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New Occurrences of Pleurocarpous Mosses for the state of Bahia, Brazil.

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Abstract: Four new records of pleurocarpous mosses are reported for the first time for the State of Bahia: *Phyllocladon truncatulus* (Hypnaceae), *Trichosteleum brachydictyon*, *Sematophyllum tequendamense* and *Potamium lonchophyllum* (Sematophyllaceae). These species were found in the Tropical Atlantic Rainforest situated in the South of Bahia.

INTRODUCTION

The Brazilian bryophyte flora is represented by ca. 3125 species (Yano, 1996) of which, 788 taxa are pleurocarpous mosses, and the bryoflora of Bahia is represented by ca. 320 species. Four new records for the state of Bahia are reported for the first time: *Phyllocladon truncatulus* (Mül. Hal.) W. R. Buck, *Potamium lonchophyllum* (Mont.) Mitt., *Trichosteleum brachydictyon* (Besch.) A. Jaeger and *Sematophyllum tequendamense* (Hampe) Mitt. These records represent an additional contribution to our knowledge of the Brazilian bryoflora.

Phyllocladon truncatulus, *Potamium lonchophyllum*, *Trichosteleum brachydictyon*

and *Sematophyllum tequendamense* were found at the “Estação Veracruz”, a private biological reserve that presents an expressive primary Tropical Atlantic Rainforest fragment, situated in the South Region of the state of Bahia and occupies around 6,000 ha between Porto Seguro and Santa Cruz de Cabrália counties. This ecosystem presents suitable conditions for the growth of pleurocarpous mosses due mainly to high atmospheric humidity.

All specimens are deposited at Alexandre Leal Costa Herbarium (ALCB) of the Instituto de Biologia da Universidade Federal da Bahia, Brazil. The identifications were based on Buck (1998) and Churchill & Linares C. (1995).

RESULTS

1. HYPNACEAE

Phyllodon truncatulus (Müll. Hal.) W. R. Buck, Mem New York Bot. Gard. 45: 521. 1987.

Basionym: *Hypnum truncatulus* Müll. Hal., Syn. Musc. Frond. 2:263. 1851.

Type-locality: Peru

Figures 1-10

Gametophyte green, closely-foliolate, prostrate, branches ascending. Stem in cross section 1-2 rows of small cells surrounding 4 larger cells. Leaves ovate, concave; costa short and double, absent in branch leaves; apex broadly obtuse; margins plane, entire to slightly dentate below, strongly serrate above due to projecting papillae; alar region scarcely differentiated, 1-2 hyaline cells; cells brownish across insertion; median cells fusiform, seriatly papillose; papillae large, branched; basal cells elongate, rectangular, 1-2 papillose or smooth. Sporophyte not seen.

Specimens examined: Brazil, Bahia, Estação Veracruz, Tropical trail, 9-6-1999, S.B. Vilas Bôas-Bastos & C. Bastos 359 (ALCB 41542)

Geographic distribution: Costa Rica, Panama, Colombia, Ecuador, Peru, French Guiana, Jamaica, Hispaniola (Haiti and Dominican Republic), Puerto Rico, St. Vicente (Buck 1998). Tropical Africa (Churchill & Linares C. 1995).

Comments: The specimen was found on soil associated with *Lophocolea* sp. *Phyllodon truncatulus* represents a rediscovery for Brazil since it was previously cited only by Hampe & Geheeb (1881 *apud* Yano 1981) as *Hypnum* only for São Paulo, and by Crum & Steere (1957 *apud* Yano 1981) as *Glossadelphus truncatulus*, but without locality of occurrence.

2. SEMATOPHYLLACEAE

Trichosteleum brachydictyon (Besch.) A. Jaeger, Ber. Thätigk. St. Gallischen Naturwiss. Ges. 1876-77. 416. 1878.

Basionym: *Rhaphidostegium brachydictyon*

Besch., Ann. Sci. Nat. Bot. VI, 3: 252. 1876.

Type-locality: ?

Figures 11-20

Gametophyte green, robust, prostrate, irregularly branched. Stem in cross section 2-3 rows of small thick-walled cells surrounding larger cells. Leaves concave, ovate-lanceolate, median cells porose, fusiform to narrowly rhomboidal; papillae -1 on lumina, only in the upper ½ of leaves; costa absent; apical cells not differentiated; apex gradually long-acuminate, twisted at times; margin serrulate above, entire below; alar region strongly differentiated, 2-3 cells elongate, yellow-reddish, inflated; supra alar cells few, short, quadrate to rectangular. Perichetial leaves lanceolate, long-acuminate, margin strongly serrulate above, subentire below; alar region not differentiated. Setae long (8,5 - 9,0 mm), smooth. Capsule small (0,4 - 0,5 mm), globose, inclined to pendent. Peristome double; exostome well developed, apex of tooth hyaline and papillose.

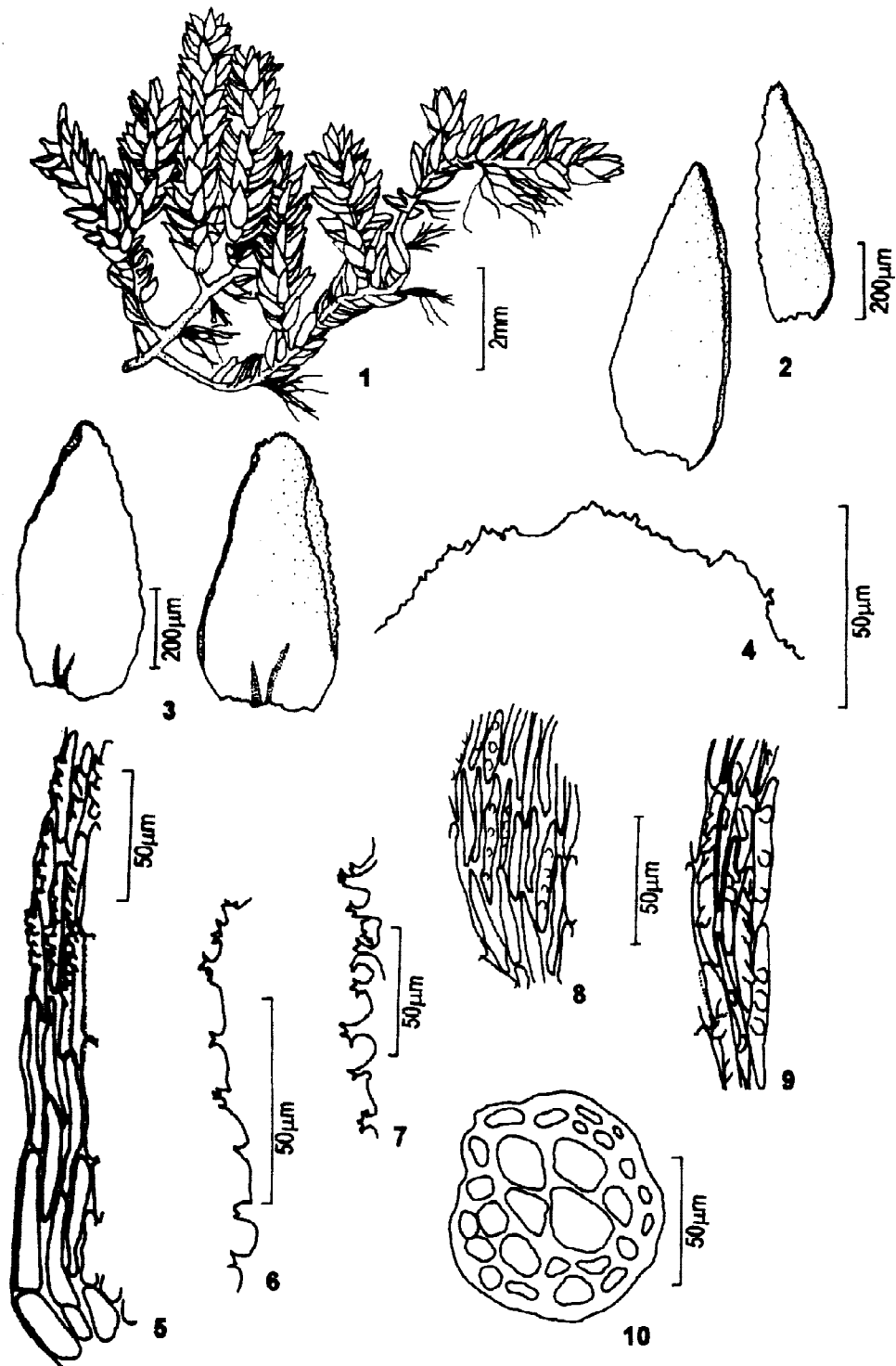
Specimens examined: Brazil, Bahia, Estação Veracruz, Tropical trail, 9-6-1999, S.B. Vilas Bôas-Bastos & C. Bastos 325, 350,390 (ALCB 41509, 42534, 41570).

Geographic distribution: Puerto Rico, Guadeloupe, Dominica and St. Vicente (Buck 1998).

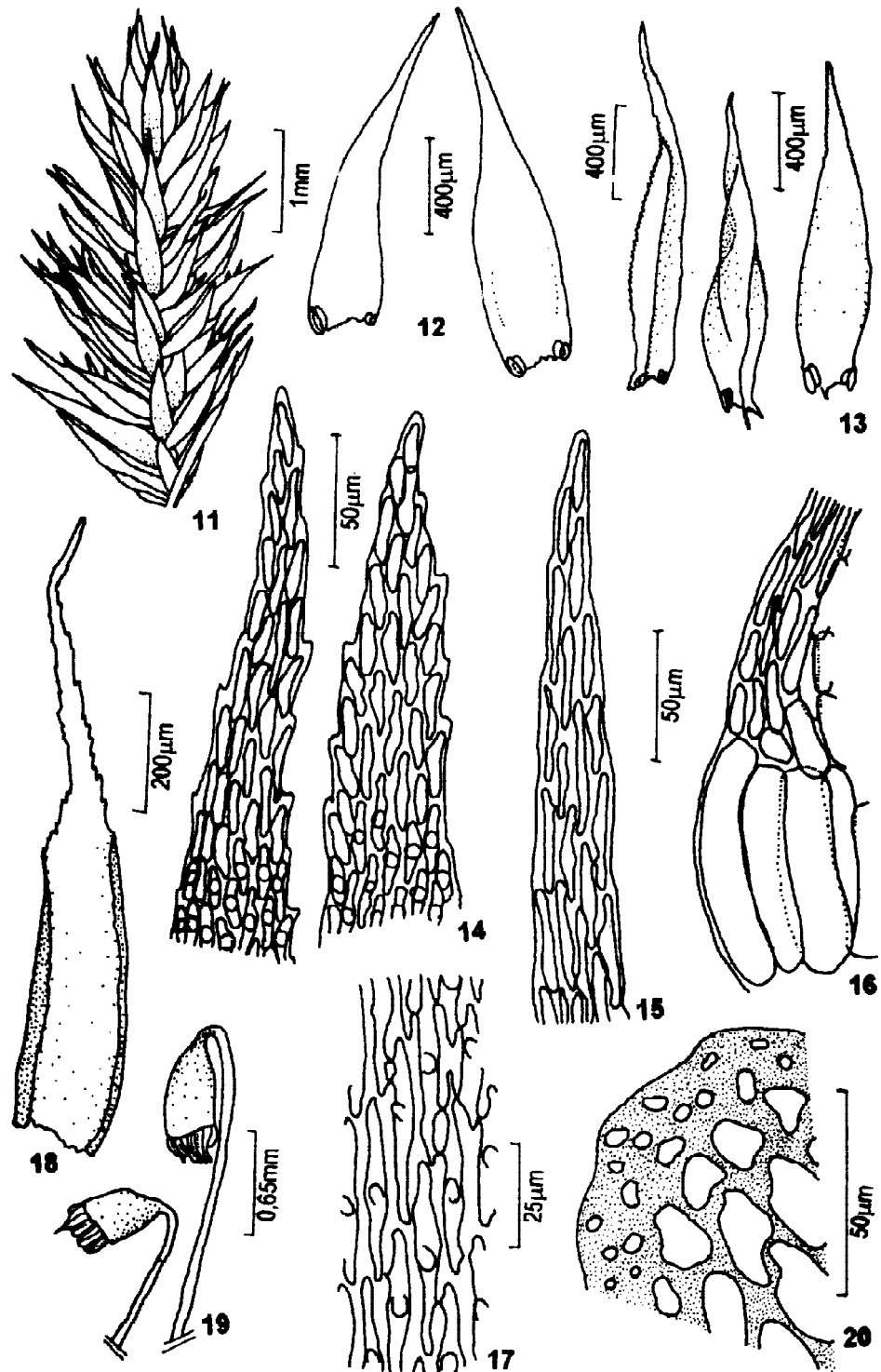
Comments: These specimens grew on decaying logs. *Trichosteleum brachydictyon*, according to Buck (1983, 1998), is recognized by its strongly porose cells. However, in the studied specimens, the cells are less porose than that reported by Buck (*op. cit.*), but agree with the other characters. Buck (1983) pointed out that this species seems to be confined to the Lesser Antilles, although it has also been reported for Puerto Rico. The lack of records for Brazil at moment, may be due to intensive destruction of Atlantic Forest or little study in this area.

Sematophyllum tequendamense (Hampe) Mitt., J. Linn. Soc. Bot. 12: 491. 1869.

Basionym: *Hypnum tequendamense* Hampe, Linnaea 31: 529. 1862.



Figures 1-10. *Phylodon truncatullus* (Müll. Hal.) Buck. 1 - gametophyte, general view; 2 - stem leaves; 3 - branch leaves; 4 - leaf apex; 5 - basal margin; 6-7 - papillae, lateral view; 8 - basal cells; 9 - median cells; 10 - cross section of the stem.



Figures 11-20. *Trichosteleum brachydietyon* (Besch.) A. Jaeger. 11 - gametophyte, general view; 12 - stem leaves; 13 - branch leaves; 14 - stem leaves apex; 15 - branch leaves apex; 16 - alar cells; 17 - median cells; 18 - perichetial leaf; 19 - capsules; 20 - cross section of the stem.

Type-locality: Colombia
 Figures 21-28

Gametophyte green-lustrous, growing in dense mats, closely foliate secondary branches short and ascending. Stem in cross section 3-4 rows of small thick-walled cells surrounding larger cells. Leaves concave, lanceolate; median cells linear; costa absent; apical cells narrowly rhomboidal; apex acute, not acuminate; alar region differentiated, curved toward the insertion at an angle of ca. 212°, 3-4 cells large, oblong; supra alar cells 2, oblong, shorter than alar cells; margin often entire. Sporophyte not seen.

Specimens examined: Brazil, Bahia, Estação Veracruz, EVC/Imbiruçu boundary, 9-9-1999, C. Bastos & S.B.Vilas Bôas Bastos 1727 (ALCB 41679).

Geographic distribution: Northwestern South America; Cuba, Jamaica, Puerto Rico, Guadeloupe (Buck 1998). Colombia (Churchill & Linares C. 1995).

Comments: This specimen occurred on decaying logs associated with *Cheilolejeunea comans* (Spruce) Schust. These first records for Brazil may be likely due to little study in the Atlantic Forest, as well as to their rapid destruction.

Potamium lonchophyllum (Mont.) Mitt. J. Linn. Soc. Bot. 12: 477. 1869

Basionym: *Hypnum lonchophyllum* Mont. Syll. 10. 1856.

Type-locality: French Guiana
 Figures 29-47

Gametophyte dull-green to green-yellowish, prostrate, with long branching sparsely to densely foliate. Stem in cross section 3-4 rows of thick-walled cells surrounding larger cells. Leaves lanceolate to ligulate; costa absent; median cells narrowly fusiform; apical cells shorter and larger; apex acute; margin dentate; at times folded in the lower 1/2 - 1/3; alar region differentiated, 2 cells elongate and inflated; supra alar cells oblong to irregular. Perichaetial leaves ovate to ovate-lanceolate, shorter than vegetative leaves, apex acute to narrowly acute, cells thick-

walled; basal cells quadrate-rectangular; margin strongly serrulate above, entire below; marginal cells rectangular in the base, narrowly rhomboidal above; alar region not differentiated. Setae long, ca. 9 mm, smooth, reddish. Capsule small, ca. 1,8 mm, cylindrical, inclined; operculum conic, short-rostrate; exothelial cells collenchymatous, often bulging. Peristome double, exostome well developed; teeth striolate below; with a zig-zag median line; segments of endostome smooth.

Specimens examined: Brazil, Bahia, Estação Veracruz, EVC/Imbiruçu boundary, 9-9-1999, C. Bastos & S.B.Vilas Bôas Bastos 1671, 1701, 1702, 1714, 1731 (ALCB 41682, 41676, 41677, 41678, 41680).

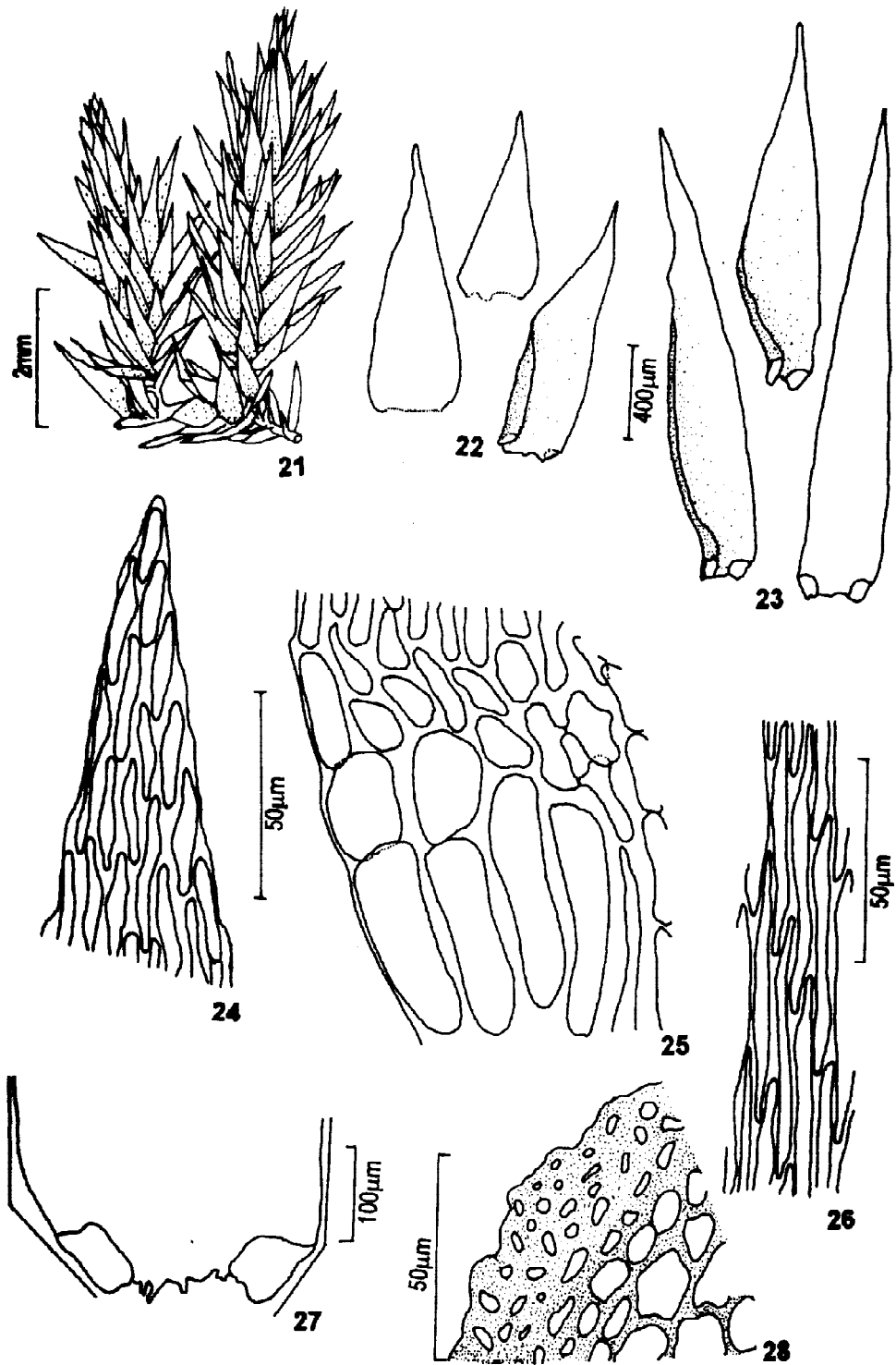
Geographic distribution: Colombia (Churchill & Linares C. 1995), Brazil (Yano 1981, 1995)

Comments: The specimens were found on decaying logs on the border of and also inside a temporary lagoon. Is reported for Brazil only in the Amazonic Region by Florschütz-de Waard (1992 *apud* Yano 1995) as *Sematophyllum lonchophyllum* and Brotherus (1906, 1925 *apud* Yano 1981) as *Potamium uleanum*. *Potamium lonchophyllum* is recognized by its leaves lanceolate to ligulate and branches sparsely foliate. However, other studied specimens collected on the live trunk base, not immersed, shows branches densely foliate and bearing sporophytes (Figs.36-47).

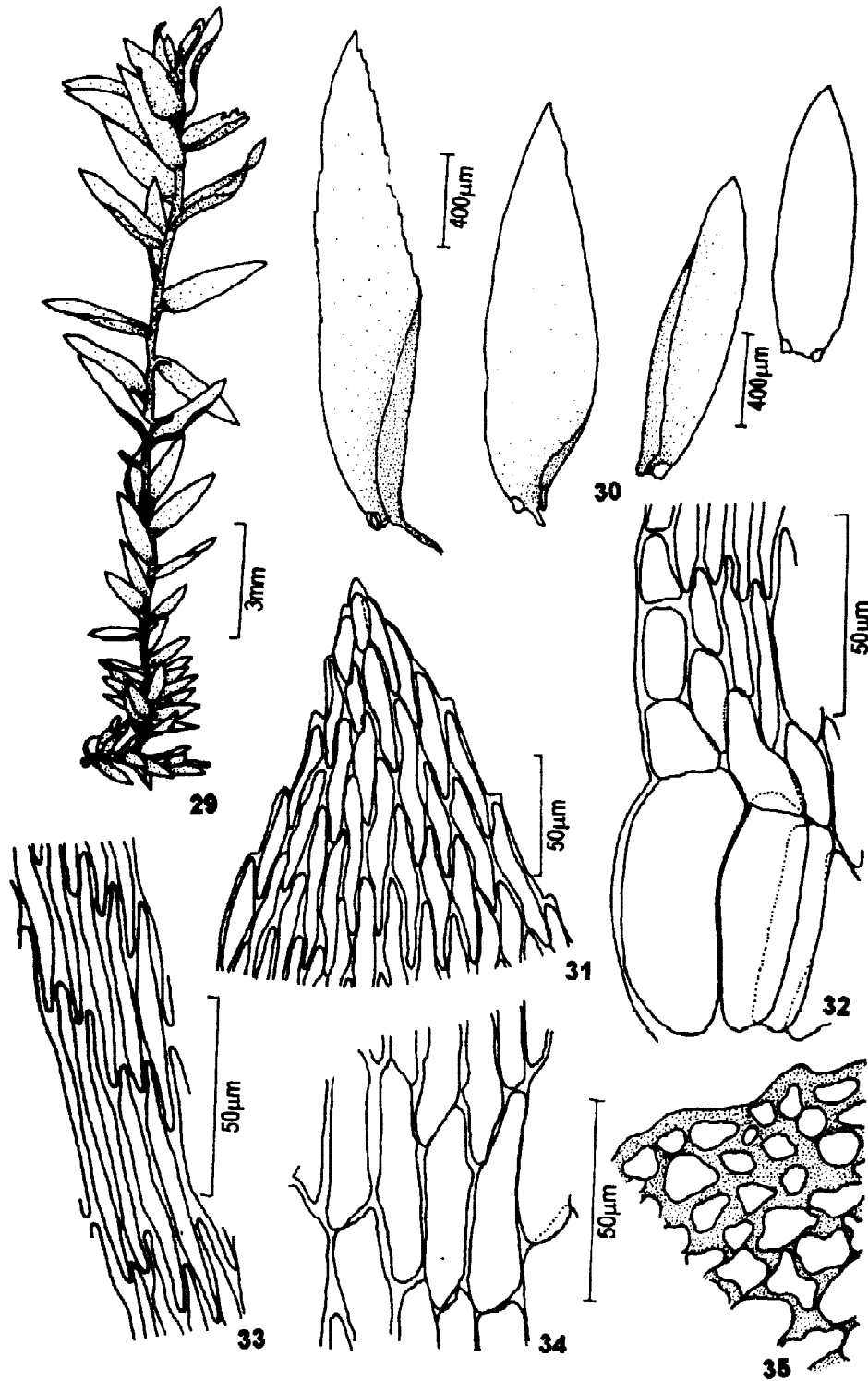
FINAL COMMENTS

In this Atlantic Forest area situated at the South region of Bahia, a few phanerogamic Amazon elements have been spotted (data yet not published), the same seems to be true for bryophytes, since among four of these new records presented in this paper, three are Amazonian elements: *Philloodon truncatulus*, *Sematophyllum tequendamense* and *Potamium lonchophyllum*.

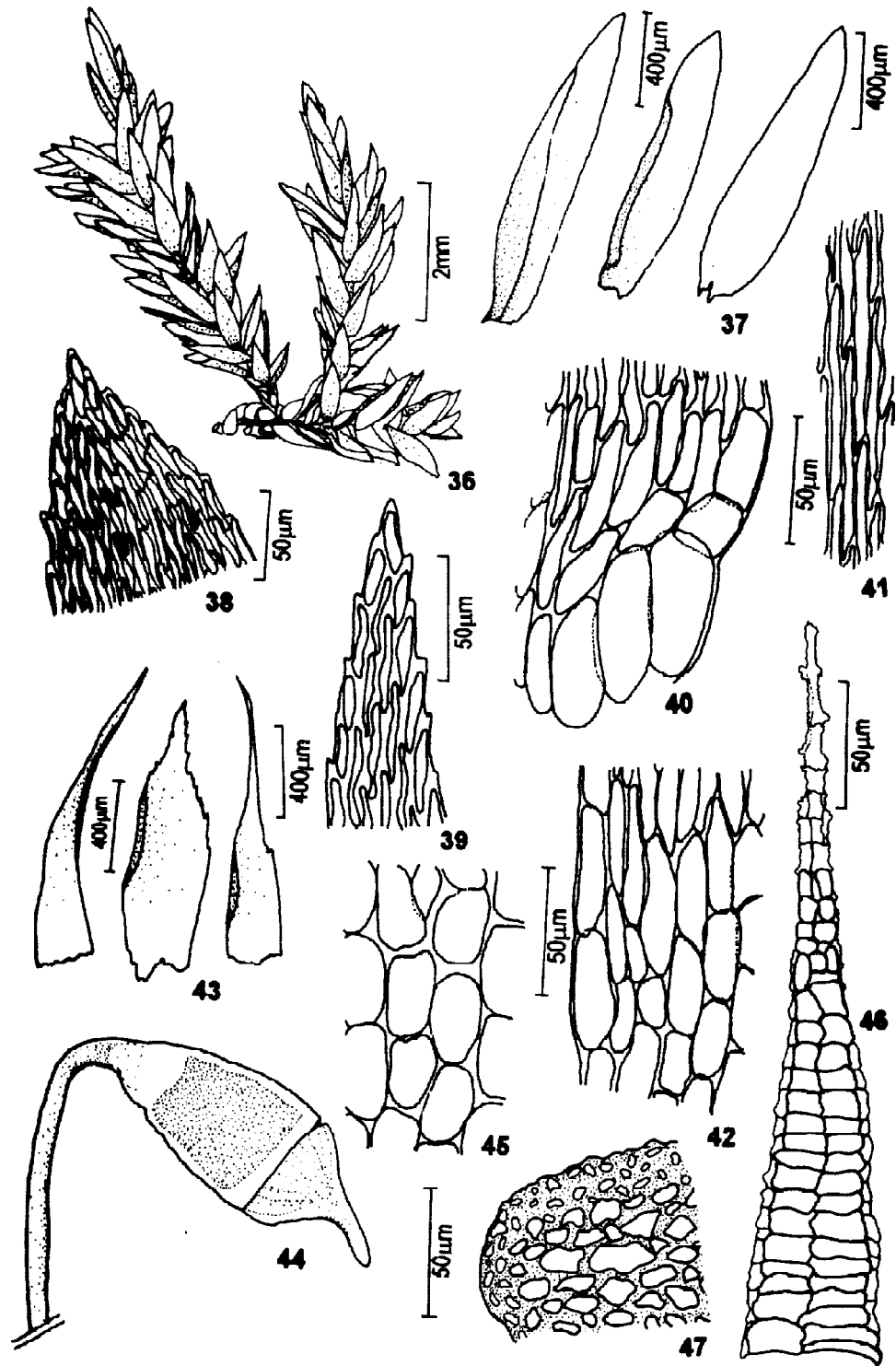
Philloodon truncatulus is reported in the literature as an epixylic species. However, the studied specimen grew on soil, despite an environment providing suitable conditions for



Figures 21-28. *Sematophyllum tequendamense* (Hampe) Mitt. 21 - gametophyte, general view; 22 - stem leaves; 23 - branch leaves; 24 - leaf apex; 25 - alar cells; 26 - median cells; 27 - base of leaf showing position of alar cells; 28 - cross section of the stem.



Figures 29-35. *Potamium lonchophyllum* (Mont.) Mitt. (specimens from inside the temporary lagoon). 29 - gametophyte, general view; 30 - leaves; 31 - leaf apex; 32 - alar cells; 33 - median cells; 34 - basal cells; 35 - cross section of the stem.



Figures 36- 47. *Potamium lonchophyllum* (Mont.) Mitt. (specimens not immersed). 36 - gametophyte, general view; 37 - leaves; 38 - leaf apex; 39 - perichaetial leaf apex; 40 - alar cells of vegetative leaf; 41 - median cells; 42 - basal cells; 43 - perichaetial leaves; 44 - capsule; 45 - exothecial cells; 46 - exostome tooth; 47 - cross section of the stem.

growth on decaying logs. The species is thus likely to be a generalist species.

Morphological variations were found in gametophytic features of *Potamium lonchophyllum* likely due to its corticolous habitat in dry soils, since this species is always reported as occurring in swampy sites.

ACKNOWLEDGMENTS

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