ACTA
AMAZONICA | http://dx.doi.org/10.1590/1809-4392202300472

BIODIVERSITY AND CONSERVATION | ORIGINAL ARTICLE

New records for different lineages of Melastomataceae in the Brazilian Amazon

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ABSTRACT

We present novelties on the occurrence of species belonging to the tribes Marcetieae, Melastomateae and Pyxidantheae (Melastomataceae) derived from revision of herbarium material and recent collections in the Brazilian Amazon. We report the rediscovery of the type species of *Comolia*, known only from the original material, the first records of *Appendicularia*, *Dicrananthera* and *Blakea* in the states of Pará, Roraima and Rondônia, respectively, and the first record of *Pterogastra* in Brazil. We provide maps with the updated geographical distribution for each species based on the revision of herbarium collections available in online databases followed by manual data cleaning. Geographic location coordinates were obtained after reviewing the identities and locality information of all herbarium specimens. Most distribution records result from recent botanical expeditions within protected areas in the Brazilian Amazon. The first records of *Pterogastra* in Brazil expand the diversity of Melastomataceae in Brazilian flora to 59 genera. These novelties reinforce the importance of botanical expeditions throughout the Brazilian Amazon to cover the extensive spatial gaps in taxonomic knowledge in the region which should be prioritized as the focus of botanical fieldwork.

KEYWORDS: little-known species, Marcetieae, Melastomateae, *Pterogastra*, Pyxidantheae, savannas

Novos registros para diferentes linhagens de Melastomataceae na Amazônia brasileira

RESUMO

Apresentamos novidades na ocorrência de espécies pertencentes às tribos Marcetieae, Melastomateae e Pyxidantheae (Melastomataceae) derivadas da revisão de material de herbário e coleções recentes na Amazônia brasileira. Relatamos a redescoberta da espécie-tipo de *Comolia*, conhecida apenas a partir do material original, os primeiros registros de *Appendicularia*, *Dicrananthera* e *Blakea* nos estados do Pará, Roraima e Rondônia, respectivamente, e o primeiro registro de *Pterogastra* no Brasil. Fornecemos mapas com a distribuição geográfica atualizada de cada espécie com base na revisão das coleções de herbários disponíveis em bases de dados online, seguido de limpeza manual dos dados. As coordenadas de localização geográfica foram obtidas após revisão das identidades e informações de localidade de todos os espécimes do herbário. A maioria dos registros de distribuição resulta de expedições botânicas recentes em áreas protegidas na Amazônia brasileira. Os primeiros registros de *Pterogastra* no Brasil ampliam a diversidade de Melastomataceae na flora brasileira para 59 gêneros. Essas novidades reforçam a importância das expedições botânicas por toda a Amazônia brasileira para cobrir as extensas lacunas espaciais do conhecimento taxonômico na região que deve ser priorizada como foco do trabalho de campo botânico.

PALAVRAS-CHAVE: espécies pouco conhecidas, Marcetieae, Melastomateae, *Pterogastra*, Pyxidantheae, savanas

CITE AS: Silva, D.N.; Braga, J.M.A.; Afonso, E.A.L.; Reinales, S.; Cantuária, P.C.; Rocha, M.J.R.; Guimarães, E.F.; Guimarães, P.J.F. 2023. New records for different lineages of Melastomataceae in the Brazilian Amazon. *Acta Amazonica* 53: 336-346.

INTRODUCTION

Melastomataceae Juss. is considered one of the 10 richest botanical families among angiosperms, comprising approximately 5,900 species (Ulloa Ulloa *et al*. 2022). This family is distributed across the entire tropical and subtropical regions, with the Neotropics having the highest diversity, containing almost two-thirds of the family's total richness (Ulloa Ulloa *et al*. 2022). Among the biomes within the Neotropical region, the Amazon rainforest harbors 687 species of Melastomataceae (Cardoso *et al*. 2017), with 523 species occurring in the Brazilian Amazon (Goldenberg *et al*. 2023).

The Amazon rainforest encompasses around 14,000 species of seed plants, and Brazil comprises most of this biodiversity with approximately 12,000 species occurring within its territory (Cardoso *et al*. 2017; BFG 2022). Concomitantly, Melastomataceae is the third most frequently collected family in this biome (Stropp *et al*. 2020), but in recent years few floristic studies have been published on melastomes throughout the Brazilian Amazon (*e.g.*, Cangani 2012; Lima *et al*. 2014; Côrrea *et al*. 2017; Rocha *et al*. 2017). This paradigm is linked to the decrease in expeditions and the sub-sampling of botanical collections within the biome (Hopkins 2007, 2019; Stropp *et al*. 2020), making it difficult to gain taxonomic knowledge on a significant spatial scale.

Notwithstanding, in the last decade important taxonomic novelties have been made concerning melastomes in the Brazilian Amazon, highlighting the discoveries of two new genera and 16 new species (see Supplementary Material, Table S1), as well as new records for the Brazilian flora (*e.g.*, Zappi *et al*. 2011; Coelho *et al*. 2015; Barbosa-Silva *et al*. 2016). During an identification work conducted on Melastomataceae specimens recently collected in the Brazilian Amazon and housed at HAMAB, INPA, RB, RON and UFACPZ herbaria (Thiers 2023 [continuously updated]) in addition to our own recent fieldwork, we detected novelties in the occurrence of species belonging to the tribes Marcetieae M.J.R.Rocha, P.J.F.Guim. & Michelang., Melastomateae Bartl. and Pyxidantheae Triana. The novelties were (i) the rediscovery of the type species of *Comolia* DC.; (ii) the first records of *Appendicularia* DC., *Dicrananthera* C.Presl. and *Blakea* P.Browne in the northern Brazilian states of Pará, Roraima and Rondônia, respectively; and (iii) the first record of *Pterogastra* Naudin in Brazil. These records represent important additions to the knowledge of the Brazilian Amazonian flora. We provide morphological descriptions (except for state records) and a revised geographic distribution for each species.

MATERIAL AND METHODS

In order to access the geographical distribution of each species, records were cataloged from herbarium databases available online followed by manual data cleaning. Initially, searches were conducted on the Reflora (http://reflora.jbrj.gov.br/reflora/herbarioVirtual/) and SpeciesLink (https://specieslink.net/) databases, using genus names to retrieve records. Subsequently, the herbaria that have their own database available online (COL, F, FLAS, K, L, MO, NY, P, U and US) and that had records retrieved in the first search mentioned above were also consulted. CAY, HAMAB, INPA, RB and UEC were visited in person. All herbarium acronyms are according to Index Herbariorum (Thiers 2023 [continuously updated]). Geographic coordinates were obtained by carefully reviewing the identities and locality information of all herbarium specimens (Supplementary Material, Table S2). Geographic coordinates were inferred from detailed locality information available on the specimen labels whenever possible, following the recommendations proposed by Magdalena *et al*. (2018). The geographic distribution maps were generated using ArcGIS 10.5 (https://www.arcgis.com/features/index.html). Prior distribution of genera and species in Brazil was based on monographs available from Flora e Funga do Brasil (Goldenberg *et al*. 2023).

Descriptions were prepared from specimens representing the more relevant new records for *Comolia* and *Pterogastra*. Beentje (2016) was adopted for general morphological terminology. Type specimens examined through online resources are cited as "! online image".

RESULTS

Rediscovery of the type species of *Comolia* (Figures 1a–e)

Comolia berberifolia (Bonpl.) DC., Prodr. 3: 115. 1828. ≡ *Rhexia berberifolia* Bonpl. in Humboldt and Bonpland, Monogr. Melast. 2: 110, t. 42. 1820. Type: Brésil [Brazil]. Habitat cum præcedente ["Habitat in Regno Brasiliensi" in *Rhexia radula*, p. 107], s.d. (fl., fr.), *A.R. Ferreira s.n.* (lectotype, designated by Silva *et al*. (2021a): P! [P00482343; negative of P at F! herbarium number 36179; photo of P at NY!]; isolectotype: BR! [BR0000008930712 fragment and draft of the original illustration]).

Description: Shrub erect, 0.7–1 m tall. **Branches** quadrangular, caniculate, brown or vinaceous when young (distal branches), grayish or brownish when mature (proximal branches); internodes 2–10 mm long, internodes and nodes with indument hirsute, trichomes eglandular or glandular, 0.3–1 mm long. **Leaves** petiolate; petiole caniculate, 0.7–2 mm long, indument hirsute on abaxial surface, trichomes glandular, 0.5–1 mm long, or glabrous; leaf blades obovate, 6–14 × 3–6 mm, flat or slightly conduplicate, membranaceous, slightly discolorous, 3-nerved, basal, central and first pair callous; base acute, apex obtuse, margin serrated, with the apex of each lobe with a trichome eglandular or glandular, 0.4–1 mm long; abaxial surface light green (when fresh) and brownish (when dry), indument hirsute, on the ribs, trichomes eglandular or glandular, 0.5–1 mm long, or glabrous, adaxial surface

foveolate, dark green (when fresh) and brown or blackish (when dry), glabrous, rare with indument hirsute, trichomes eglandular or glandular, 1–1.5 mm long. **Flowers** solitary, axillary, pedicellate; bracteoles oblanceolate or obovate, ca. 3 × 1–1.5 mm, flat, persistent, 3-nerved, indument hirsute sparse on abaxial surface, trichomes glandular, 0.5–1 mm long, petiole flat, 0.2–0.7 mm long; pedicel terete, ca. 1 mm long, glabrous; hypanthium campanulate, ca. 3 × 1.5 mm, outer surface brownish, 8-striated, indument hirsute sparse on the striae and torus, trichomes glandular, 0.5–1.2 mm long; sepals 4, linear-triangular, 2.5–3 × 1–1.2 mm, brownish, concolorous, persistent, trichomes glandular on margins and outer surface, 0.5–1 mm long, inner surface glabrous, apex acute; petals 4, obovate, 7–16 × 4–6 mm, white or purple, concolorous, glabrous; stamens dimorphic in size, glabrous, filaments filiform, erect, vinaceous, appendages ventral oblong and vinaceous, appendages dorsal vinaceous or absent, pedoconnectives curved and vinaceous, anthers oblong-linear, erect, smooth, purple, apex obtuse; antesepalous stamens 4, with filaments ca. 5 mm long, appendages ventral ca. 1 × 0.2 mm, appendages dorsal oblong, ca. 0.3 mm long, bilobate, pedoconnectives 0.6–1 mm long, anthers ca. 4 mm long; antepetalous stamens 4, with filaments 4–4.5 mm long, appendages ventral 0.3–0.4 mm long, appendages dorsal calcarate, ca. 0.1 mm long, or absent, pedoconnectives 0.2–0.3 mm long, anthers 3–4.5 mm long; ovary ovoid,

Figure 1. *Comolia berberifolia*: A – flowering branch; B – leaf abaxial surface; C – flower; D – antesepalous stamen; E – antepetalous stamen. *Pterogastra divaricata*: F – flowering branch; G – leaf abaxial surface; H – fruit. *Dicrananthera hedyotidea*: I – flowering branch; J – leaf abaxial surface; K – flower; L – antesepalous stamen; M – antepetalous stamen. Vouchers: R. Goldenberg et al. 1907, D. Nunes et al. 541 and R.C. Forzza et al. 10995. Credit: Klei R. Sousa.

1.5–2 × 1–1.2 mm, 2-locular; style filiform, 9–12 mm long, vinaceous, glabrous, straight and inclined; stigma punctiform and pinkish. **Fruits** a loculicidal capsule enclosed by the hypanthium, ovoid, 2–3 × 2–3 mm, brownish; seeds cochleate, ca. 0.95 × 0.5 mm, brownish, testa tuberculate, cells of testa conical, isodiametric; hilum basal and flattened.

New records: Brazil. Amazonas: Barcelos, matas de ambas as margens do rio Aracá perto do rio Jauari, 00°30'N, 68°30'W, 1 July 1985 (fl., fr.), *E. Sette Silva 187* (INPA!, MIRR, MO, NY!, US!); *ibidem*, N margin of Rio Aracá just above Igarapé Sauadaua, 00°13'S, 63°08'W, 80 m, 26 July 1985 (fl.), *G.T. Prance et al. 29845* (HFSL, INPA!, NY!, US!); *ibidem*, Rio Aracá, acima da comunidade de Bacuquara, 00°11'20"N, 63°10'05"W, 30–45 m, 17 April 2014 (fl., fr.), *R. Goldenberg et al. 1907* (CEPEC! 2×, INPA! 2×, MO!, NY! 2×, RB!, UPCB! 2×); *ibidem*, 17 April 2014 (fl., fr.), *R. Goldenberg et al. 1919* (NY!, RB!, UPCB!).

Notes: *Comolia* is subordinate to Marcetieae and composed of 12 herbaceous and subshrubby species distributed in Brazil, Colombia, French Guiana, Guyana, Suriname, Trinidad and Tobago, and Venezuela, mainly along coastal sandplain vegetation (*restinga*), vegetation with predominance of arboreal species on white sand (*campinarana*) and rocky outcrops (Rocha *et al*. 2018; Silva *et al*. 2021a). The genus was established by De Candolle (1828) as monotypic, based on the transfer of *Rhexia berberifolia* Bonpl. to *Comolia*. Aimé Jacques Alexandre Bonpland described *R. berberifolia* in 1820, based on a specimen collected by the Brazilian naturalist Alexandre Rodrigues Ferreira. The original material for this species has no collection date but its authenticity can be confirmed by *mihi* written after the name *Rhexia berberifolia*. The type specimen remained the only known for this species until four new specimens were identified in the context of a revision of the genus (unpubl. data).

Initially, two specimens collected in 1985 (*E. Sette Silva 187* and *G.T. Prance et al. 29845*), 165 years after the description of the species, were previously mistakenly identified as *C. microphylla* Benth. and *C. smithii* Wurdack, respectively. In 2014, another two specimens (*R. Goldenberg et al. 1907* and *1919*) were registered and identified as *C. villosa* (Aubl.) Triana. We have now determined that these four specimens belong to *C. berberifolia*. The four specimens that make up the rediscovery of the species were collected in the municipality of Barcelos, Amazonas, Brazil (Figure 2). Ferreira was in this same region in 1793 (Goeldi 1895), supporting the assumption that *C. berberifolia* was collected there and that this species is native to the surroundings of Barcelos (see Silva *et al*. 2021b).

Distribuition and habitat: *Comolia berberifolia* is considered endemic to Barcelos, Amazonas (Figure 2), occurring in *campinaranas* near the rivers, and on white sandy soil, between 30–80 m elevation.

First records of *Pterogastra* in Brazil (Figures 1f–h)

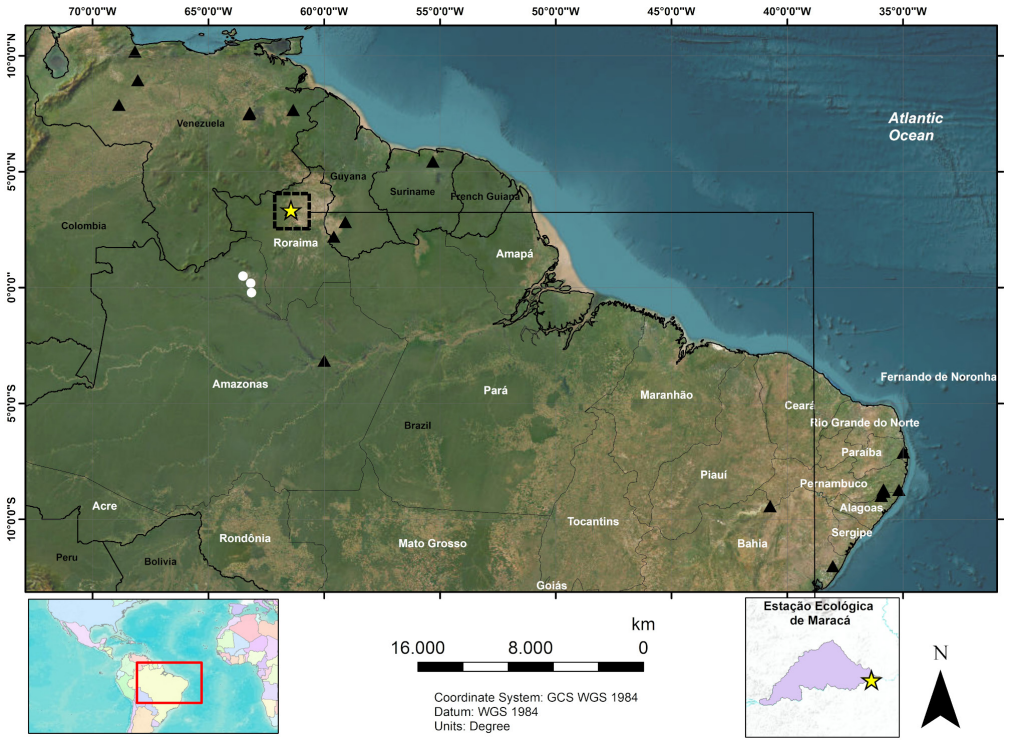

Figure 2. Geographic distribution of *Comolia berberifolia* and *Dicrananthera*. *Comolia berberifolia* = white circles; *D. hedyotidea* = black triangles + yellow star (first record of genus in Roraima state, Brazil). This figure is in color in the electronic version.

Pterogastra divaricata (Bonpl.) Naudin, Ann. Sci. Nat., Bot., sér. 3, 13: 33. 1850. ≡ *Rhexia divaricata* Bonpl. in Humboldt & Bonpland, Monogr. Melast. 2: 59, t. 22. 1812. ≡ *Osbeckia divaricata* (Bonpl.) Spreng., Syst. Veg. 2: 312. 1825. ≡ *Chaetogastra divaricata* (Bonpl.) DC., Prodr. 3: 132. 1828. Type: Venezuela [in sheet] [Colombia]. [Vichada], habitat in umbrosis, juxta flumen Orinocum; frequens ad Maypure [in protologue], s.d. (fl. fr.), *Bonpland 900* (holotype: P! [P00136456]; isotype: P! [P00136457 fragment]).

Heterotypic synonyms: *Pterogastra major* Triana and *P. major* var. *angustifolia* Cogn.

Description: Subshrub erect, ca. 0.8 m tall. **Branches** quadrangular, greenish; internodes 3.7–6.6 cm long, internodes and nodes with indument strigose, trichomes eglandular, 0.8–3 mm long. **Leaves** petiolate; petiole caniculate, (1.5–)2–5 mm long, indument strigose on both surfaces, trichomes eglandular, 0.5–1 mm long; leaf blades lanceolate, (1.6–)3.8–7.5 × (0.7–)1–2.2 cm, flat, chartaceous, concolorous, light green, 3-nerved + 2 tenuous, basal; base obtuse, apex acute, margin entire and with trichomes eglandular, 1.2–1.5 mm long; abaxial surface with indument strigose, dense on the veins and sparse between them, trichomes eglandular, 1–1.3 mm long, adaxial surface with indument strigose and sparse, trichomes eglandular, 0.7–1.2 mm long. **Flowers** in dichotomous cyme, terminal, pedicellate; peduncle terete, 8.6–10.7 cm long, rachis terete, 1–3 cm long; bracteoles lanceolate, ca. 2 × 1 mm, flat, caducous, 3-nerved, indument strigose on abaxial surface, trichomes eglandular, ca. 0.3 mm long, petiole caniculate, 0.3–0.5 mm long; pedicel terete, ca. 2 mm long, glabrous; hypanthium obovoid, ca. 12 × 7 mm, outer surface brownish, 5-striated, glabrous; emergences spinose on the striae, 1.5–2 mm long; sepals 5, triangular-attenuate, ca. 5 × 3 mm, brownish, concolorous, persistent, margin with trichomes eglandular, 0.3–0.5 mm long, inner surface glabrous, apex acute; petals 5, obovate, 4–4.2 × 2–2.1 mm, pinkish, margin ciliate with tricomes glandular ca. 0.2 mm, apex with a trichome glandular, ca. 1 mm long; stamens dimorphic in size and morphology, glabrous, filaments filiform, appendages ventral bilobate, oblong and yellow, pedoconnectives curved, anthers subulate, curved and corrugate; antesepalous stamens 4, with filaments ca. 6.5 mm long, lower half pink and upper half white, appendages ca. 0.5 mm long, pedoconnectives ca. 1.5 mm long, pink, anthers ca. 8.5 mm long, pink; antepetalous stamens 4, with filaments ca. 5.5 mm long, appendages ca. 0.3 mm long, pedoconnectives ca. 0.5 mm long, yellow, anthers ca. 4.5 mm long, cream; ovary ovoid, ca. 5 × 2.5 mm, 5-locular, apex with trichomes eglandular and setose, 1–1.5 mm long; style filiform, ca. 15 mm long, pink with apex yellowish, glabrous and straight; stigma punctiform and white. **Fruits** a loculicidal capsule enclosed by the gray hypanthium, ovoid, ca. 6.4 × 5.2 mm, brownish; seeds cochleate, 0.5–0.7 × 0.2–0.3 mm, brownish, testa tuberculate, cells of testa conical, isodiametric; hilum basal and flattened.

New records: Brazil. Amazonas: Canutama, Joana D'Arc, campinas a ca 20 km de Joana D'arc estrada de barro, 8°39'27"S, 64°21'39"W, 95 m, 23 April 2007 (fl., fr.), *F.A. Carvalho et al. 1320* (INPA!); *ibidem*, PARNA Mapinguari, zona do Parque com acesso por uma propriedade ao lado da antiga entrada do Parque, 8°39'10"S, 64°21'2.9"W, 87 m, 23 November 2021 (fr.), *D. Nunes et al. 541* (RB!).

Notes: *Pterogastra* is subordinate to Melastomateae composed of three herbaceous, subshrubby and shrubby taxa: *P. divaricata* var. *divaricata*, *P. divaricata* var. *glabra* (Gleason) S.S.Renner and *P. minor* Naudin (Renner 1994). The genus was previously known from Colombia, Venezuela, Guyana, Ecuador, Peru, and Bolivia, occurring in flooded lowlands in savannas on sandy and clayey soils, palm swamps (*morichal*), on granite rock outcrops (*lajas*), and along roadsides (Renner 1994, 2014). The genus is here recorded for the first time in Brazil, with the occurrence of *P. divaricata* var. *divaricata* in vegetation with a predominance of herbaceous and shrubby species on white sand (*campina*) within Mapinguari National Park (*Parque Nacional Mapinguari*), in Amazonas state (Figure 3). Before this record, 58 genera had been registered in Brazilian territory (Goldenberg *et al.* 2023; quantity modified considering the current expanded delimitation in *Miconia* Ruiz & Pav. and *Microlicia* D.Don). The record described in here expands the number of genera in Brazil to 59, including *Pterogastra*.

Distribuition and habitat: *Pterogastra divaricata* var. *divaricata* occurs in Colombia, Venezuela, Guyana, Ecuador, Peru, Bolivia, and Brazil (Figure 3), between 53–2750 m elevation. In Brazil, this species was found in a floodplain *campina* on white sand soil.

First record of *Dicrananthera* in Roraima state (Figures 1i–m)

Dicrananthera hedyotidea C.Presl., Symb. Bot. 1: 76, t. 50. 1832. ≡ *Acisanthera hedyotoidea* (C.Presl) Triana, Trans. Linn. Soc. London 28: 33. 1871 [1872]. Type: habitat in Brasilia [Brazil]. ad Bahiam [Bahia], s.d. (fl., fr.), *Lhotsky s.n.* (lectotype, designated by Wurdack (1993): PRC! online image [herbarium number 450611]; isolectotype: G! online image [G00318591]).

Heterotypic synonyms: *Dicrananthera salzmannii* Naudin [≡ *Acisanthera salzmannii* (Naudin) Cogn.] and *A. boissieriana* Cogn.

New record: Brazil. Roraima: Amajari, Estação Ecológica de Maracá, Sede da Estação Ecológica, 03°21'25"N, 61°25'45"W, 94 m, 9 October 2019 (fl., fr.), *R.C. Forzza et al. 10995* (RB!).

Notes: *Dicrananthera* is an herbaceous and monotypic genus subordinate to Marcetieae and distributed in Venezuela,

Figure 3. Geographic distribution of *Pterogastra*. *Pterogastra divaricata* var. *glabra* = white circles; *P. divaricata* var. *divaricata* = black circles + yellow star (first record of genus in Brazil); *P. minor* = white triangles. This figure is in color in the electronic version.

Guyana, Suriname, and Brazil, mainly in palm swamp (*morichal*), moist lowland on white sand soil and forest edges (Wurdack 1973, 1993; Rocha *et al*. 2018). The genus is rarely recorded in herbaria and has a sparse (Wurdack 1973) and disjunct distribution (Figure 2). In Brazil, there are records in the states of Amazonas, Pará, Paraíba, Pernambuco, and Bahia (Wurdack 1973; Guimarães and Rocha 2023).

During an expedition in 2019, the genus was collected for the first time in Roraima, in a flooded environment in Maracá Ecological Station (*Estação Ecológica de Maracá*). Thus, we confirm the occurrence of *Dicrananthera* in Amazonas, Roraima, Paraíba, Pernambuco, Alagoas, and Bahia (Figure 2). The only record previously cataloged from Pará (*R. Spruce 228*) in the revised herbaria collections only states "near Pará" as location and is thus not conclusive regarding the occurrence of *Dicrananthera* within Pará.

Distribuition and habitat: *Dicrananthera hedyotidea* currently exhibits a disjunct distribution, occurring in both the Amazon Basin and Brazilian Atlantic Forest (Figure 2), between 16–633 m elevation. Throughout its distribution, *D. hedyotidea* maintains its habitat specificity to floodplains on white sand soil.

First record of *Appendicularia* in Pará state (Figures 4a–e)

Appendicularia thymifolia (Bonpl.) DC., Prodr. 3: 114. 1828. ≡ *Rhexia thymifolia* Bonpl., Monogr. Melast. 2: 133, pl. 50. 1821. Type: French Guiana. Cayenne, s.d. (fl., fr.), *F.M.R. Leprieur s.n.* (lectotype, first-step designated by Wurdack (1993), second-step designated by Silva *et al*. (2020): P! [P02274348]; isolectotypes: P! [P02274349], RB! [RB00235739]).

New record: Brazil. Pará: Almeirim, ESEC do Jari, Monte Dourado, na Base de Campo da ESEC, 0°27'25"S, 52°49'38"W, 457 m, 14 May 2022 (fl.), *D. Nunes et al. 808* (BHCB!, HAMAB, HUFU!, MG, RB!, UPCB!).

Notes: *Appendicularia* is subordinate to Marcetieae and has three herbaceous and subshrubby species distributed in the northeast region of the Amazon Basin, mainly in lowland savannas and rocky open areas in Venezuela, Guyana, Suriname, French Guiana, and Brazil (Rocha *et al*. 2018; Silva *et al*. 2020). *Appendicularia pullei* (Gleason) M.J.R.Rocha & P.J.F.Guim. and *A. thymifolia* are the species that occur in Brazil and had been cataloged within Brazilian territory only in the state of Amapá. Recently we recorded the genus for the first time in Pará from the occurrence of *A. thymifolia* in vegetation on ferrugineous substrate (*canga*) within Jari Ecological Station (*Estação Ecológica do Jari*) (Figure 5).

Distribuition and habitat: *Appendicularia thymifolia* occurs in Brazil, French Guiana, Guyana, and Suriname (Figure 5), mainly in Amazonian savannas with white sand soil, predominantly with herbaceous vegetation and sometimes floodplains, but also on rocky outcrops, between 5–800 m elevation. In Brazil, this species also has been recorded in patches of savanna and *canga*, but can also be found in peri-urban environments and along roadsides, between 15–457 m elevation.

First records of *Blakea* in Rondônia state (Figures 4f–h)

Blakea parasitica (Aubl.) D.Don, Mem. Wern. Nat. Hist. Soc. 4: 327. 1823. ≡ *Topobea parasitica* Aubl., Hist. Pl. Guiane 1: 476, t. 189. 1775. Type: [French Guiana]. ad ripas fluvii Sinemari, & amnis Galibienfis, s.d. (fl.), *Aublet s.n.* (holotype: BM! online image [BM001008314]).

Heterotypic synonyms: *Topobea regeliana* Cogn., *T. cuspidata* Gleason, *T. floribunda* Gleason, *T. pubescens* Gleason, *T. praecox* Gleason, *T. membranacea* Wurdack, and *T. rhodantha* L.Uribe.

New records: Brazil. Rondônia, Campo Novo de Rondônia, Parque Pacaás Novos, beira do rio Candeias, 10°49'06"S, 63°37'35"W, 476 m, 4 November 2018 (fl.), *K.R.C. Paixão et al. 207* (RB!, RON!); Campo Novo [de Rondônia], Parque Nacional Pacaás Novos, Pico do Tracoá, 18°84'03"S, 63°62'98"W [revised coordinate: 10°50'25.1"S, 63°37'47.3"W], 905 m, 5 November 2018 (fl.), *K.S. Gonçalves et al. 647* (RB!, RON!).

Notes: *Blakea* is subordinate to Pyxidantheae and composed of 192 species (Ulloa Ulloa *et al*. 2022). These predominantly hemiepiphytic species are distributed from Mexico to Bolivia, Venezuela, Guyana, Suriname, French Guiana, Brazil,

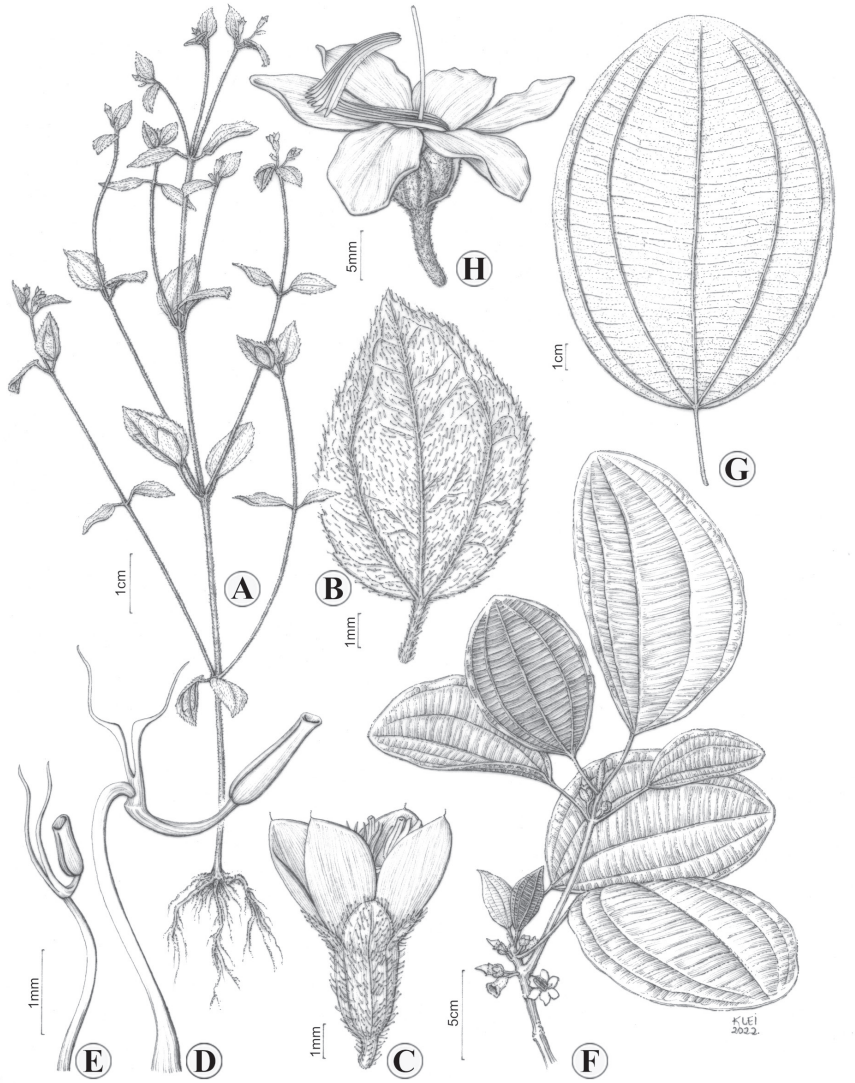

Figure 4. *Appendicularia thymifolia*: A – habit; B – leaf abaxial surface; C – flower; D – antesepalous stamen; E – antepetalous stamen. *Blakea parasitica*: F – flowering branch; G – leaf abaxial surface; H – flower. Vouchers: D. Nunes et al. 808 and K.R.C. Paixão et al. 207. Credit: Klei R. Sousa.

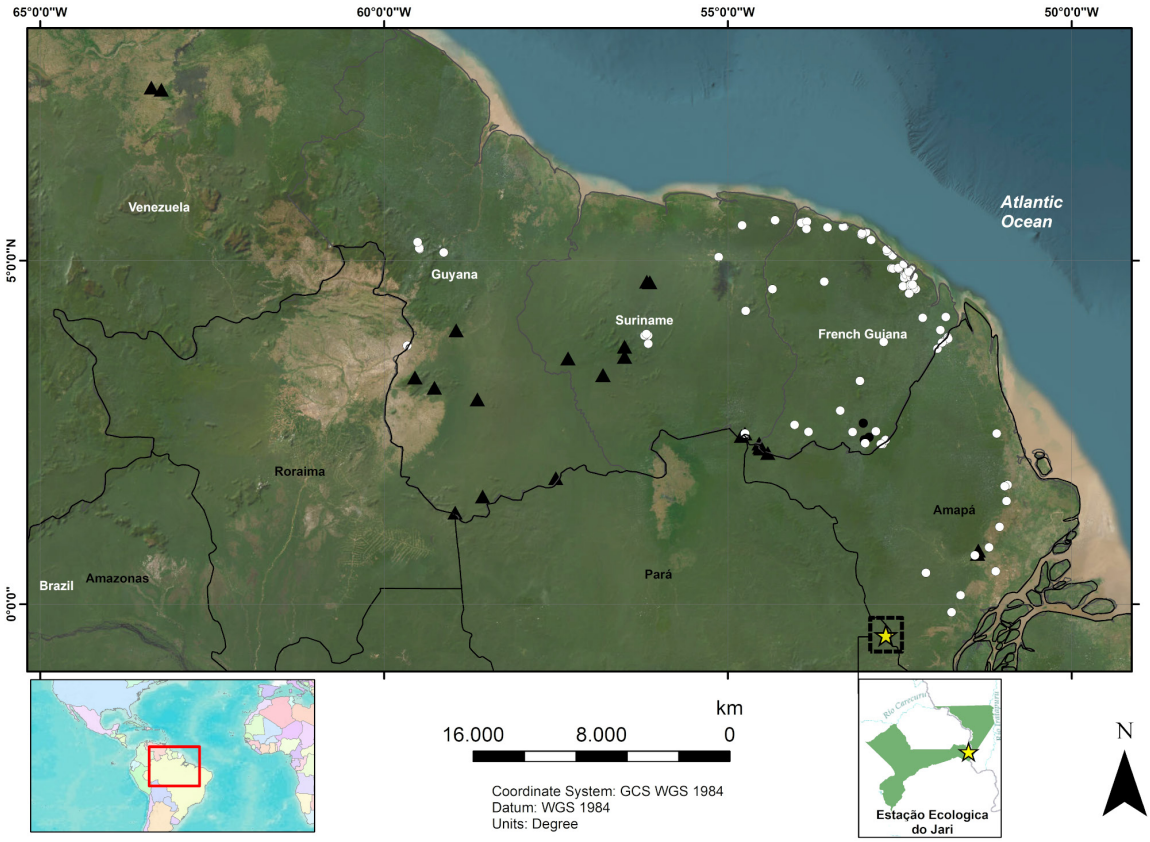

Figure 5. Geographic distribution of *Appendicularia*. *Appendicularia pullei* = black triangles; *A. subglabra* = black circles; *A. thymifolia* = white circles + yellow star (first record of genus in Pará state, Brazil). This figure is in color in the electronic version.

Jamaica, and the Lesser Antilles, mainly in cloud forests (*matas nebulares* or *bosques de neblinas*), floodplain forests (*várzea*) and upland forests (*terra firme* forest) (Almeda 2009; Penneys and Almeda 2022). In Brazil, six species have been cataloged, occurring throughout the states of Amapá, Amazonas and Pará (Brito 2023), and further south in Mato Grosso (Zappi *et al*. 2011). After recent expeditions into the interior of Rondônia, this genus was recorded for the first time in this state based on collections of *B. parasitica* in open rainforests within Pacaás National Park (*Parque Nacional de Pacaás Novos*) (Figure 6).

Distribuition and habitat: *Blakea parasitica* occurs in Costa Rica, Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana, and Brazil (Figure 6). It is predominantly found in rainforests, particularly in cloud or submontane strata, preferably in humid environments inside forests, but it can also be found at forest edges, between 5–1700 m elevation. In Brazil, this species has also been found in open rainforests, both in floodplain (*várzea*) and *terra firme* forests, between 105–905 m elevation.

DISCUSSION

The new distribution records presented in here are the result of recent botanical expeditions, mostly within protected areas throughout the Brazilian Amazon. The Amazon is one of the least sampled regions in the Neotropics (Narváez-Gómez *et al.* 2021) and the continuous report of new species records exemplifies the need to increase the spatial coverage of botanical collections in order to improve our knowledge of the Brazilian Amazonian flora (Hopkins 2007, 2019; Stropp *et al.* 2020). The first records of *Appendicularia* in Pará, *Blakea* in Rondônia and *Dicrananthera* in Roraima also reinforce the role of conservation units within the Amazon region as custodians of diversity that must be cataloged (Stropp *et al.* 2020).

The rediscovery of *Comolia berberifolia*, the type species of the genus, is a gain in the alpha taxonomy knowledge of the group, such as the morphological delimitation of a little-known species (Molina and Marcot 2007). This species was being approximated to the *C. villosa* (Aubl.) Triana complex, but after our finding the differences between both are confirmed (see Silva *et al*. 2021a).

The first records of *Pterogastra* in Brazil expand the diversity of Melastomataceae in the Brazilian flora to 59 genera and highlights the unexplored diversity of the Madeira-Purus interfluve region. This region is poorly explored (Ximenes *et al*. 2021), few taxonomic novelties have been cataloged (*e.g.*, Viana *et al*. 2010; Mezzonato-Pires *et al*. 2023), and it has been considered one of the seven priority areas for new sampling

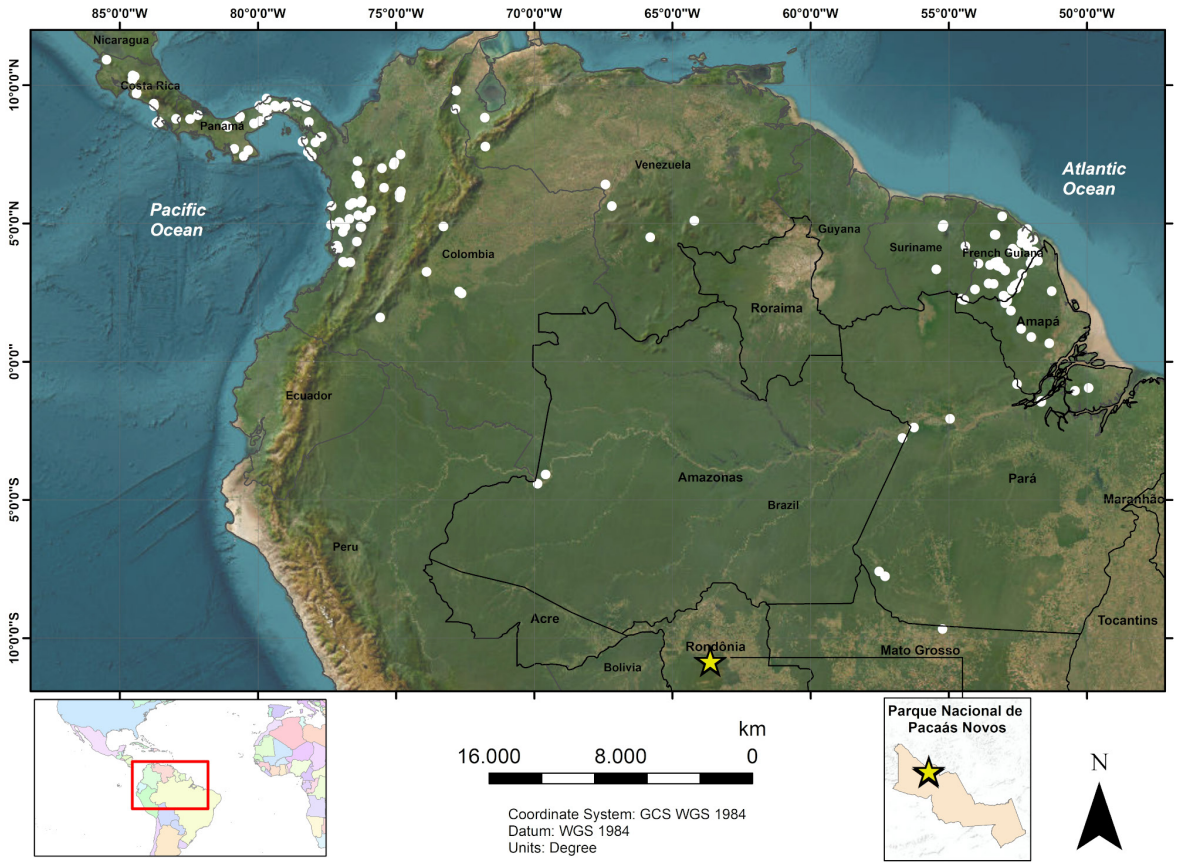

Figure 6. Geographic distribution of *Blakea parasitica*. Yellow star = first record of genus in Rondônia state, Brazil. This figure is in color in the electronic version.

efforts (Narváez-Gómez *et al.* 2021), as it is also impacted by increasing deforestation (Stropp *et al.* 2020).

CONCLUSIONS

All the records documented here confirm the importance of the recent efforts of botanical expeditions throughout the Brazilian Amazon, especially those carried out in protected areas. These records underline the importance of the identification work carried out in herbaria, which allows a more precise knowledge of the occurrence of the studied species in the Brazilian Amazon, as well as in other regions. Concerning taxonomy, these records contribute to updating the data on morphology and geographic distribution, thus improving to our understanding of the Melastomataceae in the Brazilian Amazon. The increased richness of Melastomataceae cataloged in the mentioned states and Brazilian territory highlights the existing gap in taxonomic knowledge of the studied genera and regions, which should be prioritized as a focus of fieldwork by botanists, as has been emphasized in the literature.

ACKNOWLEDGMENTS

We are grateful to Débora R. dos S. Arraes, Géssica E. A. Fernandes, Kauê N. L. Dias, Pedro L. Viana and Rafael F. Neto for their company during fieldwork; Universidade do Estado do Amapá and Laboratório de Botânica e Ecologia Vegetal (LABEV) at Universidade Federal do Acre for the support, especially Marcos Silveira and Mayk H. de Oliveira; HAMAB, INPA, RON and UFACPZ herbaria staff for reception; MO, PEL and SP staff for sending us photos of specimens; Ingrid M. Silva and Rafaela C. Forzza for bringing us some of the records documented here; ICMBio/SISBIO for providing collection licenses (76433-3 and 81646-1) and reception in the conservation units; Klei R. Sousa for the beautiful illustrations; Rafael da Silva Ribeiro (Núcleo de Computação Científica e Geoprocessamento do Jardim Botânico do Rio de Janeiro) for producing the maps; two anonymous reviewers, and editors for their comments and suggestions. DNS is also grateful to Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES, process # 88887.602283/2021-00 – Finance Code 001) and Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq, process # 141121/2022-0) for the doctoral fellowship granted, and Programa de Apoio à Pós-Graduação (PROAP, process # 0000000000017692728) and International Association for Plant Taxonomy (IAPT) for partially funding the fieldwork. EALA is grateful to CNPq (process # 142549/2020-7) for the doctoral fellowship granted and Ned Jaquith Foundation for funding the fieldwork.

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RECEIVED: 18/02/2023
ACCEPTED: 26/08/2023
ASSOCIATE EDITOR: Ricarda Riina

DATA AVAILABILITY

The data that support the findings of this study were published in this article and in its attached supplementary material section.

SUPPLEMENTARY MATERIAL (only available in the electronic version)

Silva *et al*. New records for different lineages of Melastomataceae in the Brazilian Amazon

Table S1. Species and genera of Melastomataceae described for the Brazilian Amazon in the last decade. * = new genus.

Species	Distribution	Reference
Adelobotrys latifolius Schulman	Brazil, Colombia, Peru	Schulman and Ruokolainen (2015)
Adelobotrys microcarpus Schulman	Brazil, Peru	Schulman and Ruokolainen (2015)
Brasilianthus carajensis Almeda & Michelang.*	Brazil	Almeda *et al*. (2016)
Graffenrieda goldenbergii L.F.Lima, Baumgratz, NicLugh. & J.U.Santos	Brazil	Lima *et al*. (2016)
Graffenrieda laevicarpa Michelang. & R.Goldenb.	Brazil, Venezuela	Michelangeli and Goldenberg (2014)
Graffenrieda maturaca L.F.Lima, Baumgratz, NicLugh. & J.U.Santos	Brazil	Lima *et al*. (2016)
Macrocentrum aurimontium R.Goldenb. & Michelang.	Brazil	Goldenberg and Michelangeli (2021)
Miconia amapaënsis R.Goldenb. & Hinoshita	Brazil, French Guiana	Goldenberg and Hinoshita (2017)
Miconia forzzae R.Goldenb. & Hinoshita	Brazil	Goldenberg and Hinoshita (2017)
Miconia macuxi Meirelles, Caddah & R.Goldenb.	Brazil	Meirelles *et al*. (2015)
Miconia papillosperma R.Goldenb. & Michelang.	Brazil	Michelangeli and Goldenberg (2016)
Miconia renatogoldenbergii Meirelles & Bacci	Brazil	Meirelles and Bacci (2017)
Miconia rondoniensis Meirelles & R.Goldenb.	Brazil	Meirelles *et al*. (2017)
Miconia suberosa Meirelles & R.Goldenb.	Brazil	Meirelles and Goldenberg (2014)
Miconia waimiri-atroari Meirelles & Caddah	Brazil	Meirelles *et al*. (2021)
Pleroma carajasense K.Rocha, R.Goldenb. & F.S.Mey.	Brazil	Rocha *et al*. (2017)
Rostranthera tetraptera (Cogn.) M.J.R.Rocha & P.J.F.Guim.*	Brazil, Suriname	Rocha *et al*. (2018)

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Meirelles, J; Bacci, L.F. 2017. *Miconia renatogoldenbergii* (Miconieae, Melastomataceae), a new species from savanna enclaves in southern Amazonia, Brazil. *Phytotaxa* 298: 187–193.

Meirelles, J.; Goldenberg, R. 2014. A new species of *Miconia* (Miconieae, Melastomataceae) from the Brazilian Amazon. *Phytotaxa* 173: 278–284.

Meirelles, J.; Caddah, M.K.; Goldenberg, R. 2015. *Miconia macuxi* (Miconieae, Melastomataceae): a new species from the Amazonian white sand vegetation. *Phytotaxa* 220: 54–60.

Meirelles, J.; Boelter, C.R.; Goldenberg, R. 2017. *Miconia rondoniensis* (Melastomataceae), a new species from the Southern Amazon of Brazil. *Brittonia* 69: 470–476.

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Table S2. Collections used in the geographic distribution maps of the species of Melastomataceae treated in this study. Datum: WGS-84.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
Appendicularia pullei				
D. Nunes et al. 865	CAS, HAMAB, HUFU, INPA, MG, NY, RB, UPCB, US	Brazil	0.779444, -51.356111	
D. Nunes et al. 867	BHCB, FCAB, FLAS, HAMAB, RB	Brazil	0.779444, -51.356111	
D. Nunes et al. 878	HAMAB, IAN, NY, RB	Brazil	0.780278, -51.356111	
D. Nunes et al. 880	HAMAB, HUFU, MG, MO, NY, RB, UPCB	Brazil	0.780278, -51.356111	
D. Nunes et al. 881	CAS, HAMAB, INPA, RB	Brazil	0.780278, -51.356111	
D. Nunes et al. 882	FLAS, HAMAB, K, P, RB	Brazil	0.780278, -51.356389	
D. Nunes et al. 883	BHCB, CEN, HAMAB, R, RB, US	Brazil	0.780278, -51.356389	
J.M. Pires et al. 50966	IAN	Brazil	0.733333, -51.366667	
C. Sarthou 873	CAY, P	Brazil	2.283333, -54.533333	
C. Sarthou 920	CAY, P	Brazil	2.283333, -54.533333	
C. Sarthou 842	CAY, P	French Guiana	2.266667, -54.516667	
C. Sarthou 881	P	French Guiana	2.266667, -54.516667	
J.J. de Granville 11738	CAY, NY, P, US	French Guiana	2.200000, -54.416667	
J.J. de Granville 1330	CAY, P	French Guiana		2.336667, -54.543167
B. Hoffman 404	CAY, F, INPA, NY, US	Guyana	3.150000, -59.266667	
B. Hoffman & R. Foster 3535	F, NY, US	Guyana	3.300000, -59.550000	
H.D. Clark et al. 7312	CAS, FLAS, NY, US	Guyana	1.332778, -58.965000	
H.D. Clarke 3731	CAS, FLAS, US	Guyana	2.980278, -58.640833	
H.D. Clarke 3373	FLAS, NY	Guyana	1.567222, -58.564722	
P.J.M. Maas et al. 7473	CAY, NY, US	Guyana	3.983333, -58.950000	
s.c. 7309	NY	Guyana		1.833309, -57.501126
A. Gröger et al. 1340	U	Suriname	4.683333, -56.133333	
B. Maguire et al. 54196	F, IAN, NY, P, US	Suriname	3.600000, -56.500000	
B. Maguire et al. 54050	F, NY, P, US	Suriname	3.333333, -56.816667	
G. Stahel 576	U	Suriname		3.748360, -56.500830
H.S. Irwin et al. 55318	NY, US	Suriname	3.600000, -56.500000	
P. Acevedo-Rodriguez et al. 5800	CAY, NY, US	Suriname	2.450000, -54.800000	
J.P. Schulz 10094	US	Suriname		3.576107, -57.321803
J.P. Schulz & J. Donselaar 10543	US	Suriname		4.692162, -56.178040
J.P. Schulz 10032	US	Suriname		3.332056, -56.812439
J.J. de Granville et al. 13741	CAY, P, U, US	Suriname	4.683333, -56.133333	
J.J. de Granville et al. 13735	CAY, P, US	Suriname	4.683333, -56.133333	
J.J. de Granville et al. 12180	CAY, MO, NY, P	Suriname	2.4833300, -54.7500000	
B. Maguire 32697	NY, US	Venezuela		7.516761, -63.383290
B. Maguire et al. 35855	NY, US	Venezuela		7.484133, -63.238387
Appendicularia subglabra				
J.J. de Granville 2632	CAY, IAN, NY, P, U , US	French Guiana		2.391410, -53.013879
J.J. de Granville 7022	CAY, P, US	French Guiana		2.635103, -53.027751
J.J. de Granville et al. 15293	CAY, NY, P, US	French Guiana	2.383333, -53.005556	
Appendicularia thymifolia				
D. Nunes et al. 754	HAMAB, NY, RB	Brazil	0.131111, -51.615000	
D. Nunes et al. 760	BHCB, FLAS, HAMAB, MG, RB	Brazil	-0.115556, -51.746111	
D. Nunes et al. 892	HUFU, HAMAB, IAN, NY, RB	Brazil	0.710278, -51.409167	
D. Nunes et al. 808	BHCB, HAMAB, HUFU, MG, RB, UPCB	Brazil	-0.456944, -52.827222	
J.M. Pires & P.B. Cavalcante 52239	F, IAN, K, NY, S, U, US	Brazil		3.839898, -51.837878
B. Maguire et al. 47123	IAN, NY, US	Brazil	3.883333, -51.800000	
A. Lourteig 1784	P	Brazil		0.478048, -51.103956
M.A.C. Santos & M.H.A. Martins 219	HAMAB	Brazil		1.126882, -51.046646
A.E.S. Rocha 1101	HAMAB	Brazil		0.828254, -51.199596
S.V. Costa Neto 4067	HAMAB	Brazil	1.736708, -50.931942	
S.V. Costa Neto 3854	HAMAB	Brazil	0.456753, -52.119819	
S.V. Costa Neto 3819	HAMAB	Brazil	0.456753, -52.119819	

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
S.V. Costa Neto 3737	HAMAB	Brazil	1.716778, -50.973389	
S.V. Costa Neto 3715	HAMAB	Brazil	1.716778, -50.973389	
S.V. Costa Neto 3127	HAMAB	Brazil	2.483250, -51.089917	
S.V. Costa Neto 3111	HAMAB	Brazil	2.483250, -51.089917	
S.V. Costa Neto 3375	HAMAB	Brazil	1.501611, -50.946389	
S.V. Costa Neto 4424	HAMAB	Brazil	2.483333, -51.090000	
G.A. Black 8187	IAN	Brazil		3.862579, -51.794849
M. Hoff & G. Cremers 5592	B, CAY, P, RB, US	French Guiana	5.483333, -53.550000	
C.V. Martin & M. Sanip 441	CAY, NY	French Guiana	4.888350, -52.622200	
C. Martin & M. Sanip 211	CAY	French Guiana	4.883333, -52.600000	
S.A. Mori et al. 25271	CAY, NY, P	French Guiana	4.166667, -52.166667	
S.A. Mori & E.F. Hecklau 25242	CAY, NY	French Guiana		4.793330, -52.406670
R.S. Cowan 38865	NY	French Guiana		5.562846, -53.906158
G. Cremers 9391	CAS, CAY, NY, P, U	French Guiana		4.863910, -52.332162
J.J. de Granville et al. 15299	CAY, MO, NY, P, U	French Guiana	2.383333, -53.005556	
G. Cremers 10102	CAY, NY, P, US	French Guiana	4.583333, -52.333333	
J.F. Villiers & C. Sarthou 6187	CAY, NY, P	French Guiana	3.816667, -52.733333	
R.M. Harley & C. Feuillet 24800	CAY, NY, U, US	French Guiana	4.800000, -52.383333	
J.J. Granville & F. Crozier 16287	CAY, P, US	French Guiana	2.608333, -54.029167	
Grenand 1928	CAY	French Guiana		4.180711, -51.831244
M.J.M. Christenhusz 2388	CAY	French Guiana	4.783333, -52.433333	
L. Barrabé & F. Crozier 59	CAY, US	French Guiana	4.783333, -52.416667	
C. Sastre et al. 8024	CAY, P, US	French Guiana	4.750000, -52.433333	
C. Sastre et al. 8028	CAY, P, US	French Guiana	4.750000, -52.433333	
L. Skog et al. 7467a	CAY [not found], US	French Guiana	5.550000, -53.933333	
L. Skog et al. 7482	CAY	French Guiana	5.566667, -53.850000	
Oldeman T-815	CAY, U, US	French Guiana		3.806557, -51.883948
R.C. Ek et al. 1422	CAY, U	French Guiana	4.583333, -52.266667	
R.C. Ek et al. 1738	CAY, L, US	French Guiana	4.583333, -52.266667	
R.C. Ek et al. 1448	CAY, U	French Guiana	4.583333, -52.266667	
Cremers 7418	CAY, P, US	French Guiana		4.692107, -53.596938
C. Sastre 4756	CAY, P, US	French Guiana		2.329120, -52.750701
V. Hequet 1125	CAY	French Guiana		5.411817, -52.989900
V. Hequet 1243	CAY	French Guiana		4.880580, -52.510550
C. & F. Sastre 186	CAY, P, US	French Guiana		5.075498, -52.601708
J.J. Granville et al. 16008	CAY, P, US	French Guiana	2.508333, -53.827778	
J.J. Granville et al. 15298	CAY, P, US	French Guiana	2.383333, -53.005556	
C. Feuillet 833	CAY, P, US	French Guiana		2.388953, -52.705493
R. Girault & J. Sutra 963	CAY	French Guiana	5.379503, -53.055608	
R. Girault & J. Sutra 979	CAY	French Guiana	5.495181, -53.305789	
G. Cremers 8100	CAY, P, US	French Guiana		4.858168, -52.372887
Cremers 6624	CAY, US	French Guiana		3.25, -53.08
Cremers 5662	CAY, P, US	French Guiana		4.890543, -52.510817
Cremers 5494	CAS, CAY	French Guiana		5.496410, -53.323061
B. Descoings & Cl. Luu 20271	CAY	French Guiana		4.791912, -52.402353
C. Sastre 4736	P	French Guiana		2.329746, -52.773513
C. Sastre et al. 3809	CAY, MO, P	French Guiana		4.756194, -52.333384
G. Cremers 9456	CAY, P	French Guiana		4.893627, -52.520330
G. Cremers & M. Hoff 10740	CAS, CAY, P	French Guiana	5.133333, -52.683333	
M. Hoff & G. Cremers 5558	CAY, P	French Guiana	5.483333, -53.550000	
S. Gonzalez 2377	CAY	French Guiana	3.988889, -51.908889	
Granville 2605	CAY	French Guiana		2.378966, -53.011024
M.J. Jansen-Jacobs et al. 5134	CAY	French Guiana	4.600000, -52.300000	

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
M.J. Jansen-Jacobs et al. 5231	CAY, P	French Guiana	4.766667, -52.300000	
J.F. Villiers & C. Sarthou 6116	CAY, P	French Guiana	3.816667, -52.733333	
J.F. Villiers & C. Sarthou 6298	P	French Guiana	4.583333, -54.350000	
A. Raynal-Roques & J. Jérémie 21256	CAY	French Guiana		5.300846, -52.917135
A. Raynal-Roques & J. Jérémie 21289	CAY, P	French Guiana		4.520217, -52.363015
C. Sastre 6422	CAY, P	French Guiana		5.460367, -53.857876
G.A. Black & R.M. Klein 17116	IAN	French Guiana		5.162783, -52.690382
O. Tostain & G. Leotard 3213	CAY	French Guiana	4.625556, -52.452500	
O. Tostain & F. Crozier 532	CAY	French Guiana	4.952778, -52.439722	
D. Toriola-Marbot 391	CAY	French Guiana	5.400000, -53.050000	
P. Silland et al. 954	CAY	French Guiana	4.836317, -52.369525	
P. Silland & J. Sutra 933	CAY	French Guiana	4.645633, -52.342500	
P. Silland et al. 854	CAY	French Guiana	4.649092, -52.314367	
N.Y. Sandwith 1270	NY	Guyana		5.176037, -59.486364
R.S. Cowan & T.R. Soderstrom 1888	NY, US	Guyana		5.187272, -59.487995
K.J. Wurdack et al. 4128	MO, NY, US	Guyana	5.166417, -59.483361	
C.L. Kelloff et al. 959	NY, U, US	Guyana	5.166667, -59.483333	
W. Hahn et al. 4745	NY, US	Guyana	5.166667, -59.483333	
L.P. Kvist et al. 14	CAY, NY, P, US	Guyana	5.183333, -59.483333	
F.A. Michelangeli & P. Benjamin 2589	NY	Guyana	5.177222, -59.486944	
F.A. Michelangeli 2495	NY	Guyana	5.267667, -59.513889	
B. Maguire et al. 46187	F, NY, P	Guyana		3.762649, -59.663261
T.W. Henkel et al. 6679	CAS, NY, US	Guyana	5.116667, -59.133333	
F.A. Michelangeli & J. Aguirre-Santoro 2072	CAS, MO, NY, US	Suriname	3.930111, -56.190722	
F.A. Michelangeli & J. Aguirre-Santoro 2116	CAS, MO, NY, US	Suriname	3.913667, -56.196556	
J.C. Lindeman 4268	NY	Suriname		5.511573, -54.792207
J. Lanjouw & J.C. Lindeman 791	NY	Suriname		5.585957, -54.314068
F.A. Michelangeli & J. Aguirre-Santoro 2202	NY	Suriname	3.789139, -56.157833	
B. Maguire 24207	F, NY, US	Suriname		3.910000, -56.160000
T. Hawkins 1810	MO, US	Suriname	3.908889, -56.212222	
M.J. Jansen-Jacobs et al. 6623	U	Suriname	4.268611, -54.740556	
L.G. Lohmann & M. Peckham 141	L, MO	Suriname	3.907222, -56.212500	
T. Hawkins 1991	MO	Suriname	3.933333, -56.186111	
T.B. Croat 53881	MO	Suriname	5.050000, -55.133333	
J.J. Granville et al. 12281	CAY, P, U	Suriname	2.483333, -54.750000	
Blakea parasitica				
K.S. Gonçalves et al. 647	RB, RON	Brazil		-10.840306, -63.629806
K.R.C. Paixão et al. 207	RB, RON	Brazil	-10.818333, -63.626389	
A. Ducke s.n.	MG, US	Brazil		-1.451734, -51.645185
A. Ducke 876	IAN, INPA, MO, NY, US	Brazil		-4.409494, -69.870667
A. Ducke s.n.	K, P, RB, S, U, US	Brazil		-2.760270, -56.667622
A. Ducke s.n.	RB, U	Brazil		-1.417208, -51.649395
N.A. Rosa & M.R. dos Santos 1824	MO, NY, RB	Brazil		0.666099, -51.357437
R. Goldenberg et al. 2541	RB, UPCB	Brazil	1.187778, -52.368889	
A. Aubréville 147	P, US	Brazil		0.894775, -52.003179
D.C. Daly & J. Cardoso 3792	HAMAB, K, NY, US	Brazil	3.650000, -51.766667	
H.S. Irwin et al. 48055	NY, US	Brazil	2.116667, -52.950000	
B.A. Krukoff 8896	K, MO, NY, P, S, U, US	Brazil		-4.079723, -69.579720
H.S. Irwin et al. 48156	IAN, K, NY, US	Brazil	2.200000, -52.883333	
C. Sastre 1699	P, US	Brazil		2.279799, -54.527238

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
G.T. Prance et al. 30444	INPA, K, NY, MO, US	Brazil	-0.950000, -49.933333	
W.R. Anderson et al. 11103	L, NY, US	Brazil	-7.583333, -57.516667	
W.A. Egler & Raimundo 1242	IAN, US	Brazil	-7.763351, -57.297487	
M.J.P. Pires et al. 781	INPA, US	Brazil		-0.809171, -52.523895
K. Kubitzki et al. 85-25	US	Brazil		-1.050982, -50.421501
S. Mori et al. 17349	CAS, K, MO, UFRR, HAMAB, NY, US	Brazil	2.550000, -51.266667	
H.S. Irwin et al. 47942	IAN, NY, S, US	Brazil	2.200000, -52.883333	
D. Sasaki et al. 1854	HERBAM, K, NY, SPF	Brazil	-9.667306, -55.215528	
N.T. da Silva 464	IAN	Brazil		-2.067180, -54.945700
E. Oliveira 39	IAN	Brazil		-2.38333, -56.25
M.O. de S. Hamada et al. 59	IAN, UPCB	Brazil	1.844722, -52.741389	
C. Sastre 1754	P, US	French Guiana		2.247723, -54.489644
S.E. Hoyos Gómez et al. 2344	CAS, NY, US	Colombia	6.447500, -76.321667	
W.A. Archer 1799	MO, US	Colombia		5.672582, -76.664636
A.H. Gentry & E. Rentería A. 24141	MO, US	Colombia		5.744732, -76.561557
E. Forero et al. 5850	MO, US	Colombia		5.744722, -76.277878
A.H. Gentry & M. Fallen 17688	MO, NY, US	Colombia		4.852574, -76.870987
J. Espina et al. 1331	MO, US	Colombia		4.884748, -76.829738
E. Forero et al. 4647	INPA, MBM, MO, SP, U, US	Colombia	4.700000, -76.916667	
E. Forero et al. 6243	MO, US	Colombia		4.885277, -76.280277
E. Forero et al. 3425	MO, US	Colombia		4.867123, -76.251610
J. Betancur et al. 3473	US	Colombia	5.466667, -75.900000	
E. Forero et al. 6052	MO, SP, US	Colombia		5.820192, -76.234843
A. Juncosa 2509	MO, US	Colombia		5.300000, -76.366660
E. Forero et al. 3990	INPA, MO, SP, US	Colombia	4.166667, -77.166667	
H.P. Fuchs & L. Zanella 21859	MO, NY, U, US	Colombia		4.947520, -77.355551
A.H. Gentry & J. Brand M. 36871	MO, US	Colombia		5.745000, -76.537000
E. Forero & R. Jaramillo 5381	MO, US	Colombia	5.166667, -76.683333	
J. Cuatrecasas 16784	COL, F, NY, US	Colombia		4.071673, -77.087274
E. Forero et al. 4145	INPA, MO, SP, US	Colombia	4.200000, -77.133333	
E.P. Killip & J. Cuatrecasas 38849	F, NY, US	Colombia		3.600572, -76.645843
L. Uribe-Uribe & J.C. Cortes 6285	US	Colombia		3.617725, -76.912909
E. Forero et al. 4196	MO, US	Colombia	4.200000, -77.133333	
J. Cuatrecasas 15688	F, NY, US	Colombia		4.347491, -76.414709
R. Fonnegra et al. 2057	MO, US	Colombia		7.258618, -76.391113
J.J. Hernandez & S.E. Hoyos 396	MO, US	Colombia		5.942343, -74.859755
J.M. MacDougal et al. 3790	MO, US	Colombia	6.666667, -76.433333	
R. Callejas et al. 8550	MO, NY, US	Colombia	6.083333, -74.866667	
E.L. Core 677	MO, NY, US	Colombia		7.133690, -75.086288
M. Chaparro et al. 99	MO, US	Colombia		3.256352, -73.890291
J. D. Shepherd 777	US	Colombia	7.500000, -74.833333	
J. Denslow 2375	US	Colombia	7.216667, -75.050000	
J.L. Zarucchi et al. 5572	MO, US	Colombia	6.733333, -76.400000	
R. Fonnegra et al. 2992	US	Colombia		6.088430, -74.839428
S. Vogel 109	US	Colombia		1.602281, -75.570126
J.M. Idrobo & R.E. Schultes 672	US	Colombia		2.468713, -72.621483
J. Espina 2018	MO, NY	Colombia		5.05275, -77.05234
D.D. Soejarto et al. 4081	F, MO, NY	Colombia		6.999714, -75.507299
F. Almeda et al. 10290	CAS, NY	Colombia	3.587950, -76.872533	
P. Pedraza-Peñalosa et al. 2394	CAS, NY	Colombia	6.540333, -76.310750	
N. Castaño et al. 3772	NY	Colombia	2.539833, -72.714139	
M.F. González et al. 237	NY	Colombia	4.891667, -73.281667	
R. Callejas 1127	NY	Colombia		6.291896, -75.428679

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
P. Pedraza-Peñalosa et al. 2214	NY	Colombia	6.522083, -76.296611	
M. Alvear et al. 1486	CAS, NY	Colombia	5.233667, -76.084517	
M. Alvear et al. 1582	CAS, NY	Colombia	3.612983, -76.915533	
J. Betancur et al. 6093	NY	Colombia	5.637500, -77.327222	
R. Fonnegra G. et al. 2993	FLAS	Colombia	6.167009, -74.821014	
D.S. Penneys 1821	FLAS, NY	Costa Rica	8.784833, -82.960167	
P. Acevedo Rdgz. 496	US	Costa Rica		8.644987, -83.663766
P.H. Raven 21957	US	Costa Rica		8.786454, -82.957835
B. Hammel et al. 16978	US	Costa Rica	8.666667, -83.566667	
A.F. Skutch 4952	NY, US	Costa Rica		9.333640, -83.762344
M. Grayum et al. 8323	US	Costa Rica	9.700000, -84.391667	
H. Pittier 13423	US	Costa Rica		10.359058, -84.530676
R. Kriebel 868	US	Costa Rica	10.924658, -85.471328	
B.K. Holst et al. 8565	NY, US	Costa Rica	9.248333, -83.753333	
J. & K. Utley 5109	NY, US	Costa Rica		10.202622, -84.531546
R. Aguilar 11371	NY	Costa Rica	8.697778, -83.593056	
R. Aguilar 11368	NY	Costa Rica	8.697778, -83.593056	
C. Lumer 1368	NY	Costa Rica		8.786834, -82.959212
A. Smith 1844	NY	Costa Rica		10.318835, -84.451329
B. Hammel et al. 22852	NY	Costa Rica	8.659722, -83.554167	
L. Acosta 3223	NY	Costa Rica	9.733333, -84.383333	
O. Poncy 2820	CAY, P	French Guiana	2.238889, -54.433333	
J.J. de Granville et al. 6413	CAY, INPA, MO, P, RB, U, US	French Guiana		4.587867, -53.299394
P. Acevedo-Rodríguez et al. 12372	NY, US	French Guiana	4.000000, -52.583333	
S. Gonzalez 2385	CAY, MO, US	French Guiana	3.988889, -51.908889	
O. Poncy et al. 1860	CAY, P, US	French Guiana	4.050000, -52.700000	
C. Feuillet & Montagne Torte Expedition members 10222	MO, US, WAG	French Guiana	4.300000, -52.366667	
Oldeman 3063	CAY, P, US	French Guiana		3.170000, -52.340000
Oldeman B 923	CAY, IAN, P, US	French Guiana		3.900000, -52.560000
R.A.A. Oldeman B 984	CAY, P, US	French Guiana		4.280000, -52.160000
Oldeman B 1451	CAY, IAN, L, P, U, US	French Guiana		3.705286, -51.976265
Oldeman B 2754	CAY, P, US	French Guiana		4.410000, -51.930000
J.J. Granville et al. 15533	CAY, P	French Guiana	2.388889, -53.005556	
C. Sarthou 805	CAY, P, US	French Guiana	2.266667, -54.516667	
A. Aubréville 362	P, US	French Guiana		4.659723, -52.332173
L. Allorge 184	NY, P, US	French Guiana		3.980000, -52.560000
V.P.A. Lukkien 1	L, US	French Guiana	4.616667, -52.283333	
C.V. Martin & S. Markiban 60	P	French Guiana	4.500000, -52.333333	
O. Tostain et al. 1867	P, US	French Guiana	3.602500, -53.246667	
Oldeman B 3437	CAY, P, US	French Guiana		2.850000, -52.450000
Oldeman B 3148	CAY, P, US	French Guiana		2.650943, -52.550987
Oldeman B 2508	CAY, P, US	French Guiana		3.563255, -52.040042
Oldeman B-2087	CAY, P, US	French Guiana		4.050000, -52.700000
C. Sastre 4492	CAY, P, US	French Guiana		2.390740, -53.017670
Cremers 4637	CAY, MO, P, US	French Guiana		2.830000, -53.550000
Cremers 7834	CAY, P, US	French Guiana		4.610000, -52.300000
D. Larpin 890	P	French Guiana	4.050000, -52.700000	
C. Feuillet 3844	CAY, US	French Guiana	3.500000, -53.500000	
J.J. Granville & F. Crozier 16436	CAY, P	French Guiana	2.616667, -54.045833	
S.A. Mori et al. 25489	CAY, MO, NY, P, U, US	French Guiana	4.088150, -52.679567	
de Granville 343	CAY, P, US	French Guiana		2.780000, -52.560000
de Granville 441	CAY, P, US	French Guiana		2.610000, -52.710000

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
J.J. de Granville et al. 6154	CAY, NY, P, US	French Guiana		4.600000, -53.330000
de Granville 6780	CAY, P, US	French Guiana		4.800000, -52.160000
J.J. Granville 479	CAY, P	French Guiana		2.747682, -52.613644
J.J. de Granville et al. 8734	CAY, P, US	French Guiana	3.600000, -53.283333	
J.J. Granville et al. 8972	CAY, NY, P, US	French Guiana	3.583333, -53.333333	
J.J. de Granville et al. 10771	CAY, NY, P, US	French Guiana	3.550000, -53.916667	
J.J. de Granville et al. 11793	CAY, MO, NY, P, US	French Guiana	3.300000, -52.950000	
Grenand 609	CAS, CAY, P, US	French Guiana		2.257150, -52.877303
Grenand 1777	CAY, P, US	French Guiana		3.910000, -51.800000
Grenand & Guilloumet 3215	CAY, P, U, US	French Guiana		3.907701, -51.794772
Lescure 232	NY, US	French Guiana		5.260000, -53.060000
S.A. Mori & C.A. Gracie 18724	CAY, NY, P	French Guiana	3.616667, -53.200000	
Oldeman 1901	CAY, NY, P	French Guiana		3.907516, -51.792779
J.J. Granville 3913	CAY, P	French Guiana		3.41227, -53.07834
P.J.M. Maas et al. 10611	L	French Guiana	4.196667, -52.151667	
G. Cremers 12161	CAY, NY, P	French Guiana	3.966667, -51.866667	
G. Cremers & P. Petronelli 11676	CAY, MO, NY, P	French Guiana	4.183333, -52.150000	
C.K. Geiselman 37	NY	French Guiana	4.091667, -52.683333	
J.J. Granville et al. 15067	CAY, P	French Guiana	2.816667, -53.366667	
J.F. Villiers & C. Sarthou 6031	P	French Guiana	3.466667, -53.216667	
A. Raynal & C. Tirel 18618	NY, P	French Guiana		3.613140, -53.217660
J.J. de Granville et al. 10694	CAY, MO, NY	French Guiana	3.550000, -53.916667	
O. Poncy et al. 1692	P	French Guiana	3.983333, -52.583333	
M.J. Jansen-Jacobs & J. Moonen 5337	P	French Guiana	4.583333, -52.316667	
S. Mori & J. Kallunki 6357	MO, RB	Panama		8.916686, -79.650730
J.D. Dwyer 2205	FLAS	Panama		7.585833, -78.190278
J.T. & F. Witherspoon 8657	FLAS	Panama		9.521488, -79.684726
A. Fendler 295	K, US	Panama		9.265091, -79.946442
N. Bristan 1275(2)	US	Panama		8.123642, -77.741372
N. Bristan 1353(3)	US	Panama		8.123161, -77.734848
J.L. Luteyn & R. Foster 1377	US	Panama		7.433223, -80.509773
H. Herrera et al. 1713	US	Panama	9.383333, -78.566667	
H. Herrera 1843	US	Panama	9.283333, -78.250000	
J.D. Dwyer 2432	US	Panama		7.648218, -80.348355
G. McPherson 11277	US	Panama	9.250000, -79.000000	
R.L. Dressler 3476	US	Panama		9.233074, -79.350879
R.L. Dressler 4360	US	Panama		9.202904, -79.066541
H. Herrera 1792	US	Panama	9.225000, -78.250000	
R.L. Dressler 2867	US	Panama		9.161570, -79.840261
P.H. Allen 2067	US	Panama		8.613996, -80.130887
M.E. Davidson 697	US	Panama		8.776817, -82.449329
S. Mori & J. Kallunki 4956	US	Panama		9.268427, -79.374761
R.L. Dressler & N.H. Williams 3958	US	Panama		8.708946, -79.910791
M.D. Correa A. et al. 3007	US	Panama		8.620226, -80.138960
H. Herrera et al. 1586	US	Panama	9.225000, -78.250000	
G. McPherson 10916	US	Panama	9.133333, -79.666667	
J.A. Duke 13549(3)	US	Panama		7.937676, -77.919195
C. Galdames et al. 7443	US	Panama	8.541667, -81.155833	
G. McPherson 19797	US	Panama	8.823056, -80.659722	
G. McPherson 10931	US	Panama	7.700000, -80.850000	
J. Batista et al. 1164	NY	Panama	7.979444, -78.354750	
I. Vergara-Pérez et al. 1026	NY	Panama		8.87783, -80.63908
P.H. Allen 294	NY	Panama		8.144864, -77.680797

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
W.L. Stern & K.L. Chambers 175	NY	Panama		7.429775, -78.043389
J.A. Duke 14083(3)	F, NY	Panama		8.669629, -78.151984
G. McPherson & B. Allen 9625	MO, UEC	Panama	8.916667, -82.166667	
F. Hernández et al. 217	NY	Panama		8.497956, -81.084488
T.B. Croat 14784	F, NY	Panama		8.70686, -79.91219
G. McPherson et al. 15377	F	Panama	7.966667, -78.383333	
P.H. Allen 2788	NY	Panama		8.622186, -80.136978
B.W. 6797	RB, US	Suriname		4.951365, -55.183137
C. Vreden / LBB 13702	US	Suriname		4.880000, -55.210000
J. Lanjouw s.n.	NY, U	Suriname		4.883333, -55.216667
L. Schmidt 301	NY	Suriname		3.34478, -55.44159
J.W. Gonggrijp 3710	U	Suriname		4.17652, -54.38826
R.L. Liesner et al. 9661	MBM, MO, NY, US	Venezuela	7.783333, -71.766667	
J.A. Steyermark & B. Manara 125166	US	Venezuela	7.783333, -71.766667	
J.A. Steyermark 99927	P, US	Venezuela		9.805332, -72.824626
G. Davidse et al. 18801	MO, NY, US	Venezuela		9.138158, -72.846192
B. Stergios & L. Delgado 12424	US	Venezuela	5.100000, -64.200000	
F. Guánchez 110	US	Venezuela	5.633333, -67.183333	
L. Delgado 758	NY, US	Venezuela	4.500000, -65.800000	
A. Castillo 2171	MO, US	Venezuela	6.416667, -67.416667	
H. van der Werff & A. González 5002	MO, NY	Venezuela	8.833333, -71.783333	
Comolia berberifolia				
R. Goldenberg et al. 1907	CEPEC, INPA, MO, NY, RB, UPCB	Brazil	0.188889, -63.168056	
E.L. Sette Silva 187	INPA, MIRR, MO, NY, US	Brazil		0.500000, -63.500000
G.T. Prance & O. Huber 29845	HFSL, INPA, NY, US	Brazil		-0.216667, -63.133333
Dicrananthera hedyotidea				
M. Oliveira & A.A. Grillo 1084	IPA, UFP, UPCB	Brazil		-8.979501, -35.937693
E. Ule 5997	K, L	Brazil		-3.148978, -59.996175
A.V. Popovkin 720	HUEFS	Brazil	-12.016667, -38.033333	
A.V. Popovkin & J.C. Mendes 1526	HUEFS	Brazil	-12.016667, -38.033333	
C.M.L.R. Araújo & M.F.M. de Brito 280	BHCB, JPB, UFP	Brazil	-7.114167, -34.978056	
J.I.A. Falcão et al. 897	RB, US	Brazil		-8.732173, -35.173974
B.J. Pickel 3094	US	Brazil		-9.430995, -40.736404
G.A. Gomes-Costa et al. 222	JPB, NY	Brazil		-8.714181, -35.836953
J.L. Viana et al. 52	JPB	Brazil	-8.720000, -35.843889	
M. Sobral Leite 185	RB, UFP	Brazil	-8.796611, -35.840944	
M. Sobral Leite 205	CPAP, UFP	Brazil	-8.800778, -35.823778	
M. Sobral Leite 447	UFP	Brazil	-8.805639, -35.839528	
M. Sobral Leite 468	IPA, UFP	Brazil	-8.802778, -35.838889	
R.C. Forzza et al. 10995	RB	Brazil	3.356944, -61.429167	
M.J. Jansen-Jacobs et al. 5381	NY, U, US	Guyana	2.200000, -59.583333	
M.J. Jansen-Jacobs et al. 4992	CAY, NY, US	Guyana	2.833333, -59.083333	
Wullschlägel 168	BR, NY	Suriname		5.446261, -55.297307
M. Ramia et al. 8443	NY	Venezuela		7.887083, -68.863011
J.A. Steyermark 88770	NY, US	Venezuela		7.666882, -61.333383
B. Maguire et al. 35919	NY, RB, US	Venezuela		7.551195, -63.211082
B. Maguire et al. 35898	NY	Venezuela		7.479929, -63.240964
A.H.G. Alston 5953	NY, U, US	Venezuela		10.187659, -68.172954
F.A. Michelangeli 822	NY	Venezuela	8.950000, -68.050000	
Pterogastra divaricata* var. *divaricata				
A. Araujo M. et al. 890	MO, NY	Bolivia	-13.034167, -68.842778	
D. Nunes et al. 541	RB	Brazil	-8.652778, -64.350806	
F.A. Carvalho et al. 1320	INPA	Brazil	-8.657500, -64.360833	

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
W.R. Philipson 2385	NY	Colombia		2.456346, -73.890807
S. Madriñán et al. 1144	NY	Colombia	1.250000, -70.850000	
F.R. Fosberg 20178	NY, US	Colombia	4.066667, -73.533333	
R. Jaramillo et al. 427	US	Colombia		3.981848, -73.787603
Bro. Daniel 456	US	Colombia		6.540418, -75.087786
A. Fernández 2185	US	Colombia		2.486153, -69.684134
S.G. Smith 1273	IAN, US	Colombia		3.728965, -75.510866
J. Gasche & J. Desplats 88	US	Colombia		-1.475576, -72.713048
J.-H. Humbert et al. 27167	U, US	Colombia		4.211439, -73.816590
G. Davidse & J.S. Miller 26628	MO, NY, US	Colombia		2.005174, -67.121975
E.P. Killip 34291	US	Colombia		4.034339, -73.771358
T.A. Sprague 29	US	Colombia		4.284022, -72.798528
C. Sastre 2253	US	Colombia		-1.443962, -72.785856
H. García Barriga 14959	F, US	Colombia		0.862162, -71.013983
F.J. Hermann 11074	US	Colombia		4.320280, -70.259148
R. Callejas & O. Marulanda 6973	US	Colombia	2.250000, -73.750000	
L. Uribe Uribe 3509	US	Colombia		9.003441, -73.757397
J. Cuatrecasas 13115	F, US	Colombia		6.990153, -72.221272
R. Callejas et al. 4726	MO, NY, US	Colombia	6.933333, -74.750000	
M.L. Grant 9129	US	Colombia		5.445319, -74.347355
G. Davidse & F. Llanos 5390A	MO, US	Colombia		4.194214, -73.596011
J.A. Molina & F.A. Barkley 18M.032	US	Colombia		4.183735, -73.638537
N.C. Fassett 25067	NY, US	Colombia		7.392034, -73.542092
H. García Barriga 11065	US	Colombia		5.014049, -74.273802
P.H. Allen 3359	F, US	Colombia		4.078609, -73.703751
J.H. Langenheim 3304	US	Colombia		6.560371, -73.162735
J.H. Langenheim 3330	US	Colombia		6.942498, -73.034953
J.A. Molina & F.A. Barkley 18Va007	NY, US	Colombia		1.908579, -67.068900
E.L. Core 685	NY, US	Colombia		7.013519, -75.139950
J. Cuatrecasas 3613	F, US	Colombia		4.284581, -72.799829
J. Cuatrecasas 7425	F, NY, US	Colombia		2.567644, -72.656149
J. Cuatrecasas 13147	F, NY, US	Colombia		7.042957, -72.090733
Bro. Ariste-Joseph A805	NY, US	Colombia		5.369730, -74.149581
J.M. MacDougal & J. Betancur 4083	MO, US	Colombia	6.900000, -75.066667	
R.E. Schultes & I. Cabrera 19729	NY, U, US	Colombia	0.666667, -70.500000	
J.L. Zarucchi & C.E. Barbosa 3599	CAS, MO, NY, US	Colombia	5.300000, -68.016667	
J. Cuatrecasas 6983	US	Colombia		1.184489, -70.269473
L. Uribe U. 4559	F, NY	Colombia		5.374500, -72.702120
F. González & R. Serna 3312	NY	Colombia	4.583333, -71.300000	
J. Cuatrecasas 4746	F	Colombia		3.8811, -72.8667
D. Cárdenas-López & N.L. Salinas 23756	NY	Colombia	1.261111, -70.185000	
D. Tuberquia & G. Gómez 110	MO, NY	Colombia		6.900000, -75.066667
R. Callejas et al. 9157	MO, NY	Colombia	6.916667, -75.083333	
G. Davidse & F. Llanos 5220	MO	Colombia	4.4333300, -70.4500000	
R. Fonnegra G. et al. 604	MO	Colombia	7.3166600, -75.0563800	
D. Giraldo-Cañas 84	MO	Colombia	6.0333300, -75.1333300	
D.A. Sánchez S. & G. Yepes 5585	MO	Colombia	6.5333300, -75.1000000	
R. Fonnegra G. et al. 4474	MO	Colombia	6.9166600, -75.0666600	
H. David et al. 1669	MO	Colombia	7.0047222, -75.1658333	
B. Øllgaard et al. 74788	MO	Ecuador	-4.0666600, -78.9500000	
T. Montenegro & Grupo Post-Grado MO-QCNE 158	MO	Ecuador	-3.6355500, -78.3894400	

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
s.c. WB589	NY	Guyana		3.178148, -59.610901
H.S. Irwin 742	US	Guyana		3.423333, -59.759044
G. Klug 3049	F, NY, US	Peru		-5.823849, -76.570007
S. McDaniel & M. Rimachi Y. 16496	MO, US	Peru		-5.226198, -75.658680
G. Klug 3314	F, NY, US	Peru		-6.061639, -76.956865
M. Chrostowski 70-133	MO, US	Peru		-5.977860, -77.090356
LI. Williams 7643	F, NY, US	Peru		-6.047098, -76.959532
J. Albán C. & & R.B. Foster 7018	F	Peru	-12.950000, -68.883333	
P. Núñez V. et al. 9795	MO	Peru	-12.566666, -68.700000	
E.G. Holt & W. Gehriger 304	NY, RB, US	Venezuela		1.918706, -67.045439
J.A. Steyermark 75283	F, NY, US	Venezuela		5.368446, -62.652800
B. Maguire & J.J. Wurdack 34700	F, IAN, NY, RB, US	Venezuela		1.918706, -67.045439
A. Fernández 21440	NY	Venezuela	2.433333, -64.916667	
LI. Williams 15423	F, US	Venezuela		3.160000, -65.550000
J. Steyermark & G. S. Bunting 102711	NY, US	Venezuela		1.925936, -67.052973
J. Velazco 613	US	Venezuela	5.150000, -67.750000	
G.H.H. Tate 182	NY, US	Venezuela		3.205129, -65.513276
J. Steyermark 57768	F, NY, US	Venezuela		3.219645, -65.585705
K.M. Redden et al. 3713	US	Venezuela	1.930222, -67.016139	
G.S. Bunting et al. 3509	U, US	Venezuela		5.429093, -67.639677
F. Cardona Puig 784	NY, US	Venezuela		6.350000, -63.460000
F. Cardona Puig 2361	US	Venezuela		5.200000, -62.060000
R. Liesner 24581	US	Venezuela	3.700000, -65.716667	
O. Huber 4206	US	Venezuela	5.800000, -67.333333	
O. Huber & G. Medina C. 10883	NY, US	Venezuela	6.116667, -63.366667	
O. Huber 11356	NY, US	Venezuela	5.183333, -61.700000	
F.A. Michelangeli 378	CAS, MO, NY, US	Venezuela	1.930000, -67.060000	
N.R. Ferrigni V. et al. 49Es	NY, U, US	Venezuela	3.166667, -65.516667	
R.L. Liesner 6276	MO, US	Venezuela	1.933333, -67.050000	
G. Davidse et al. 18268	MO, NY, US	Venezuela	9.516667, -72.583333	
G. Davidse & A.C. González 21699	CAS, MO, US	Venezuela	7.450000, -71.916667	
G.H.H. Tate 160	NY, US	Venezuela		1.906541, -67.053659
G. Davidse & A.C. González 14252	MO, US	Venezuela	6.183333, -68.783333	
G. Davidse & A.C. González 13921	MO, US	Venezuela	6.316667, -67.833333	
R.L. Liesner 24581	MO, NY, U, US	Venezuela	3.700000, -65.716667	
H.L. Clark 6436	NY	Venezuela	1.933333, -67.050000	
O. Huber 4705	NY	Venezuela	5.800000, -67.333333	
J.J. Wurdack & N.G.L. Guppy 35	NY	Venezuela	6.750000, -63.500000	
H. Bossio 22	F	Venezuela		5.138441, -67.802980
O. Huber 644	MO	Venezuela	5.6166667, -67.6000000	
Pterogastra divaricata* var. *glabra				
H.F. Pittier 10577	GH, NY, US	Venezuela		9.819412, -70.924253
E. Tejera 163	US	Venezuela		10.1985, -72.6522
Pterogastra minor				
J.M. Idrobo & R.E. Schultes 676	US	Colombia		2.268152, -72.046680
J. Cuatrecasas 4026	F, MO, US	Colombia		6.173466, -67.499994
J.J. Wurdack & J.V. Monachino 39800	F, NY, RB, U, US	Venezuela		7.033560, -66.998412
B. Maguire et al. 36195	F, NY, RB, US	Venezuela		5.007215, -67.817920
B. Maguire 36198	NY	Venezuela		5.210786, -67.794934
B. Maguire et al. 36061	F, IAN, NY, RB, U, US	Venezuela		5.671450, -67.613377
G. Davidse 2807	MO, US	Venezuela		5.540616, -67.575571
N.L. Cuello 445	US	Venezuela	5.350000, -67.716667	
F. Guánchez & O. Huber 2375	US	Venezuela	6.183333, -67.433333	

Table S2. Continued.

Collection	Herbaria	Country	Original coordinates	Inferred or corrected coordinates
O. Huber 1275	US	Venezuela	5.616667, -67.600000	
A. Fernández-J. & K. Wurdack 15692	US	Venezuela	5.504167, -67.601389	
O. Huber 2726	US	Venezuela	5.800000, -67.333333	
F. Guánchez & E. Melgueiro 3339	US	Venezuela	4.800000, -67.466667	
F.J. Breteler 4785	F, NY, U, US, WAG	Venezuela	5.033333, -67.766667	
A. Gröger 720	US	Venezuela		3.191553, -65.529877
J. Velazco 509	MO, US	Venezuela	4.983333, -67.683333	
G.N. Morillo & M. Ishikawa 3500	US	Venezuela		4.541714, -67.615321
Á. Fernández & R. Gonto 37620	NY	Venezuela	6.714444, -67.506111	
G.A. Romero 1682	CAS, NY	Venezuela		5.708416, -67.585352
R. Kral et al. 71727	NY	Venezuela		5.834665, -67.480693
O. Huber 4751	NY	Venezuela	5.800000, -67.333333	
O. Huber 1304	MO	Venezuela	5.6166667, -67.6000000	
R.L. Liesner 17256	CAS, MO	Venezuela	5.6500000, -67.6333300	
T.B. Croat 59216	MO	Venezuela	5.6500000, -67.6333333	