

New reports of *Syntrichia* Brid. (Pottiaceae, Bryophyta) taxa from South America

by

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Abstract: Five *Syntrichia* species are reported for the first time from several countries in South America. *Syntrichia ammonsiana*, *S. chisosa* and *S. caninervis* are reported for the first time from Argentina, the latter species being recorded for the first time from South America. The neotropical *Syntrichia bogotensis* is reported for the first time from both Brazil and Chile. *Syntrichia limensis*, previously only known from Peru, is reported from Ecuador.

Keywords: Pottiaceae, *Syntrichia*, distribution, South America.

Introduction

During a taxonomic revision of the genus *Syntrichia* Brid. in South America, based on field and herbarium material, we have identified some interesting specimens that represent new records for several South American countries. They are *Syntrichia ammonsiana* (H.A.Crum & L.E.Anderson) Ochyra, *S. bogotensis* (Hampe) R.H.Zander, *S. caninervis* Mitt., *S. chisosa* (Magill, Delgad. & L.R.Stark) R.H.Zander and *S. limensis* (R.S.Williams) R.H.Zander.

These new records represent a significant extension of the range of these species in South America. It is probable that they merely reflect our lack of knowledge of the bryoflora of the individual countries on this continent, and they support the view that a substantial part of the moss flora of South America remains to be discovered.

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Materials and methods

The individual specimens studied were housed in the herbaria at B, EGR, JE and NY. They had been identified with varying degrees of success, three of the five specimens deposited at NY being unnamed. The specimens were studied using the standard anatomical and morphological techniques applicable to bryophytes. Records were checked against the floristic literature for South American bryophytes, including the important publications of Cano & Gallego (in press), Churchill et al. (2000), Delgadillo et al. (1995) and Kramer (1988). Author abbreviations follow Brummitt & Powell (1992).

Results

The new *Syntrichia* records for South American countries are listed below.

Syntrichia ammonsiana (H.A.Crum & L.E.Anderson) Ochyra, *Fragm. Florist. Geobot.* 37: 212. 1992.

ARGENTINA. Río Negro, Patagonia, prope El Bolsón, monte Piltriquitron, 850 m, 22 August 1961, Topál 5/a (EGR). Tucumán, Horca Molle, above city of Tucumán, deep arroyo behind and below main building, 29 November 1960, Steere 60-24 (NY). Ibidem Steere 60-9 (NY).

New to Argentina.

This is a propaguliferous species recognized by spatulate to lingulate leaves, not constricted at the middle, plane leaf margins, leaf apex mucronate or apiculate, costa weakly papillose on the dorsal surface, unistratose lamina, undifferentiated leaf margins, and median laminal cells 12.5-20 μm wide. The most peculiar feature, however, is the presence of brood leaves borne in clusters at the tip of the stem and also on branched stalks in the axils of the upper leaves. Previously, this species was known only from North America and Southern Africa and recently it has been reported from Peru (Gallego et al. 2006). The samples from Tucumán were collected by W.C.Steere in 1960 on tree trunks, and belong to a collection of unidentified mosses housed at NY. The specimen housed at EGR was identified as *Tortula pygmaea* Dusén [*Syntrichia lithophila* (Dusén) Ochyra & R.H.Zander] and it was mixed with *Syntrichia papillosa* (Wilson) Jur., growing at 850 m on bark of *Maytenus boaria* Molina. Although these two last taxa are propaguliferous species, they are very different from *S. ammonsiana*. The three samples from Argentina have smaller cells than typical *S. ammonsiana* (10-12.5 μm , in contrast to 12.5-20 μm wide), and moreover the specimen from Patagonia has weakly differentiated leaf margins. This last character is unusual in *S. ammonsiana*, but until we know the variability of this species in South America it is difficult to make a further assessment. According to Matteri (2003), this species has not been reported in Argentina, and therefore it is a new record for the country.

Syntrichia bogotensis (Hampe) R.H.Zander, *Bull. Buffalo Soc. Nat. Sci.* 32: 267. 1993.

BRAZIL. São Paulo, New Granada, Weir 289 "Musci Brasilienses" (Herbarium Mitten in NY). CHILE. Coquimbo, Dpto. Elqui, Baño de Pangué, 2500 m, 19-21 November 1947, Benkt Sparre 2644 (B103815).

New to both Brazil and Chile.

This is a neotropical species characterized by orange to reddish or red-brown hair-points, occasionally sharply toothed at the base, plane leaf margins only sometimes slightly recurved near the middle, the costa with 1-3(4) rows of stereids in cross section but without hydroids, upper and median laminal cells 12-26 μm wide, with (4)6-18(20) bifurcate non-pedicellate papillae per cell, 2.5 μm high, and the peristome with a low basal membrane consisting of 1-2(4) cell rows, 50-95 μm in height.

Syntrichia bogotensis is a neotropical-Macaronesian species to date known from Mexico, Central America (Guatemala), western South America (Bolivia, Colombia, Ecuador, Peru and Venezuela) (Allen 2002; Churchill et al. 2000; Churchill & Linares 1995; Delgadillo et al. 1995; Mishler 1994) and Madeira Island (Gallego et al. 2005). Recently, it has been reported from Argentina (Cano & Gallego in press).

The studied specimen from Brazil was accurately identified as *Tortula decidua* Mitt., as this taxon is a synonym of *Syntrichia bogotensis*. However, *Syntrichia bogotensis* is not listed for Brazil by Yano (1981, 1995), so we report it here as new. The Chilean material was identified as *Tortula andicola* Mont. [*Syntrichia andicola* (Mont.) Ochyra], a species closely related to *S. bogotensis* but with strongly recurved leaf margins and a usually dentate apex. According to He (1998) and Cano (2003), *Syntrichia bogotensis* has not been reported in Chile, and therefore it is newly reported here from this country.

Syntrichia chisosa (Magill, Delgad. & L.R.Stark) R.H.Zander, Bull. Buffalo Soc. Nat. Sci. 32: 269. 1993.

ARGENTINA. Salta, Dpto. Las Curtiembres, km 77 along Ruta Nacional, 11 October 1994, Buck 26154 (NY).

New to Argentina.

Syntrichia chisosa has mucronate leaves, with plane margins, a bistratose lamina, small median laminal cells (5-10 μm wide), and the costa strongly papillose dorsally with simple papillae up to 12.5 μm high. It has brood leaves borne in clusters at the tip of the stem and also on stalks in the axils of the upper leaves.

The species has been reported from North America (Mishler 2007), Mexico (Mishler 1994), Bolivia (Churchill & Fuentes 2005) and Southern Africa (Magill et al. 1983). The studied specimen was identified by W.R. Buck as *Tortula chisosa* Magill, Delgad. & L.R.Stark from material collected by him in 1994 at 1300 m on rocks and trees. When Magill et al. (1983) described *S. chisosa* they noted that although the distribution of this species might at first appear unusual, its discovery in South America was to be expected, in common with other species that occur disjunctly in South Africa. This hypothesis was indeed confirmed by Churchill & Fuentes (2005) and now is reinforced by the additional collection from Argentina.

Syntrichia limensis (R.S.Williams) R.H.Zander, Bull. Buffalo Soc. Nat. Sci. 32: 269. 1993.

ECUADOR. Pichincha, Quito, Jameson (Herbarium Mitten in NY).

New to Ecuador.

This species is recognized by its long smooth hyaline hair points, leaves not constricted, not bordered, with margins recurved up to the middle or upper third, sometimes dentate near the apex, with median laminal cells $15\text{-}25 \times 12.5\text{-}17.5 \mu\text{m}$, the costa with hydroids and 2-3 stereid layers in cross section, the peristome with a very low basal membrane, the spores $20\text{-}25 \mu\text{m}$ in diameter, and the autoicous sexual condition.

Syntrichia limensis is a Neotropical species previously known only from Peru growing on soil at low altitudes 200-700 m. No indication of ecology or altitude is given on the label of the specimen from Ecuador.

Syntrichia caninervis* Mitt. var. *caninervis, J. Proc. Linn. Soc. Bot. Suppl. 1: 39. 1859.

ARGENTINA. Río Negro, Patagonien, S. Ufer des Lago Pellegrini (Cuenca de Vidal), östlich des Rio Neuquen, bei Bhf. Contraalmirante Cordero, 25 January 1922, Schiller (herbarium Herzog in JE).

New to South America (Argentina).

Syntrichia caninervis is a variable taxon for a long time known on the American continent as *Tortula bistratosa* Flowers. It is characterized by its leaves usually patent or spreading when moist, the small size of the plants (0.4-1.1 cm high), the leaves usually ovate, the lamina bistratose throughout and the costa generally with longly pedicellate and branched papillae in the upper part and non-pedicellate and bifurcate papillae in the lower part. Sometimes the leaf apex is hyaline and tapered to the hair-point, occasionally finely toothed. According to Gallego (2005), two important distinguishing features of this taxon are the stratosity of the lamina and the papillosity of the dorsal side of the costa. We discovered the new record of *S. caninervis* in a separate envelope together with the holotype of *Tortula planicosta* Herzog, which is now treated as a species of *Pseudocrossidium* R.S.Williams (Cano & Gallego in press). According to Matteri (2003), *Syntrichia caninervis* has not been reported in Argentina, and it is therefore a new record for the country.

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