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Abstract

Didymodon australasiae is reported for the first time from Russia. It was collected in the south of Zabaikalsky Territory, in Sokhondinsky Nature Reserve. This locality extends northward its known distribution in Eurasia. Description, illustrations and ecological data based on Siberian material are provided.

INTRODUCTION

The genus Didymodon is one of the largest and taxonomically most difficult in the family Pottiaceae. Zander (1993) accepted 122 species in his to-date latest comprehensive enumeration, but a modern revision of the whole genus has not yet been accomplished. In the “Checklist of mosses of East Europe and North Asia” (Ignatov et al., 2006), 21 species of Didymodon were listed for the territory of Russia. Since then, one species, D. zanderi Afonina & Ignatova, was described as new for science (Afonina & Ignatova, 2007), and five species were subsequently added to Russian moss flora as a result of extensive floristic investigation in different areas of the country (Afonina et al., 2010). The diversity of the genus in Zabaikalsky Territory turned out to be especially rich: it currently includes 17 species (unpublished data of the authors). This richness can be explained by the peculiarity of climate and landscape diversity of the region, which provides a great diversity of habitats suitable for the species of Didymodon. The territory is generally mountainous, and large areas in its southern and especially southeastern part are occupied by the steppe and forest-steppe vegetation.

In the course of identification of recent moss collections from Zabaikalsky Territory, Didymodon australasiae (Hook. & Grev.) R.H. Zander was detected; it represents an additional novelty for the moss flora of Russia. The species was collected in Sokhondinsky Nature Reserve, which is situated in the south of Zabaikalsky Territory. Didymodon australasiae occurs at all continents in mostly xeric areas (Jiménez et al., 2005); the nearest known location of the species is in Mongolia (Tsegmed, 2010). Beside that, it is reported from southern Kazakhstan, Uzbekistan, Afghanistan and Turkmenistan (Abramov et al., 1986; Jiménez et al., 2005). Some of the earlier Asian records were published under the names Didymodon (Trichostomopsis) aaronis (Lorentz) J. Guerra, D. incrassatus (Lindb.) Broth., or D. haussknechtii (Jur. & Milde) Broth., which were put into synonymy with D. australasiae by Jiménez et al. (2005).

Didymodon australasiae has repeatedly been assigned to the genus Trichostomopsis, together with the closely related D. umbrosus (Müll. Hal.) R.H. Zander. The inclusion of Trichostomopsis into the broadly conceived genus Didymodon is nevertheless supported by molecular data (Werner et al., 2005, Kučera & Ignato-
Didymodon australasiae (Pottiaceae, Bryophyta), a new species for Russia

tov, 2015), unless the genus is split into several smaller segregate genera, as suggested by Zander (2013).

TAXONOMIC TREATMENT

Didymodon australasiae (Hook. & Grev.) R.H. Zander, Phytologia 41: 21. 1978. Fig. 1

For the extensive synonymy, refer to Jiménez et al. (2005).

Description based on the Russian material: Plants small, in rather loose tufts, dark-green or blackish green. Stems 0.5–2 cm, erect, without hyalodermis, with central strand. Leaves crisped, twisted or incurved when dry, erecto-patent to spreading when moist, lanceolate, not keeled, 1.0–1.9×0.1–0.3 mm; margins papillose-crenulate, plane, slightly incurved in the mid of the leaf, bi- to tristratose in the distal leaf portion; costa 45–70 μm wide.

Fig. 1. Didymodon australasiae (Hook. & Grev.) R.H. Zander (from: Russia, Zabaikalsky Territory, Afonina A1010, LE). 1 – habit, dry; 2 – habit, wet; 3 – upper lamina cells; 4 – surface cells on adaxial side costa in mid-leaf; 5 – leaf tip; 6–9 – leaves; 10 – median lamina cells; 11–12 – leaf transverse sections; 13–16 – rhizoidal tubers; 17 – stem transverse section; 18 – basal lamina cells. Scale bars: 2 mm for 1–2; 1 mm for 6–9; 100 μm for 3–5, 10–18.
at leaf base, ending below apex, in transverse section with guide cells in 1–2 layers, without ventral sterides, with 1–3 layers of dorsal sterides, ventral epidermis usually bulging, papillose, dorsal epidermis not differentiated (surface cells of costa elongate and smooth or papillose on abaxial side); lamina unistratose except for margins; upper and median lamina cells rounded, subquadratlike, flat, yellowish brown. Marginal cells in 2–6 rows. Another similar species, D. umbrosus, not yet detected in Russia. In Sokhondinsky Reserve, the species was found on modified rhizoids in leaf axils and mostly are above-ground, growing on the leaf surface. It formed small, loose tufts, sometimes with 1–3 layers of dorsal stereids, ventral epidermis usually unistratose except for margins; guide cells in 1–2 layers, without ventral stereids, with 1–3 papillae per cell, generally thick-walled; basal cells rectangular, hyaline, smooth, thin-walled, 8–12 μm wide and 14–40 μm long; marginal basal cells not or slightly differentiated. Rhizoidal tubers multicellular, irregularly shaped, with rounded-protruberant cells, 20–40 μm long, red-brown, smooth. Sporophytes not seen in Siberian specimens, their description follows Jiménez (2006).

**Distribution.** Didymodon australasiae is distributed in mostly arid regions on all continents. It is known from the Mediterranean Region including Macaronesia, south-west and central Asia (Jordan, Israel, Lebanon, Turkey, Oman, Yemen, Iraq, Iran, Afghanistan, Kazakhstan, Uzbekistan, Turkmenistan, Mongolia), northern and southern Africa (Morocco, Algeria, Tunisia, Egypt, Ethiopia, Cabo Verde, Zaire, Namibia, South Africa, Lesotho), North, Central and South America, Australia and New Zealand (Jiménez et al., 2005; O’Shea, 2006; Zander, 2007; Ros et al., 2013). The locality in Zabaikalsky Territory extends northwards its known distribution in Asia.

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**Literature Cited**


