

Herpetacanthus (Acanthaceae) from Amazonian region

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Workshop Information

I Workshop of Plant Biology (I Workshop de Biologia Vegetal) was held in the Bioscience Institute – UNESP, campus of Rio Claro, Brazil, during August 20 and 21, 2012. Workshop was a scientific event organized by Post-graduate students from that Institute aiming to integrate Post-graduate and Graduate students from different areas related to Plant Biology (Anatomy, Ecology, Evolution, Morphology, Physiology, and transitional areas) from different Universities. Workshop Organization offered a large number of speaking activities, scientific discussions, and extra short-courses to improve the knowledge and formation of students in Plant Biology.

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Received on August 14, 2012. Accepted on August 21, 2012. Online published on November 14, 2012.

INTRODUCTION

Herpetacanthus Nees (Acanthaceae) is a neotropical genus that comprises 18 species, distributed along three areas: Eastern Brazil, Amazon, and Central America. The single taxonomic treatment of the genus (Nees 1847) included only five eastern Brazilian species. Later, in 1901 during a field trip along Juruá-Mirim river (Juruá Miry) in Brazilian western Amazon, Ule excursion, for collect several Acanthaceae species in 1908 (Ule 1908), many of them new species described by Lindau (1904). In this publication Lindau described a new genus, *Juruasia*, a toponymic reference to the location of the sampling, with two species *J. acuminata* and *J. rotundata*. Later, Bremekamp (1965), while studying Surinamese Acanthaceae, noticed the similarity between *Juruasia* and *Herpetacanthus* descriptions and proposed the sinomization of *Juruasia* under *Herpetacanthus*.

Here we described two Amazonian *Herpetacanthus* species, data on distribution, and ecology and a key to distinguish these two species are also provided.

MATERIAL AND METHODS

Morphological studies were based on the examination of about 450 herbarium specimens from the following herbaria (those marked with an asterisk were visited by at least one of the authors specifically for this work): CESJ*, ESA*, ESAL*, FUEL*, GUA*, HBR*, HLP*, HRBC*, HUEFS*, IAC*, IAN*, INPA*, MBM*, MBML*, MG*, MO, NY, PMA, PMSP*, R*, RB*, SP*, SPF*, SPSF*, UEC*, UESC*, UNIP*, UPCB*, and VIES* 53 from images of types of the follow herbaria: BR, F, G, GZU, K, NY, PMA, US and W.

RESULTS AND DISCUSSION

Herpetacanthus Nees can be distinguished from other Neotropical Acanthaceae by the calyx with five subequal segments; corolla bilabiate with bidentate upper lip, and trilobed lower lip; four didynamous stamens, the anterior with bithecous anthers, the thecae inserted at different level on the connective, and the posterior with monothealous anthers; secundiflorous spikes or thyrsus with two adjacent rows of sterile bracts and two adjacent rows of fertile

bracts, where the sterile bracts seems to be upward displaced from their pairs and laterally displaced toward the subsequent fertile bracts, resulting in a peculiar arrangement.

Key of *Herpetacanthus* species from Amazonian region:

1 Bracts long ciliate, base mostly acute

...*H. acuminatus*

1 Bracts short ciliate, base often obtuse to round

...*H. rotundatus*

Herpetacanthus acuminatus (Lindau) Bremek. Rec. Trav. Bot. Neerl. 35: 164. 1938. *Juruasia acuminata* Lindau Bull. Herb. Boissier ser. 2, 4: 403. 1904. Type: Brazil. Amazonas: Rio Juruá, Juruá Miry, Oct 1901, E. H. G. Ule 5848 (holotype B destroyed [photo], MG!, K [photo], F [photo]).

Subshrub 0.30–0.75 m; stem terete to subquadrate, pilose to glabrescent, slightly anisophyllous. Leaves elliptic to ovate, apex obtuse to acute, base mostly obtuse, petiole 0.3–0.7(–1) cm long, blade 3.5–9 × 2–3.7 cm, petiole and blade base often pubescent, minutely ciliate. Inflorescence a terminal and one or two axillary spikes on the distal node, sometimes also on lower nodes, 1–4.5 cm long, peduncle ca. 0.4 cm long, mostly pubescent. Bracts green to vinaceous, elliptic to ovate, apex mostly acute acuminate to abruptly acuminate, base mostly acute, ca. 12 × 6 mm, pilose to glabrescent, long ciliate. Bracteoles linear-lanceolate to lanceolate, 5.5–7.5 × 0.5 mm, ciliate. Calyx segments lanceolate, 2.5 × 0.3 mm, pilose to glabrescent, ciliate. Mature corolla not seen. Ovary glabrous, except for the apex. Style ca. 8 mm, hispid at the base. Capsule ca. 1 cm, glabrous, except for minute trichomes at the apex. Seeds ca. 2.5 × 2 mm.

Distribution and Ecology: Brazil (Acre, Pará, Rondônia), Peru. In the understory of primary in inundate (igarapé) or noninundate (terra firme) forests.

Phenology: Flowering and fruiting from May to September.

Selected specimens examined: **PERU**. CUZCO: September 1997, Acevedo-Rdgz. et al. 9891 (NY); MADRE DE DIOS: 21 October 1979, Gentry et al. 27124 (US). **BRAZIL**. ACRE: 1 May 1971, Maas et al. P12701; (INPA); 12 October 1986, Campbell et al. I8920 (NY); RONDÔNIA: 26 May 1984, Frame et al. 205A (INPA); PARÁ: 11 May 1980, Rosa 3652 (MG).

Herpetacanthus rotundatus (Lindau) Bremek. Rec. Trav. Bot. Neerl. 35: 164. 1938. *Juruasia rotundata* Lindau Bull. Herb. Boissier ser. 2, 4: 403. 1904. Type: Brazil. Amazonas. Rio Juruá, Juruá Miry, Jun 1901, E. H. G. Ule 5573 (B destroyed [photo], MG!; F [photo], G [photo], K [photo]).

Local name: Shancorotiche (Peru, Cuzco, Convencion, Quempiri).

Subshrub 0.3–1(–1.3) m; stems terete to subterete, slightly anisophyllous, sparsely pilose to glabrescent. Leaves ovate to elliptic, sometimes oblong, apex acute to acuminate, base often acute, sometimes decurrent, petiole 0.3–1(–1.5) cm long, blade (2–)4–12 × (1.5–)2–4 cm, pilose to glabrescent. Inflorescence a terminal and two axillary spikes on the distal node, sometimes also on lower nodes; 1–5 cm long, peduncle ca. 0.5 cm long, pilose to glabrescent. Bracts mostly green or yellowish to purplish, elliptic to widely elliptic, apex round to obtuse, often slightly acuminate, base often obtuse to round, oblique, 9–12 × 8–9.5 mm, slightly pilose to glabrescent, sparsely ciliate. Bracteoles often linear-lanceolate, sometimes lanceolate, 3–9 × 0.5–1 mm, glabrous, inconspicuously ciliate. Calyx segments lanceolate, 3–5 × 0.5 mm, often glabrous, sometimes glabrescent, minutely sparsely ciliate to the apex. Corolla white to purplish, often with purple or brownish macula on the throat, ca. 15 mm, tube ca. 8 mm, throat ca. 4 mm, lower lip with lateral lobes, 2 × 1 mm, central lobe ca. 2.5 × 3 mm, upper lip ca. 4 × 3 mm. Longer stamens ca. 4 mm long; shorter stamens ca. 2 mm; filaments sparsely glandular-pilose. Ovary sparsely pilose at the apex. Style ca. 12 mm, sparsely pilose at the base. Capsule ca. 1 cm, glabrous. Seeds 2 × 1.5 mm.

Distribution and Ecology: In the Amazon region in Colombia, Ecuador, Peru, Brazil, and Bolivia. It grows in inundate and noninundate (terra firme) well preserved or disturbed forest, from 100 to 600 m elevation.

Phenology: Flowering from March to October, fruiting from June to December.

Selected specimens examined: **COLOMBIA**. AMAZONAS: Palacios et al. 1392 (US). **ECUADOR**. PICHINCHA: Jun 1982, Kvist & Holm-Nielsen 40211 (US); NAPO: 14 Aug 1981 Brandyge et al. 33533 (US); MORONA SANTIAGO: 15 Oct 1985 Shiki RBAE190 (NY, US). **PERU**. SAN MARTIN: 9 Mar 1970 Schunke 3850 (INPA, US), 4 Jun 1970 Schunke 4029 (US), 3 Jul 1974 Schunke 7148 (US); UCAYALI: 18 Jul 1998 Graham 620 (NY); MADRE DE DIOS: 1 Jun 1986 Funk et al. 8357 (NY, US), 29 May 1978 Encarnación 1162 (NY, US), May 1980 Barbour 5110 (US), 4 Jun 1980 Barbour 5500 (US); CUZCO: 24 Jul 1965

Ferreira 16383 (US); LORETO: 7 Sep 1990 Pipoly et al. 12513 (US), 1 Sep 1929 Killip & Smith 28944 (US), 3 Jul 1929 Killip & Smith 27470 (US); HUÁNUCO: 3 May 1967 Schunke 1910 (US); LA MERCED: 10 Jul 1923 MacBride 5324 (US). **BRAZIL.** ACRE: 12 May 1971 Maas et al. P12874 (INPA), 1 May 2001 Daly et al. 10800 (NY), 16 Sep 1968 Prance et al. 7291 (INPA, NY, US), 29 August 1960 Emygdio 1835 (R), 18 Oct 1980 Lowrie et al. 581 (INPA, US). **BOLIVIA.** SANTA CRUZ: 20 Nov 2000 Nee 51549 (NY); BENI: 28 May 1995 Guareco 488 (US), 14 Mar 1979 Gentry et al. 25713 (US).

CONCLUSIONS

Herpetacanthus acuminatus is similar to *H. rotundatus* but differs in the denser indument and long ciliate bract, *H. rotundatus* is sparsely short ciliate. Lindau (1904) differentiated these species by the bract apex, acuminate in *H. acuminatus* and rounded in *H. rotundatus*, but a unique individual of *H. rotundatus* can present bracts with rounded and shortly acuminate apex.

Acknowledgements

The authors are grateful to the curators of all consulted herbaria for providing material on loan and/or making images available for study and the Conselho Nacional de Pesquisa e Desenvolvimento (CNPq) for A.I. master scholarship.

References

- Bremekamp CEB. 1938. Notes on the Acanthaceae of Surinam. *Recueil Trav Bot Neerl* 35:129–176.
- Lindau G. 1904. Acanthaceae americanae. *Bull Herb Boissier*. 4:401–418.
- Nees von Essenbeck CG. 1847. Acanthaceae. In: De Candolle AP (ed.). *Prodomus Systematis Naturalis Regni Vegetabilis*. Treuttel & Würz: Paris. pp.46–519.
- Ule E. 1908. Die Pflanzenformationem des Amazonas-Gebietes. *Bot Jahrb Syst*. 2:141–172.