

***Didymodon erosus* sp. nov. (Musci, Pottiaceae)
from the Iberian Peninsula**

by

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With 3 figures

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Abstract: *Didymodon erosus* is described and illustrated as a new species from two localities in Spain (Iberian Peninsula), growing on calcareous rocks. It is characterized mainly by its markedly erose and papillose-crenulate in the upper middle leaf margins and rhizoidal tubers underground or on rhizoids in the lower part of the stem.

Key words: *Didymodon erosus*, Pottiaceae, taxonomy, Spain, Iberian Peninsula.

Introduction

While studying material of the genus *Didymodon* for carrying out a taxonomical revision of this genus in the Mediterranean Region, Macaronesia and southwestern Asia, and *Gymnostomum* in the Iberian Peninsula and Balearic Islands, we had the opportunity to study some material deposited at SALA. Among them, we found two specimens from the northwestern Spain labelled as *Gymnostomum calcareum* Nees & Hornsch., which could not be assigned to any of the species known in the two genera. A careful study of the specimens led us to the conclusion that it belongs to the genus *Didymodon*. After studying the majority of the types of the taxa attributed to *Didymodon* in Europe, Africa, Asia and North America and after comparing the specimens with the relevant literature, for example Allen (2002), Kučera (2000, 2002), Magill (1981), Saito (1975), Li et al. (2001) and Zander (1981, 1994, 1998), we concluded that these samples correspond to an undescribed taxon of *Didymodon*.

Description

Didymodon erosus J.A. Jiménez & J. Guerra sp. nov.

Figs. 1-3

TYPE: España. Salamanca: Cilleros de La Bastida, Sierra de las Quilamas, 4 Junio 1985, Elías s.n. (holotype, SALA 1234).

Epithet: *erosus*, *-a*, *-um* = irregularly notched or ragged, as though gnawed.

Bulbilli rhizoidei. Phyllidia margine claro modo erosa papilloso-crenulate in dimidia superiore parte, plana quidem aut parce recurvata in dimidia vel paulo eo amplius (1/2-3/4) basali parte, lamina plerumque unistrata, nonnumquam autem pro parte bistrata, cellulis ventralibus dimidia superioris partis quadratis vel diversimode polygonalibus.

Plants 0.5-0.8(1) cm high, growing in dense turfs or more or less compact cushions, olive-green. Rhizoidal tubers underground or on rhizoids in the lower part of the stem, multicellular, straight or slightly curved, 35-65 × 12.5-25 µm, brown, smooth. Stems generally branched, hyalodermis absent, sclerodermis present, central strand weakly differentiated to undifferentiated; axillary hairs of 2-6 cells, with 1-2 brown basal cells and hyaline upper cells. Leaves erect-patent to incurved, occasionally twisted when dry, erect-patent to spreading when moist, lanceolate to narrowly ovate-lanceolate, 0.5-1.5 × 0.2-0.35 mm; lamina generally unistratose, sometimes bistratose in patches, green-yellowish with KOH; apex acute; margins entire in the lower middle of the leaf, markedly erose and papillose-crenulate in the upper middle, plane or lightly recurved from base to 1/2 or 3/4 of the leaf, unistratose. Costa 50-70(90) µm wide at leaf base, generally excurrent in a thick mucro, percurrent or ending several cells below apex, ventral cells of the costa, in the upper middle of the leaf, quadrate or variously polygonal, papillose, dorsal cells of the costa, in the upper middle of the leaf, quadrate to rectangular, strongly papillose; costa in transverse section at leaf base semicircular; with 3-5 guide cells in 1 layer, (0)1 layer of ventral stereids, 1-2(3) layers of dorsal stereids, ventral epidermis differentiated, generally papillose, dorsal epidermis differentiated, strongly papillose. Upper and middle laminal cells rounded to variously polygonal, oblate or not, (5)8-12.5(15) × 6-10(12.5) µm, with 1-2 simple or bifurcate papillae per cell, thick-walled; basal cells quadrate to rectangular, 10-25(40) × 8-10(12.5) µm, smooth or sparsely papillose, lightly thin-walled. Gemmae absent on leaves. Dioicous. Perichaetia terminal or on short lateral branches, generally in the bifurcation of two vegetative branches, with 3-4(5) archegonia; perichaetial leaves similar to vegetative leaves, outer leaves shorter. Sporophyte unknown.

Additional specimen seen (paratype): España. Salamanca: Linares de Riofrío, bosque de las Honfrías, 6 Febrero 1985, Elías s.n. (SALA 330).

Discussion

Didymodon erosus is characterized by its rhizoidal tubers underground or on rhizoids in the lower part of the stem, leaves lanceolate to narrowly ovate-lanceolate, lamina generally unistratose, sometimes bistratose in patches, margins markedly erose and papillose-crenulate in the upper middle part of the leaf, plane or lightly recurved

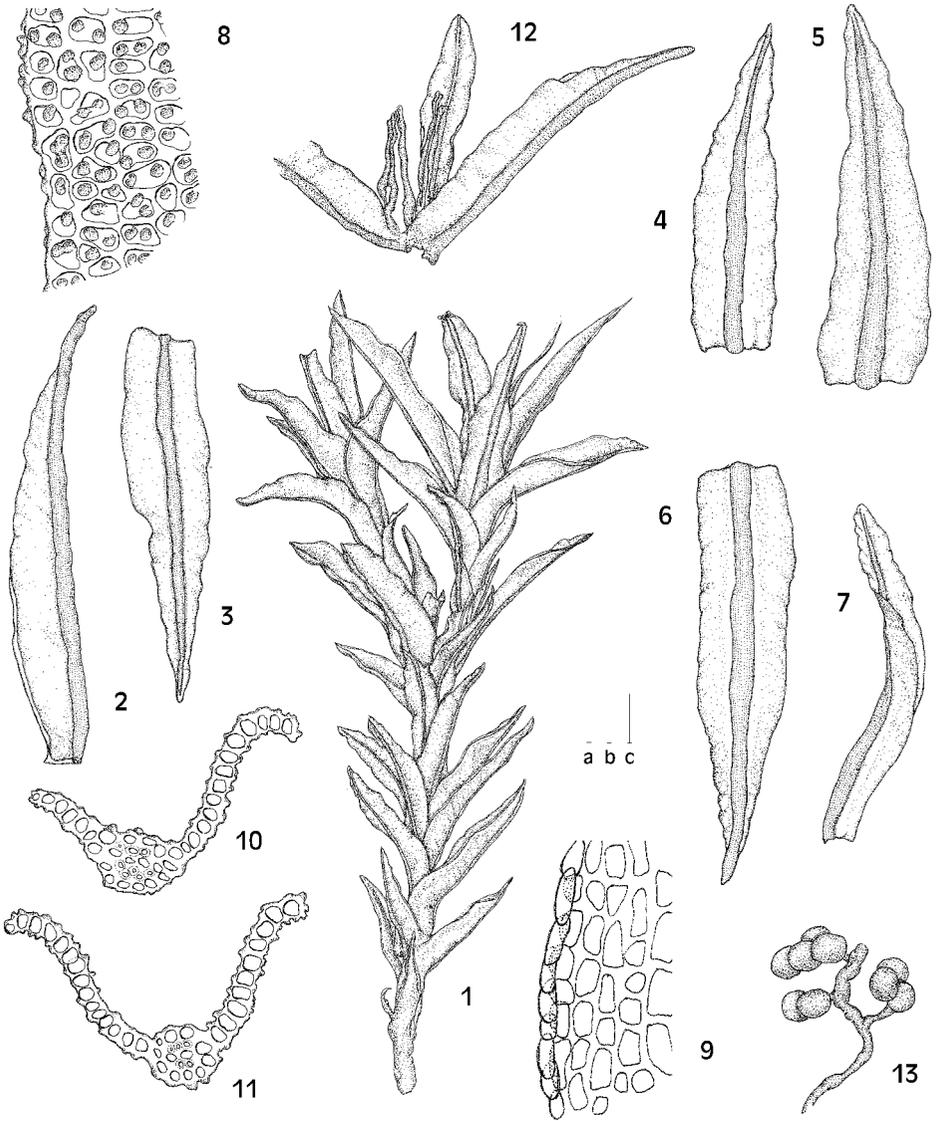


Fig. 1. *Didymodon erosus* (All from holotype). 1: Habit, wet; 2-7: Leaves; 8: Upper leaf cells; 9: Basal leaf cells; 10-11: Cross-sections of leaves; 12: Perichaetial leaves and archegonia; 13: Rhizoidal tubers. Bars: a = 1.5 mm (1); b = 0.3 mm (2-7, 12), 50 μ m (10-11) and 60 μ m (13); c = 12 μ m (8) and 30 μ m (9).

from base to 1/2 or 3/4 of the leaf, perichaetia terminal or on short lateral branches, generally in the bifurcation of two vegetative branches.

This new species is close to *Didymodon sinuosus* (Mitt.) Delogne, because both species share a similar stance of the leaves when moist, margins erose and papillose-

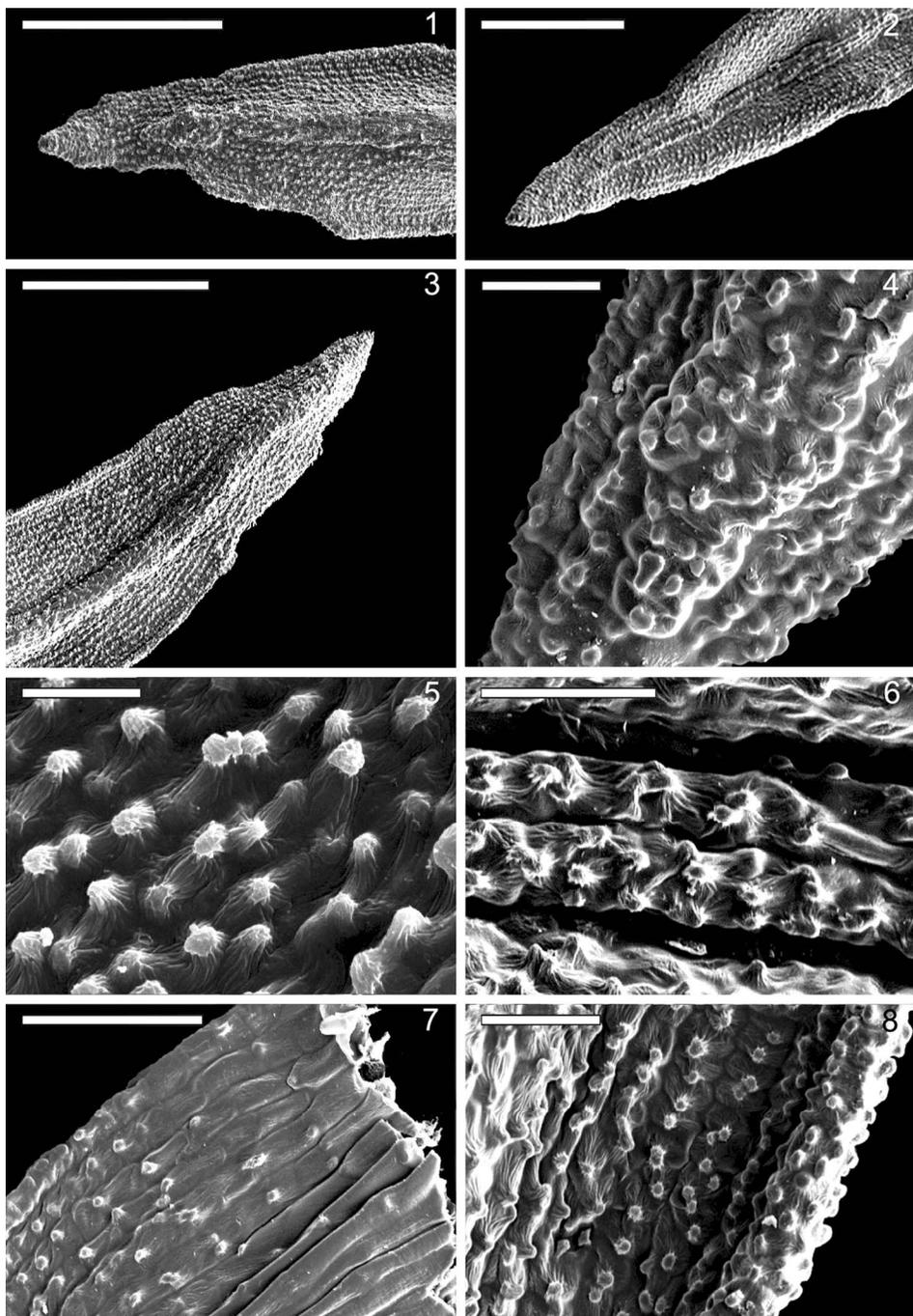


Fig. 2. *Didymodon erosus* SEM (All from holotype). 1, 3: Dorsal surface of leaves shown erose margins; 2: Ventral surface of leaf; 4: Apex of leaf; 5: Upper leaf cells; 6: Ventral surface of the costa; 7: Basal leaf cells; 8: Middle laminal cells at the margin. Bars: 1-3 = 200 μ m; 4, 6, 8 = 20 μ m; 5 = 10 μ m; 7 = 50 μ m.

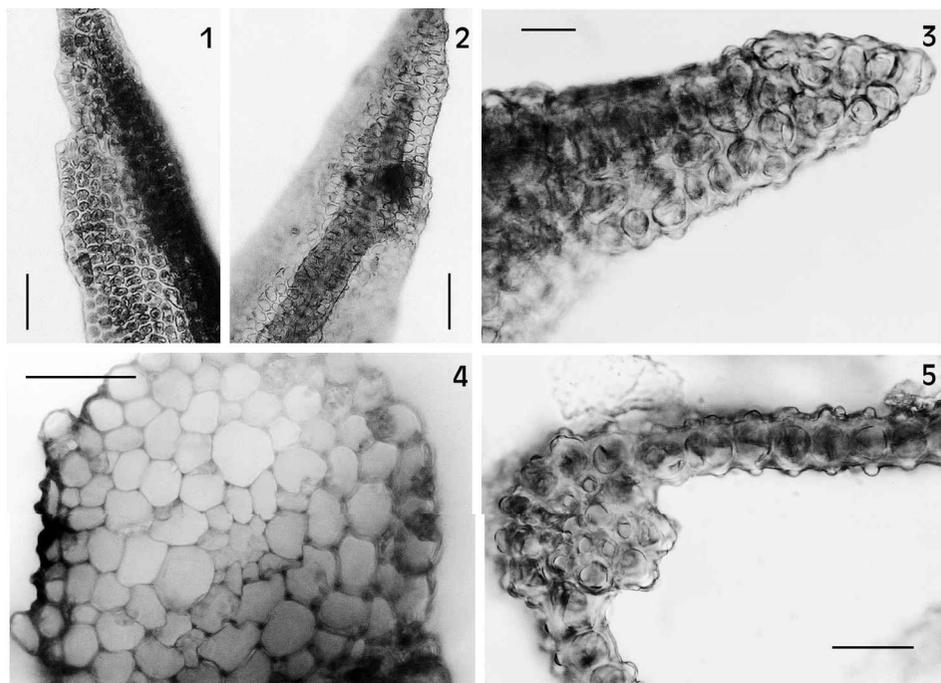


Fig. 3. *Didymodon erosus* LM (All from holotype). 1, 2: Apex of leaves; 3: Mucro of leaf; 4: Cross section of stem; 5: Cross section of leaf. Bars: 1, 2 = 50 μ m; 3 = 18 μ m; 4 = 0,2 mm; 5 = 40 μ m.

crenulate in the upper middle of the leaf, the recurved margins and upper and middle laminal cell size, although *D. sinuosus* can be distinguished by its leaves crisped when dry, very fragile in the upper part, leaves more than 1.5 mm long, margins generally with teeth near leaf apex and guide cells in two layers.

The rhizoidal tubers resemble those of *D. tomaculosus* (Blockeel) M.F.V. Corley, however the entire margins and upper and middle laminal cells smooth or with low mamillae easily differentiate this species. *Didymodon tophaceus* (Brid.) Lisa is another species that can also be confused with *D. erosus* because both taxa share the same habitat, although the latter can be distinguished by having the ventral cells of the costa, in the upper middle of the leaf, quadrate or variously polygonal, while in *D. tophaceus* they are elongate.

Didymodon erosus is known from only two localities in the same province. According with the labels the holotype was collected on wet calcareous rocks (tufa) and the paratype on calcareous rocks.

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