Hoehnea 33(2): 257-259, 1 fig., 2006

Nota Científica/Scientific Note

Tisserantiella minutissima (Mitt.) R.H. Zander, a new and significant record from Distrito Federal, Brazil

Paulo Eduardo Câmara[1,3] and Daniel Moreira Vital[2]

Received: 14.09.2004; accepted: 09.02.2006

ABSTRACT - (*Tisserantiella minutissima* (Mitt.) R.H. Zander, a new and significant record from Distrito Federal, Brazil). *Tisserantiella minutissima* (Mitt.) R.H. Zander is cited as the third collection for Brazil, it is a very unknown plant restricted to Central Brazil and probably often misidentified. The others known collections are from 1868 and 1988. Descriptions and illustrations are provided in order to help identify the taxon.
Key words: Bryophyta, distribution, taxonomy

RESUMO - (*Tisserantiella minutissima* (Mitt.) R.H. Zander, uma nova e significante ocorrência para o Distrito Federal, Brasil). *Tisserantiella minutissima* (Mitt.) R.H. Zander está sendo citada pela terceira vez para o Brasil. Trata-se de uma planta pouco conhecida, restrita ao Brasil Central e que provavelmente vem sendo identificada erroneamente. As únicas coletas conhecidas deste táxon são de 1868 e 1988. Descrições e ilustrações pretendem auxiliar no reconhecimento do táxon.
Palavras-chave: briófita, distribuição, taxonomia

Introduction

Central Brazil is one of the most bryophytically unknown areas in Brazil. The Federal District (DF) is a rectangle of 5,814 km^2 in the center of Brazil at 15°30'S, 16°03'W, at elevations about 1.100 m above sea level and is recognized as an important center of endemism and diversity in Central Brazil (Gentry *et al.* 1997). The vegetation is Brazilian savanna (cerrado) and the climate is tropical savanna, AW in Köppen's classification (SEMATEC 1992).

During an inventory taken at IBGE's Ecological Reserve in the DF area (Câmara 2002) several new occurrences for the area were found, including the unexpected *Tisserantiella minutissima* (Mitt.) R.H. Zander. This plant, until 1988, was only known by its type collection made by Gardner in 1868 in the Serra de Santa Brida, state of Goiás, deposited at the New York Botanical Garden (NY!). After 120 years, a new collection was reported also in Central Brazil (Shäfer-Verwimp 1992), close to the Chapada dos Veadeiros National Park in Goiás State. This is the third record for Brazil.

This genus includes only two other names. One of these, the type of the genus, *T. spathulata* P. de la Varde, has been synonymised by Zander (1993) with *T. pulchella* (Thér. & Phil.) R.H. Zander. The type collections of both are deposited in the Muséum National d'Histoire Naturelle in Paris (PC!).

Once the authors had the opportunity to look at the type collection, the short description provided below are not restricted to the specimens collected by the authors but include the first collection (type) as well as the second one (1988), which means virtually all specimens of the genus collected so far in Brazil.

Due to the relatively low numbers of specialists and collectors of mosses in Brazil and the lack of collections of this plant, it is very likely it has been either misidentified or under collected. This paper intends to give a contribution to a better recognition and identification of the taxon and report a new occurrence of it.

1. Missouri Botanical Garden, P.O. Box 299, Saint Louis, MO, 63110 USA. Pesquisador Associado, Departmento de Botânica, Universidade de Brasília, Brasil
2. Instituto de Botânica, Seção de Briologia e Pteridologia, Caixa Postal 4005, 01061-970 São Paulo, SP, Brasil
3. Autor para correspondência: paulo.camara@mobot.org

Material and methods

Voucher material deposited at IBGE, NY, SP and UB was observed. The acronyms are according to Holmgren *et al.* (1990). The authors had also the opportunity to look at the types of *T. spathulata* and *T. pulchella* deposited at PC which helped to make a more accurate identification of this species.

Results and Discussion

Tisserantiella minutissima (Mitt.) R.H. Zander, Bulletin of the Buffalo Society of Natural Sciences 32: 277. 1993.
Figure 1a-e

Type: Gardner, Serra de Santa Brida, 1868. (NY!).
Weissia minutissima Mitt., Journal of the Linnean Society, Botany 12: 138. 1869.
Hyophilla minutissima (Mitt.) A. Jaeger, Bericht über die Thätigkeit der St. Gallischen Naturwissenschaftlichen Gesellschaft 1871-72: 358. 1873.
Macroglossum minutissimum (Mitt.) Hilp., Beihefte zum Botanischen Centralblatt 50(2): 671. 1933.

Plant acrocarpous, caespitose, gametophytes erect, around 1 mm tall, without ramifications; leaves apressed or spiralled when dry, ca. 1 mm width, ligulate to spathulate, margin crenulate, apex retuse, upper laminal cells with several small short-spiculose papillae; stem central strand present; sclerodermis absent; costa single, subpercurrent, vanishing 5-15 cells below the apex, smooth, adaxial surface partially covered by isodiametric laminal cells, papillose; basal cells of leaves differentiated, smooth, hyaline; perichaetial leaves not differentiated; sporophyte gymnostomous, capsule with annulus vesiculose but not inflated, with orange subquadrate cells as wide as the exothecial cells; seta larger than the exerted urn. Calyptra not seen.

Analyzed materials: BRAZIL. Distrito Federal: IBGE Ecological Reserve, on fallen trunk at gallery forest, Monjolo creek, 1-IX-2000, *Câmara 452* (UB, IBGE); *idem*, on tree trunk, Pitoco creek, 12-IV-2001, *Câmara 552* (UB, IBGE); Brasília National Park, cerrado, gallery forest, 19-V-1976, *Vital 6302-C, 6295* (SP); Goi s: Chapada dos Veadeiros, epiphytic, close to São Miguel creek, 23-VII-1988, *Schafer-Verwimp 9906* (SP); *idem*, Serra de Santa Brida, 1868, *Gardner s.n.*(NY).

Geographical range: Center-West region of Brazil, Goiás State, Serra de Santa Brida, Alto Paraiso, Chapada dos Veadeiros (Schäffer-Verwimp 1992). Also reported from Bolivia (Schäffer-Verwimp 1992).

Even though the calyptra was not observed, Goffinet (1997) reported it as been smooth, glabrous, cucullate and covering the entire capsule. Also Zander (1993) reported color yellow KOH reaction and lack of laminal cells covering the entire adaxial surface of the costa.

In Brazil, when collected, this plant is likely to be misidentified as the common *Hyophila involuta* (Hook.) A. Jaeger, it results mainly because both plants have ligulate or spathulathe leaves and are aperistomatate. However it can be differentiated by the lack of papillae, apex usually apiculate and presence of sclerodermis in *Hyophyla*, in *Tisserantiella* the margin is crenulate and in *Hyophyla* it is entire.

This interesting plant was first collected in Brazil by Gardner about the year 1868 and was described as *Weissia minutissima* by Mitten (1869). The second collect in 1988 (Schaffer-Verwimp 1992) it was

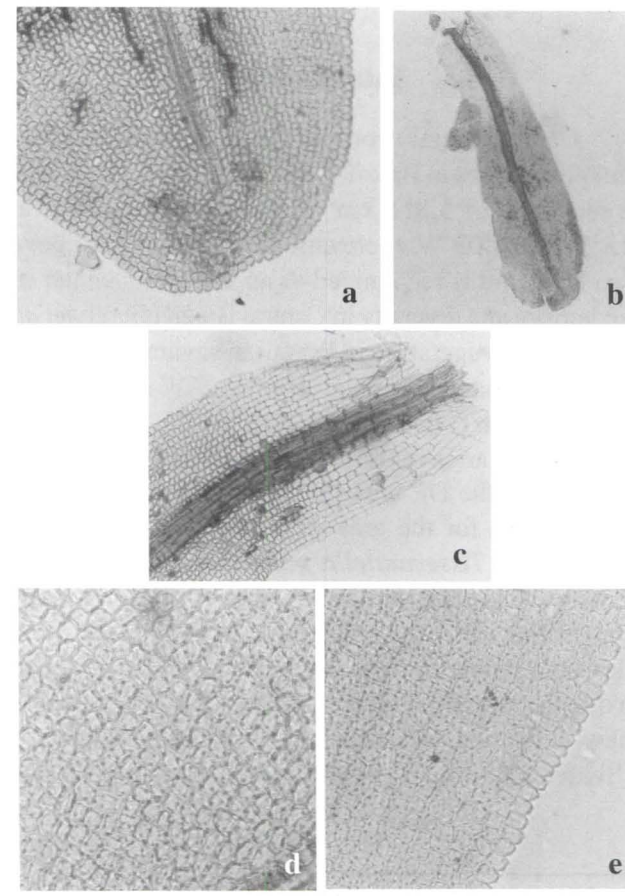

Figure 1a-e. a. Leaf apex showing the costa ending (200x). b. Leaf aspect and shape (40x). c. Base leaf cells (200x). d. Aspect of the papillae (400x). e. Papillae and leaf margin (400x).

identified as *Hyophilla minutissima* (Mitt.) A. Jaeg. by R.H. Zander. At this time the plant was only known from the type collection of Gardner. Zander (1993) transferred *H. minutissima* from the family Pottiaceae to the Rhachiteciaceae in the genus *Tisserantiella* based on presence of central stem strand, absence of sclerodermis, costa ending below the apex, yellow color KOH reaction and laminal papillae short-spiculose very small.

The lack of collections of this taxa in Brazil remains a problem because of the reduced number of collectors, specially in Central Brazil, and shows how much still is to be know about the bryology and this singular place.

Acknowledgments

To Dr. Richard Zander, from the Missouri Botanical Garden, USA; Dr. Juan Jimenez, from Facultad de Biologia de Murcia, Spain; the curators of Herbaria NY, PC, SP and UB; Prof. Dr. Fabian Borghetti, from Termobiology Lab at University of Brasília and IBGE Ecological Reserve staff at Distrito Federal.

Literature cited

Câmara, P.E.A.S. 2002. Levantamento da brioflora das Matas de Galeria da Reserva Ecológica do IBGE, RECOR. Dissertação de Mestrado, Universidade de Brasília, Brasília.

Gentry, A.H., Herrera-McBryde, O., Huber, O., Nelson, B.W. & Villamil, C.B. 1997. Regional overview. South America. *In*: V.H. Heywood & S.D. Davis (orgs.). Centres of Plant Diversity. v. 3. The Americas. WWF/ IUCN, London, pp. 269-307.

Goffinet, B. 1997. The Rhachitheciaceae: Revised circumscription and ordinal affinities. The Bryologist 100: 425-439.

Holmgren, P.K., Holmgren, N.H. & Barnett, L.C. 1990. Index Herbariorum. Part I. The Lasaria of the world. 8 ed. The New York Botanical Garden, New York.

Mitten, W. 1869. Musci Austro-Americani. Journal of the Linnean Society, Botany 12: 138.

Schäfer-Verwimp, A. 1992. New or interesting records of Brazilian Bryophytes, III. Journal of Hattori Botanical Laboratory 71: 55-68.

Sematec. 1992. Mapa Ambiental do Distrito Federal. Secretaria do Meio Ambiente Ciência e Tecnologia do Governo do Distrito Federal, Brasília.

Zander, R.H. 1993. Genera of the Pottiaceae: mosses of harsh environments. Bulletin of the Buffalo Society of Natural Sciences 32: 1-378.