

# Cucurbitaceae, *Gurania* Cogn., for southern Amazonia, Mato Grosso, Brazil

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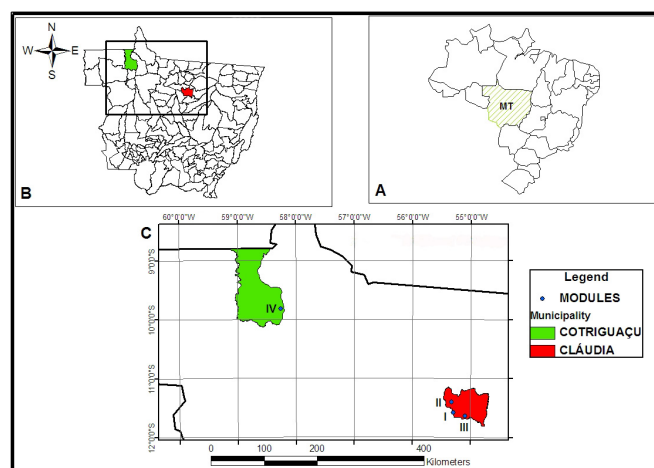
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**ABSTRACT:** We found six species of the genus *Gurania* that are described here as new records for the state of Mato Grosso, Central Brazil. The species of *Gurania* recorded here occur in the north of Mato Grosso state, Brazil in the biome recognized as “*Floresta Amazônica*”. This is an area of southern Amazonia that has been poorly inventoried. We carried out the surveys in permanent plots using the RAPELD-PPBio system and along trails giving access to the permanent plots.

Members of the Cucurbitaceae occur in tropical and subtropical regions. The family includes about 116 genera and 900 species (Kearns, 1998). In Brazil 30 genera and 200 species were noted by Souza and Lorenzi (2008), including relatively common genera, such as *Gurania*, which has the most attractive flower colors of the native genera (Souza and Lorenzi 2008). *Gurania* includes 25 species (Kearns, 1998), but difficulties regarding their identification are common; broad leaf dimorphism makes it difficult to identify sterile individuals. However, the genus *Gurania* is easily recognized by its consistent climbing habit, unique placement of the strong coiling tendrils (which are borne from the side of the node at right angles to the leaf axils), palmate venation, often palmately lobed leaves with remotely toothed margin (Gentry 1996). Most importantly, the hypanthium and sepals are red or orange, while petals are yellowish, distinguishing the genus from other genera of Cucurbitaceae (Kearns, 1998).

Collections were made from January/2010 to May/2011 in four localities of Terra Firme rainforest in northern Mato Grosso state (Figure 1). Samples of *Gurania* were collected in four permanent sampling localities, three in Claudia municipality, (locality I: 11°34'54.0" S, 55°17'15.6" W, locality II: 11°35'20.3" S, 55°17'34.7" W in Continental Farm; locality III: 11°39'09.4" S, 55°04'54.6" W in Iracema Farm), and one in Cotriguaçu municipality, (locality 4: 09°49'11.1" S, 58°15'31.4" W in São Nicolau Farm), under the auspices of the Research Program in Biodiversity (PPBio) in southern Amazonia with RAPELD methodology (see Magnusson *et al.* 2005; Costa and Magnusson 2010). Localities I, II and IV consists of 12 1-ha permanent plots, while locality III includes eight plots. There is a minimum distance of 1 km between all permanent plots (40 x 250m),

and each follows a topographical contour to minimize internal soil variation (Magnusson *et al.* 2005; Costa and Magnusson 2010). Approximately 20 km separate localities I, II and III, and 363 km separate these localities from locality IV. We report six species of Cucurbitaceae,



**FIGURE 1.** Location of PPBio research areas (C) in Southern Amazon, Mato Grosso State (B), Brazil (A) and the collection sites of the new records of *Gurania* reported here (noted by I, II, III, IV).

five of which are listed for the first time in Mato Grosso state (Figure 2).

1. *Gurania acuminata* Cogn. is native and non-endemic, occurring widely in the Amazon region: in Amazonas, Acre, and Rondônia states, as well as in the Atlantic forest in northeastern Bahia state (Klein and Lima 2010). The habit of this species is a scandent herbaceous vine, with glabrous leaves or nearly so, puberulous only on the principal veins (Kearns, 1998). **Material examined:**

Brazil, Mato Grosso: Cláudia locality II, plot 2, 24/08/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 403 (Herbarium Centro Norte-Mato-Grossense -CNMT).

2. *Gurania bignoniacea* (Poepp. & Endl.) C. Jeffrey (locality II, plot 1 with 1 individual; locality IV, plot 1, 3 individuals and plot 5, 1 individual), is a native endemic of the Amazon region, occurring in Amazonas state and all states in the Northeast of Brazil (Klein and Lima 2010). The habit of this species is a climbing herbaceous vine, hypanthium with scattered long hairs, marginal veins ending in setae, usually at least some trifoliolate (Kearns, 1998). **Material examined:** Brazil, Mato Grosso: Cláudia, locality II, plot 1, 11/09/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 404 (CNMT); Cotriguaçu, locality IV, plot 5, 28/05/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 326 (CNMT).

3. *Gurania eriantha* (Poepp. & Endl.) Cogn (locality II, plot 1, 2 individuals; locality III, plot 3, 4 individuals), is an endemic native of the Amazon region, occurring in Amazonas and Acre states. This species is a climbing herbaceous hairy plant, with lobed and cordate leaves (Vásquez, 1997). **Material examined:** Brazil, Mato Grosso: Cláudia, locality II and III, plot 1 and 3 respectively.

Locality II: 15/02/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 405 (CNMT); locality III: 15/02/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 325 (CNMT).

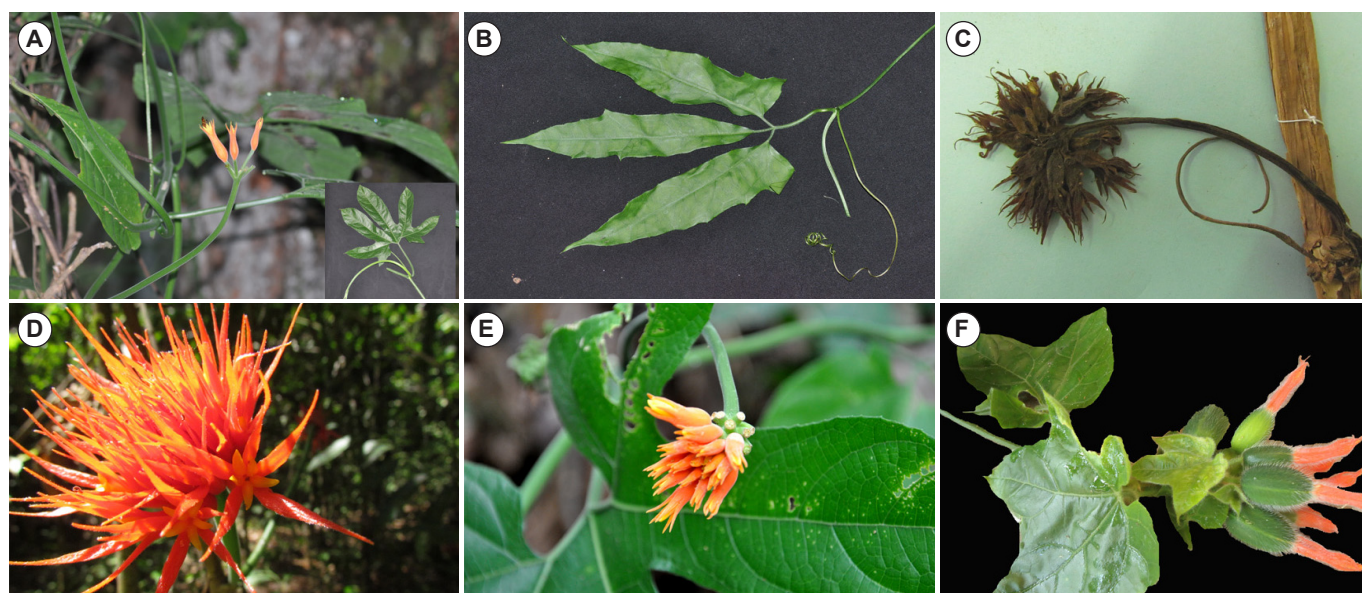
4. *Gurania huebneri* Harms (locality III, plot 3, 1 individual; locality IV, plot 5, 3 individuals and plot 6, 2 individuals) is considered native and endemic to the Amazon region, reported from Acre, Amapá, Amazonas, and Pará states (Klein and Lima 2010). The habit of this species is a climbing herbaceous vine, with sessile staminate flowers and pedicels 1 mm long, anther thecae recurved at the base, always free, appendages evident and papillose (Kearns, 1998). **Material examined:** Brazil, Mato Grosso: Cláudia, locality III, plot 3 and locality IV, plot 5 and 6. Locality III: 24/08/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 497 (CNMT); locality IV: 28/05/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 698 (CNMT).

5. *Gurania lobata* Pruski (locality II, plot 1, 4

individuals; locality III, plot 4, 2 individuals) is a native, non-endemic species of the Amazon region, found in Amazonas and Acre states (Klein and Lima, 2010). This dioecious herbaceous vine flowers throughout the year. It has pedicellate male flowers with thecae replicate at the base, urceolate - cylindrical hypanthia (Jeffrey, 1984). It has simple crispate-pubescent leaves that vary greatly in shape, from mildly trilobed to deeply palmatifid (Pruski, 1999). **Material examined:** Brazil, Mato Grosso: Cláudia, locality I and III, plot 1 and 4 respectively. Locality II: 28/05/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 657 (CNMT); locality III: 28/05/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 310 (CNMT);

6. *Gurania spinulosa* (Poepp. & Endl.) Cogn (locality II, plot 2, 1 individual) is a native non-endemic species of the Amazon region. It is found in Acre, Rondônia, and the Cerrado of Central Brazil in the Distrito Federal region (Klein and Lima 2010). The habit of this species is a climbing herbaceous vine, anther thecae not recurved at the base, free or confluent, appendages evident or not, leaves crisp-pubescent or hispid, generally densely so, especially on the veins on the lower surface (Kearns, 1998). **Material examined:** Brazil, Mato Grosso: Cláudia, locality II, plot 2, 15/02/2011, Vilela-Santos, M.C.; Barbosa, L.F. Voucher: 668 (CNMT).

These occurrences represent the first records of the species in Mato Grosso state. This demonstrates the need to increase our knowledge of the regional floristic composition, largely because southern Amazonia is being transformed by forest conversion into pasture and agriculture, as well as the activities of selective logging (Morton et al. 2006; Rodrigues et al. 2009). Regionally, the area is called the "Arc of Deforestation" and represents one of the most important areas experiencing human land-use impacts in the Amazon (Fearnside, 2005). When new records of plant species arise, even under the high rate and extent of forest loss, this suggests that this area has high biological value, and the increase of protected areas in this human-modified region is needed to improve the conservation value of local and regional biodiversity.



**FIGURE 2.** *Gurania* species reported here for Southern Amazonia, Brazil. *Gurania acuminata* leaves shiny when young, becoming more evidently pubescent adaxially when adult, lobed and with teeth in juveniles (A), *G. bignoniacea* leaves trifoliolate with tooth lamina and adaxially pubescent (B), *G. eriantha* sepals short, with ridged stem (C), *G. huebneri* sepals long, stem smooth (D), *G. lobata* leaves lobed shallowly cordate (E), *G. spinulosa* Leaves flowers and fruits with long hairs, leaves lobed (F).

**ACKNOWLEDGMENTS:** We are grateful to C. Schoten and J. Oliveira for field assistance; to Anne d'Heursel-Baldisseri for review of the English; to an anonymous reviewer for valuable comments and suggestions on the manuscript; to São Nicolau, Iracema and Continental farms for logistic support, and to the Ofício Nacional das Florestas – ONF-Brazil for financial support and permission to access the study area. M.C. Vilela-Santos, L.F. Barbosa, D.J. Rodrigues and R. Arruda thank CNPq (Proc. 569382/2008-4, Proc. 556858/2009-3, Proc. 558225/2009-8) and FAPEMAT (Proc. 40810/2009, Proc. 300729/2010, Proc. 688844/2010) for the collegiality and for financial support. R. Burnham thanks University of Michigan LSA Support for Associate Professors for financial support. Instituto Brasileiro Chico Mendes de Biodiversidade (ICMBio) provided collection permits. This is publication 15 in the NEBAM technical series.

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RECEIVED: July 2011

ACCEPTED: January 2012

PUBLISHED ONLINE: May 2012

EDITORIAL RESPONSIBILITY: Angelo Gilberto Manzatto