

NOTES ON *PHILONOTIS* (BARTRAMIACEAE, MUSCI). 14.
PHILONOTIS ANGUSTIRETIS, SPECIES NOVA, FROM N.W. HIMALAYA

ЗАМЕТКИ О *PHILONOTIS* (BARTRAMIACEAE, MUSCI). 14.
PHILONOTIS ANGUSTIRETIS, НОВЫЙ ВИД ИЗ СЕВЕРО-ЗАПАДНЫХ ГИМАЛАЕВ

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Abstract

Philonotis angustiretis is described. It is known only from one specimen collected in N.W. Himalaya and named on the label of a herbarium specimen as a new species by V.F. Brotherus. It belongs to *Philonotis* section *Philonotula*, and its closest relatives are the species grouped in the neighborhood of *Philonotis thwaitesii* Mitt. These species have the leaves broadest at base, revolute basal leaf borders, papillae at the distal ends of laminal cells, and the capsule horizontal to nodding with a complete peristome. It differs from these species in being much smaller and having different laminal cell areolation.

Резюме

Описан новый вид *Philonotis angustiretis*. Вид известен по единственному образцу, собранному в северо-западных Гималаях, который В.Ф. Бротерус подписал на гербарной этикетке этим названием, с указанием того, что это новый вид. Однако это название так и не было обнародовано. Вид принадлежит к секции *Philonotula* рода *Philonotis*; он наиболее близок в видам, группирующимся вокруг *Philonotis thwaitesii* Mitt. Все они характеризуются листьями с наибольшей шириной в самом основании листа, отвороченным краем в нижней части листа, папиллами в верхнем углу клетки и горизонтальной до наклоненной коробочкой с полно развитым перистомом. Вместе с тем, новый вид отличается от всех остальных значительно меньшими размерами растений и особенностями клеточной сети.

KEYWORDS: V.F. Brotherus, J.F. Duthie, India, Kashmir, *Philonotis* section *Philonotula*, new species, taxonomy

INTRODUCTION

During my ongoing studies of southeast Asiatic *Philonotis* (Koponen & Norris, 1996; Koponen, 1996, 1998, 2009, 2010a,b, 2012; Koponen & Virtanen, 1998; Virtanen & Koponen, 1998), I found in herbaria H and H-BR, and in collections from Sino-Himalayan area received for identification, a few specimens that were difficult to identify. Two such plant were described as *P. lizangii* T.J. Kop. (Koponen, 2010c) and *P. laii* T.J. Kop. (Koponen, 2010d). One more problematic specimen is a small-sized plant with very small capsules and the leaf cell characters quite different from the other species of *Philonotis*. In the herbarium (H-BR) the only known specimen belonging to this taxon is the holotype specimen given below. V.F. Brotherus had observed its differences with other taxa and gave a herbarium name to it. I want to give to Brotherus the credit of recognizing this undescribed taxon by using his herbarium name. Brotherus (1898) also used the name *Philonotis angustiretis* for a different African specimen which is a *nomen nudum* (Lindau, 1895).

Philonotis angustiretis Broth. ex T.J. Kop., *species nova* (Fig. 1)

Holotype: N.W. Himalaya, [Kashmir], leg. J. F. Duthie 5914 (H-BR, as *Philon. angustiretis* Broth. n. sp.).

Plants brownish, tiny and slender, to 6 mm tall; habitus that of a typical *Philonotis*. Rhizoids brown, minutely papillose. Stems slender, green. In cross-section the outer wall of epidermal cells thin, colorless, other parts of the wall thick; below the epidermis are one or two layers of brownish cells with thick walls, inner cortical cells thin-walled, larger. Central strand present. Deciduous propagules with a stalk and a few acute leaves present on stems. Leaves on stem below perichaetium erect to erect spreading and slightly secund when dry, erect spreading when wet, slightly concave and widest at the insertion, ca. 0.2 mm wide and ca. 1 mm long, tapering gradually to an acuminate apex. Leaf margins smooth at base, minutely geminate at mid-leaf, and serrulate near the apex, also revolute at proximal leaf base. Innovations 4 mm long, leaves of innovations similar to stem

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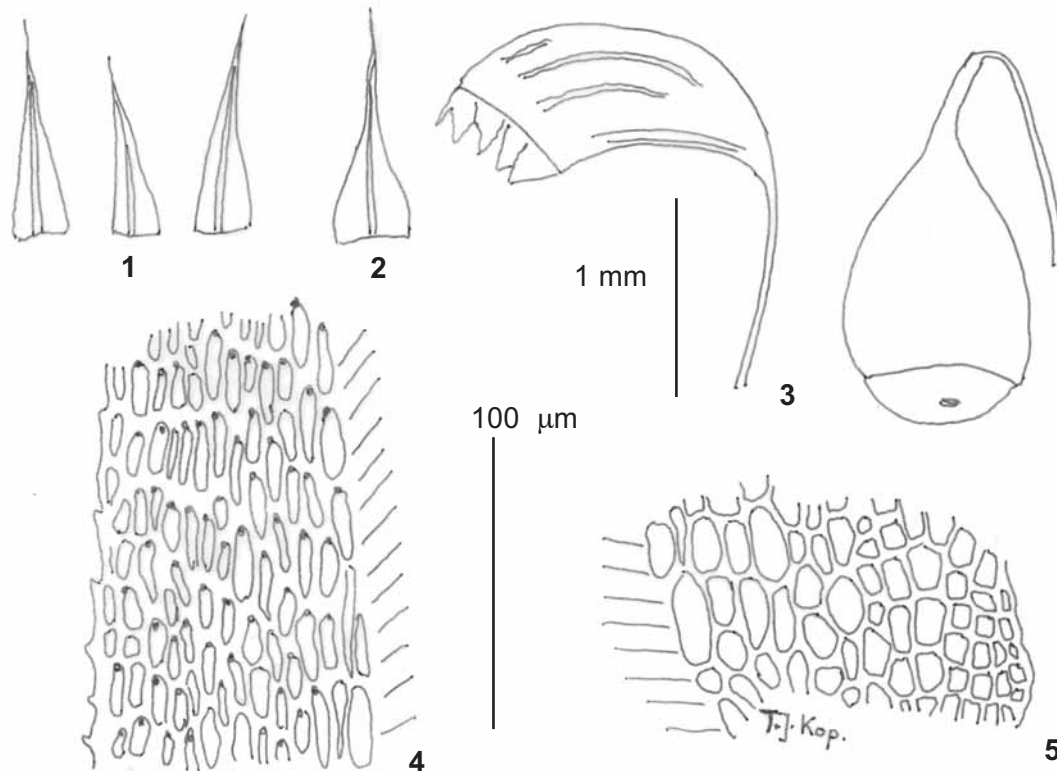


Fig. 1. *Philonotis angustiretis* T.J. Kop. (from the type). 1: Leaves. 2: Perichaetial leaf. 3: Old and young capsules. 4: Leaf border and laminal cells at mid-leaf; 5: Leaf base.

leaves but smaller. Leaf alar cells \pm quadrate, smooth and thin-walled, 10–15 μm wide; cells between alar cells and costa short rectangular, 7.5–10 \times 17–27 μm , smooth. Cells at mid-leaf thick-walled, 5–7.5 \times 15–27 μm , with a distinct papilla at the distal cell end. Distal laminal cells gradually narrower, thick-walled with a papilla on the distal cell end. Leaf costa not reaching the apex, 37 μm broad near base, distally with a few protruding cell ends. In cross-section nearly all cells are stereidal, thick-walled. Dioicous. Perichaetia terminal, innovations below perichaetial leaves numerous, up to 7. Perichaetial leaves gradually long acuminate from a convex base, erect, up to 1.2 mm long; basal leaf cells of innermost leaves thin-walled, wider and longer than basal leaf cells of vegetative leaves, cells on proximal leaf base linear; leaf margins nearly smooth or minutely serrate, costa fading below apex, paraphyses few. Perigonia terminal, bud-like, below perigonium one innovation continuing the growth. Perigonal leaves brownish concave at base, abruptly acuminate, erect, up to 1.3 mm long, cells in concave leaf base thin-walled; leaf margins serrulate at narrow proximal part; costa excurrent; paraphyses numerous. Seta slender, smooth, up to 1 cm long. Capsule striate when dry, 1.5 mm long and 1 mm wide, gibbous, horizontal to slightly nodding. Operculum short convex. Peristome complete, double. Spores 17–25 μm , minutely papillose.

The diagnostic characters of *Philonotis angustiretis* are: (1) the small size of the plants with a tiny capsule, (2) \pm quadrate, thin-walled, leaf alar cells, (3) basal leaf

cells near costa elongate and smooth, and (4) distal laminal cells thick-walled with distinct papilla at the distal cell end. These characters and \pm horizontal capsule with a complete peristome show that it is a species of *Philonotis* section *Philonotula*. In that section, *Philonotis thwaitesii* Mitt. has quadrate basal leaf cells forming a broad area of several cells extending from the border to the costa. *P. lancifolia* Mitt. and *P. runcinata* Ångstr. have similar leaf shapes, revolute leaf borders with geminate teeth and distinct papillae on laminal cells. These three species seem to be the closest relatives of *P. angustiretis*. However, they are larger plant species, the angular alar group of thin-walled, quadrate cells is lacking, and proximal laminal cells are mamillöse/papillose.

A key to southeast Asiatic species of *Philonotis* sections *Bartramidula* and *Philonotula* and a discussion on how to distinguish them is in Koponen (2010b), while a key and discussion of the species of the section *Philonotis* was published by Koponen *et al.* (2012).

The exact type locality of *Philonotis angustiretis* is not known. On the basis of Duthie's tour reports (1893, 1894) it was collected somewhere in Kashmir. Duthie gave the collecting localities of some vascular plants, but mentioned mosses only once: "The whole of the mosses, of which a large collection was made, have been sent to Dr. Brotherus at Helsingfors in Finland for determination" (Duthie, 1893).

Brotherus' study (1898) of N.W. Himalayan mosses confirms that Duthie collected them in 1892–93. Duthie

(in Brotherus, 1898) also gave an account of the characteristics of the nature within his study area, Kashmir and the “countries” Astor, Baltistan and Gilgit. Brotherus had listed specimens from these areas and, in addition, from Kájnág, Srinager and Pamir. Duthie’s collector numbers in Brotherus (1898) run from 10830 to 17799. Since the number of the type of *P. angustiretis* is 5913, it probably was collected from an early phase of Duthie’s excursions. Later, Brotherus and Duthie corresponded, and Duthie sent 17 letters to Brotherus in 1892–1902 (Koponen & Piippo, 2002).

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