

# Neotypification of *Rhipsalis triangularis* Werderm. (Cactaceae), a critically endangered species from southeastern Brazil

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## ABSTRACT

*Rhipsalis triangularis* Werderm. (Cactaceae) is neotypified on the basis of the first specimen collected almost 60 years after the publication of the original description. The species is critically endangered and the only known populations in their natural habitat are restricted to the rocky coast of Pedra Branca Massif, in the State of Rio de Janeiro, Brazil.

## RÉSUMÉ

*Neotypification de Rhipsalis triangularis Werderm. (Cactaceae), une espèce du sud-est du Brésil en danger critique d'extinction.*

*Rhipsalis triangularis* Werderm. (Cactaceae) est néotypifié sur la base du premier spécimen collecté presque 60 ans après la publication de la description originale. L'espèce est en danger critique d'extinction, et les seules populations connues dans leur habitat naturel sont limitées à la côte rocheuse du Massif de Pedra Branca, dans l'État de Rio de Janeiro, Brésil.

## KEY WORDS

Cactaceae,  
*Rhipsalis triangularis*,  
Brazil,  
conservation status,  
neotypification.

## MOTS CLÉS

Cactaceae,  
*Rhipsalis triangularis*,  
Brésil,  
statut de conservation,  
néotypification.

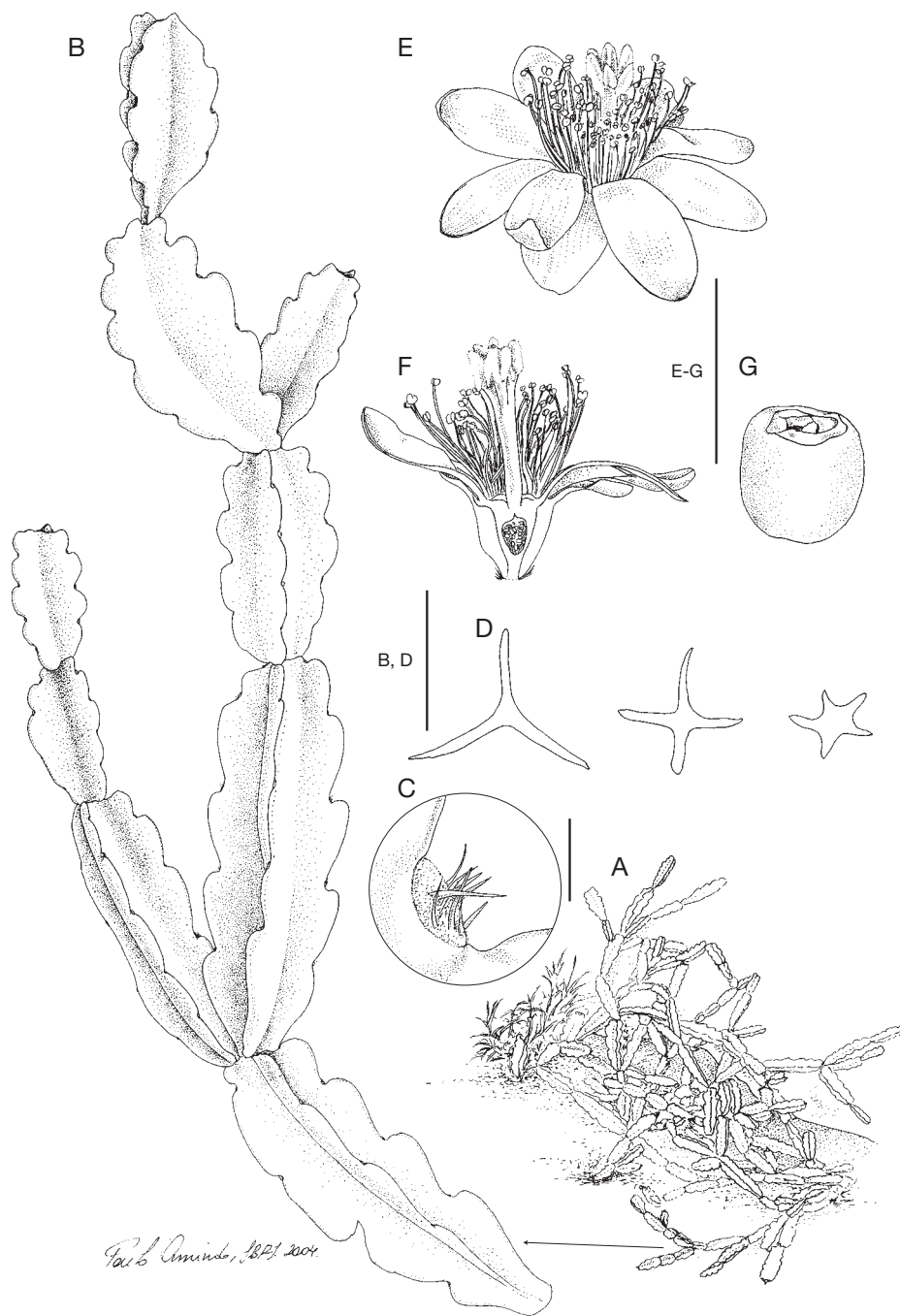


FIG. 1. — *Rhipsalis triangularis* Werderm.: **A**, habit; **B**, Stem segment with crenate margins; **C**, areole with scales and hairs; **D**, transversal sections of the stem segments 3, 4 and 5-winged; **E**, flower; **F**, longitudinal section of the flower; **G**, fruit. J.M.A. Braga & M.G. Bovini 3357. Illustration by Paulo Ormindo. Scale bars: A, not to scale; B, D, 3 cm; C, 2 mm; E-G, 1 cm.

## INTRODUCTION

*Rhipsalis triangularis* Werderm. (Cactaceae) was described based on cultivated material which blossomed on 15 October 1936 in the Berlin-Dahlem Botanical Garden. This material had previously been acquired from the Rio de Janeiro Botanical Garden, without information about its natural habitat (Werdermann 1937).

The absence of new collections and information about the natural habitat caused *Rhipsalis triangularis* to become practically unknown for many decades and consequently the taxon was ignored in reviews and floras (e.g., Castellanos 1961, 1962, 1963, 1964; Barthlott & Taylor 1995; Taylor & Zappi 2004; Calvente *et al.* 2005) as well as monographic family treatments (Anderson 2005; Hunt *et al.* 2006).

Eggl & Leuenberger (2008) recently described the loss of the Cactaceae type collection that existed in the Berlin Herbarium (B) which was totally destroyed during World War II in 1943. However they made no reference about any *Rhipsalis triangularis* type specimen deposited in the herbarium where Erich Werdermann deposited type specimens of his new taxon.

Werdermann (1937) did not mention any type specimen or illustration in the protologue of *Rhipsalis triangularis*, except the plant cultivated in the Dahlem Botanical Garden. Because no preserved type material is extant, and since the protologue did not include an illustration, we here select a neotype from amongst the first material collected almost 60 years after the description of the taxon.

## NEOTYPIFICATION

*Rhipsalis triangularis* Werderm.  
(Fig. 1)

*Feddes Repertorium Specierum Novarum Regni Vegetabilis* 42: 3 (1937).

TYPE. — **Brazil**. “Estado do Rio de Janeiro, Município do Rio de Janeiro, Maciço da Pedra Branca, Parque Municipal Natural da Prainha, Pedra dos Cabritos, Mirante Boa Vista, 340 ms.m.”, 6.VI.1996, *J.M.A. Braga & M.G. Bovini* 3357 (neo-, RB! [here designated]; isoneo-, RUSU!, R!).

OTHER MATERIAL EXAMINED. — **Brazil**. RJ, Rio de Janeiro, Pedra Branca Massif, between the Prainha Municipal

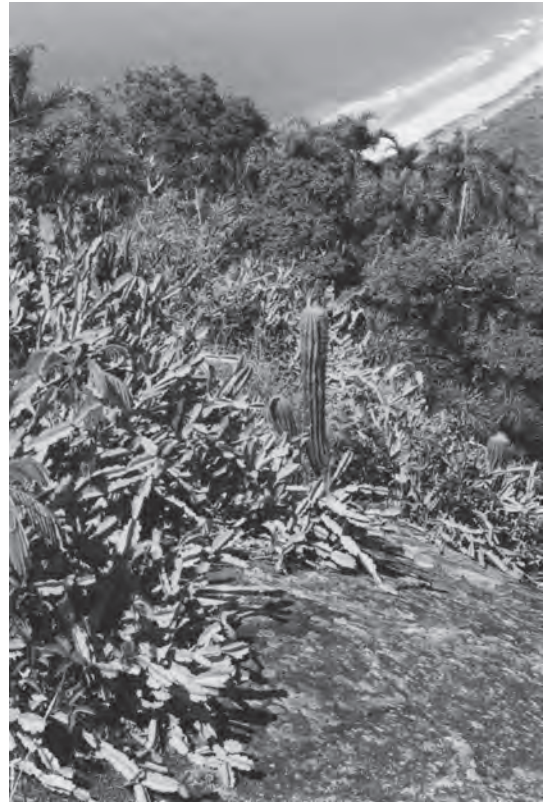


FIG. 2. — *Rhipsalis triangularis* Werderm. in its natural habitat (Pedra Branca Massif, Rio de Janeiro State, Brazil).

Natural Park and the Pedra Branca State Park, 25.V.2003, *J.M.A. Braga* 7210 (RB). — Prainha Municipal Natural Park, 17.IV.2003, *A.M. Calvente & M. Bocayuva* 37 (RUSU). — *Eod. loc.*, 15.V.2004, *A.M. Calvente & L. Versieux* 87 (RUSU). — Cruzeiro do Sul, 6.VI.2003, *A.M. Calvente et al.* 42 (RUSU). — *Eod. loc.*, 10.X.2004, *A.M. Calvente & L. Versieux* 112 (RUSU). — *Eod. loc.*, 12.XII.2003, *L.J.T. Cardoso & C.A. Zaldini* 51 (RB).

## REMARKS

*Rhipsalis triangularis* was documented for the first time in its natural habitat in 1996, during an expedition to Pedra Branca Massif, in southeastern Brazil. Searches for the species were intensified over the following years in the region, and this has resulted in new collections in the neighbouring area of the Prainha Municipal Natural Park and Pedra Branca State Park, both located on the Rio de Janeiro State coast in Brazil (Fig. 2).



FIG. 3. – Flowers and buds of *Rhipsalis triangularis* Werdern.

These recent discoveries allowed Calvente & Andreata (2007) to describe the *Rhipsalis triangularis* morphology and natural habitat in detail, but these authors did not address the question of formal typification of the name.

*Rhipsalis triangularis* is a heliophyte species which forms dense islands of vegetation on the rocky outcrops (Fig. 2) or appears rarely as epiphytes on sunlit open canopy trees. This species probably reproduces also vegetatively and the basal stem segments sometimes have the margins lacerated (Calvente & Andreata 2007). The flowers are white, abundant and visited by many different species of bees (Fig. 3). The flowers and fruits are synchronic and collected along April, May, June, October and November.

According to the IUCN (2001) criteria, *Rhipsalis triangularis* is categorized as critically endangered – CR (B2b), with a known occupation area of less than 10 km<sup>2</sup>. This species is also listed in the CITES checklist (Hunt 1992), although it is not included in the recent official lists of Brazilian species threatened with extinction (i.e. Costa 2000; IBAMA 2008).

## REFERENCES

- ANDERSON E. F. 2005. — *Das große Kakteen-Lexikon*. (translated and edited by U. Eggli). Ulmer, Stuttgart, 744 p.
- BARTHOLOTT W. & TAYLOR N. T. 1995. — Notes towards a monograph of Rhipsalideae (Cactaceae). *Bradleya* 13: 43-79.
- CALVENTE A. M. & ANDREATA R. H. P. 2007. — The Cactaceae of the Natural Municipal Park of Prainha, Rio de Janeiro, Brazil: taxonomy and conservation. *Journal of the Botanical Research Institute of Texas* 1: 529-548.
- CALVENTE A. M., FREITAS M. F. & ANDREATA R. H. P. 2005. — Listagem, distribuição geográfica e conservação das espécies de Cactaceae do estado do Rio de Janeiro. *Rodriguésia* 56: 141-162.
- CASTELLANOS A. 1961. — Flórula da Guanabara (Cactaceae). *Vellozia* 1: 5-13.
- CASTELLANOS A. 1962. — Contribuição ao conhecimento da Flórula da Guanabara. Cactaceae II. *Vellozia* 1: 74-80.
- CASTELLANOS A. 1963. — Contribuição ao conhecimento da Flórula da Guanabara. Cactaceae III. *Vellozia* 1: 103-106.
- CASTELLANOS A. 1964. — Contribuição ao conhecimento da Flórula da Guanabara. Cactaceae IV. *Vellozia* 1: 139-144.
- COSTA L. H. P. 2000. — Cactaceae, in DI MAIO F. R. & SILVA M. B. R. (eds), *Espécies ameaçadas de extinção no município do Rio de Janeiro: Flora e Fauna*. Secretaria Municipal do Meio Ambiente, Rio de Janeiro: 22.
- EGGLI U. & LEUENBERGER B. E. 2008. — Type specimens of Cactaceae names in the Berlin Herbarium (B). *Willdenowia* 38: 213-280.
- HUNT D. 1992. — *CITES Cactaceae Checklist*. Royal Botanic Gardens, Kew, 190 p.
- HUNT D., TAYLOR N. P. & CHARLES G. 2006. — *The New Cactus Lexicon. Descriptions & Illustrations of the Cactus family*. DH Books, Milbourne Port, 373 p.
- IBAMA. 2008. — *Instrução normativa nº6/2008*. (<http://www.ibama.gov.br/sisbio>, last accessed 28 July 2009).
- IUCN 2001. — *IUCN Red List Categories and Criteria*. Version 3.1. IUCN Species Survival Commission, Gland, Switzerland, Cambridge, UK, ii + 30 p.
- TAYLOR N. P. & ZAPPI D. C. 2004. — *Cacti of Eastern Brazil*. Royal Botanic Gardens, Kew, xii + 449 p.
- WERDERMANN E. 1937. — Neue Sukkulenten aus dem Botanischen Garten Berlin-Dahlem. II. *Feddes Repertorium Specierum Novarum Regni Vegetabilis* 42: 1-7.

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