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SYNOPSIS OF *EPIDENDRUM* (LAELIINAE) FROM THE STATE OF MATO GROSSO, BRAZIL: TAXONOMY AND DISTRIBUTION

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Abstract. The state of Mato Grosso, in Central-West Brazil, is located within the Amazon Forest, Cerrado and Pantanal phytogeographical domains, harboring diverse habitats for species of *Epidendrum*. The goal of the present study was to develop a taxonomic treatment, including diagnoses, identification key, photographs and distribution maps for the species of *Epidendrum* in the state. We confirmed the presence of 20 species. Additionally, after analyzing the type specimen of *E. callobotrys*, a species described from Mato Grosso and known from only one specimen, we concluded it does not differ from *E. coronatum*; thus, we propose its synonymization. Most species are distributed in the Amazon (17 spp.) and Cerrado (13 spp.) domains. On the other hand, the Pantanal only had five species, recorded for the first time in the present study, which is among the first studies on Orchidaceae in this domain.

Resumo. O estado de Mato Grosso, no Centro-Oeste do Brasil, está localizado entre os domínios fitogeográficos da Amazônia, Cerrado e Pantanal, e possui uma grande diversidade de habitats para espécies de *Epidendrum*. O objetivo deste estudo foi desenvolver um tratamento taxonômico incluindo diagnoses, chave de identificação, fotografias e mapas de distribuição para as espécies de *Epidendrum* que ocorrem no estado. Confirmamos a presença de 20 espécies. Adicionalmente, depois de analisar o espécime tipo de *E. callobotrys*, uma espécie descrita para Mato Grosso e conhecida apenas por uma amostra, concluímos que esta não difere de *E. coronatum*, portanto propomos sua sinonimização. A maioria das espécies são distribuídas nos domínios da Amazônia (17 spp.) e Cerrado (13 spp.). Por outro lado, no Pantanal ocorrem somente cinco espécies, todas registradas pela primeira vez para o domínio neste estudo, que é o primeiro para a família para o Pantanal.

Keywords / Palavras Chave: Amazon, Amazônia, Cerrado, Epidendroideae, Pantanal

Introduction. *Epidendrum* L. is one of the largest genera of Orchidaceae, comprasing 1400–2400 species (Christenhusz *et al.*, 2017; Hágsater & Soto-Arenas, 2005). It is included in subfamily Epidendroideae Lindl, tribe Epidendreae Kunth, and subtribe Laeliinae Benth., differing from the remaining genera in these groups by the presence of a clawed labellum usually adnate to the column, presence of a cuniculus (internal nectary in the ovary) and by the dorsal apical anther (Hágsater & Soto-Arenas, 2005). In Brazil, the genus is represented by 133 species, 65 of which are endemic. The species are distributed in all regions, but they are more common in humid forests in the north and east of the country (Pessoa, 2020). Species show wide vegetative and floral morphological variation (Hagsáter & Soto-Arenas, 2005), leading to the description of several names currently treated as synonyms. In Brazil, for example, 413 synonyms are listed besides the accepted names (BFG, 2015, 2018, 2022). Recent studies have investigated the validity of similar species (Pessoa *et al*., 2021), even showing a hybrid origin for some of them (Pessoa *et al.*, 2022a), but there are still many species to be further investigated. For example, few Brazilian species have been sampled in phylogenetic studies of the genus (Granados-Mendoza *et al.* 2020; Hagsáter & Soto-Arenas, 2005; Klein *et al.*, 2019; Pessoa *et al.*, 2012, 2021, 2022b; Pinheiro *et al.* 2009).

Taxonomic studies focusing on *Epidendrum* have been carried out in some regions of Brazil (Engels & Rocha, 2017; Gomes *et al.*, 2021; Pessoa *et al.*, 2024;

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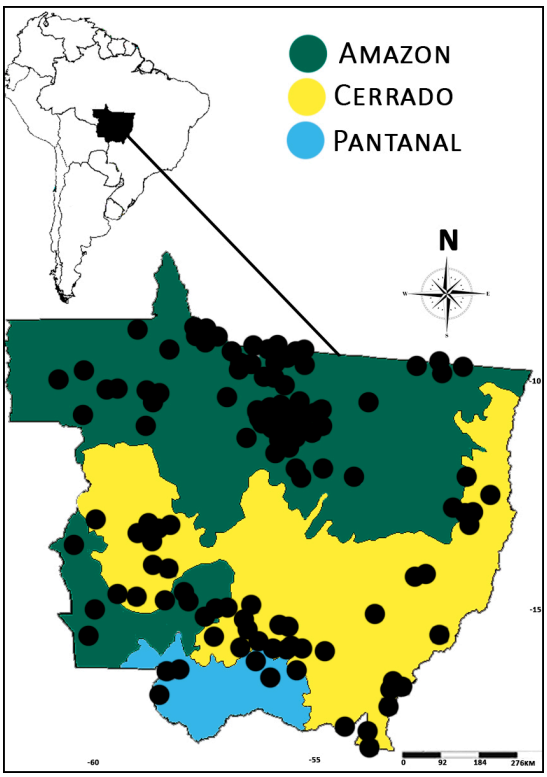

FIGURE 1. Geographic position of Mato Grosso state in South America and its main phytogeographical domains. All *Epidendrum* collections analyzed are plotted as black circles.

Santos & Silva, 2020; Stancik *et al.*, 2009), and some new species have been described (Barberena & Gonzaga, 2016; Cordeiro *et al.*, 2022; Fraga *et al.*, 2015; Krahl *et al.*, 2022; Pessoa & Pedrosa, 2022; Pessoa *et al.*, 2014, 2016). However, the Central-West region represents a significant gap in the knowledge of the genus, where the contributions in literature consist mostly of general floristic studies at the family level (Batista & Bianchetti, 2003; Hall *et al.*, 2013; Koch & Silva, 2012). Exceptions are Engels & Rocha (2017), who show new records for the genus and Santos & Silva (2020), who provide a taxonomic treatment for species that occur in Parque Nacional da Chapada dos Veadeiros, in the state of Goiás.

Therefore, we present here a taxonomic study of the species of *Epidendrum* from the state of Mato Grosso, the third largest federative unit in Brazil in terms of territorial area (IBGE, 2022). The state has the potential to direct the development of public policies for conservation of the genus in the state level. In this context, we hereby show morphological diagnoses of the species, geographical distribution maps, phenology data, photographs and an identification key of the genus for the state.

Material and methods. The state of Mato Grosso comprehends a total area of 903,207.047 km² (almost as big as Venezuela), located in the Central-West region of Brazil (IBGE, 2022). The state contains distinct ecosystems within its large territory. The northern part of the state is in the Amazon phytogeographical domain, with an extension of 480,215 km² (53.6% of the state's area), the median part is covered by Cerrado, with 354,823 km² (39.6%), and the Pantanal is found to the south, with 60,885 km² (6.8%) (SEMA, 2010) (Fig. 1). The tropical monsoon and tropical savanna climates dominate, with high annual mean temperature, with rainy summers and dry winters. It contains abundant hydric resources, with several water bodies, springs, and aquifers (IBGE, 2022).

Images of specimens of *Epidendrum* from Mato Grosso were examined, from the following herbaria: ALCB, CEN, CESJ, CGMS, CNMT, ESA, HAMAB, HCF, HEPH, HERBAM, HPAN, HUCS, HUEFS, IAN, INPA, K, MBM, MO, NY, P, R, RB, SP, SPF, TANG, UB, UEC, UFG, UFMT, and UPCB. The morphological descriptions were based on specimens deposited at the herbarium UFMT. Flowers were rehydrated, and perianths were mounted in cardstock paper for measurement.

Geographical coordinates of the specimens were recorded for assembling distribution maps. Specimens without coordinates were georeferenced based on approximate locality, determined using an online geographical dictionary (GeoLoc-CRIA). Distribution maps were produced using the software SimpleMappr (Shorthouse, 2010). Information about global distribution of the species was obtained from POWO (2024), and their distribution in Brazil was verified in Pessoa (2020). Specimens were identified with help of specialized literature (Carnevali *et al.,* 2003; Pabst & Dungs, 1975; Pessoa, 2020; Stancik *et al.*, 2009), original species descriptions and comparisons with type specimens, when those were available online (JStor, 2024; Reflora, 2024; Tropicos, 2024). The identification key was produced based on the examined specimens.

Taxonomic treatment

Key for identification of species of *Epidendrum* from Mato Grosso (Based on Pessoa 2020)

1. Ovaries partially or completely covered by floral bracts 2
   2. Stems unbranched, rachis ≥ 2.5 cm long ..... ***E. rigidum***
   2a. Stems branched; rachis ≤ 2.0 cm long 3
      3. Ventral face of pedicellate ovary without distinct vesicle ..... ***E. sculptum***
      3a. Ventral face of pedicellate ovary with distinct vesicle ..... ***E. strobiliferum***
1a. Ovaries not covered by floral bracts 4
   4. Leaves cylindrical; inflorescences pubescent ..... ***E. stiliferum***
   4a. Leaves plane; inflorescence glabrous 5
      5. Stems swollen, forming pseudobulbs 6
         6. Terrestrial or rupicolous herbs; flowers pink; labellum 4-lobed ..... ***E. campestre***
         6a. Epiphytic herbs; flowers white; labellum 3-lobed ..... ***E. viviparum***
      5a. Stems not swollen, not forming pseudobulbs 7
         7. Labellum concave-cucullate ..... ***E. dendrobioides***
         7a. Labellum plane, or slightly concave or convex 8
            8. Inflorescences (peduncle + rachis) ≤ 2.0 cm long 9
               9. Median labellum lobe at least twice as long as the lateral lobes ..... ***E. carpophorum***
               9a. Median labellum lobe slightly longer than the lateral lobes 10
                  10. Leaves oblong; sepals green or yellow ..... ***E. pareciense***
                  10a. Leaves elliptical; sepals brown to pink ..... ***E. bahiense***
            8a. Inflorescences (peduncle + rachis) ≥ 3.5 cm long 11
               11. Peduncle at least four times longer than rachis 12
                  12. Inflorescence peduncle dorsoventrally compressed ..... ***E. anceps***
                  12a. Inflorescence peduncle cylindrical 13
                     13. Labellum margin entire ..... ***E. myrmecophorum***
                     13a. Labellum margin denticulate 14
                        14. Flowers orange to red, clearly 3-lobed ..... ***E. macrocarpum***
                        14a. Flowers pink, obscurely 3-lobed ..... ***E. flexuosum***
               11a. Peduncle up to twice as long as the rachis 15
                  15. Flowers with a distinct ventral vesicle in the pedicellate ovary 16
                     16. Labellum entire ..... ***E. strobilicaule***
                     16a. Labellum 3-lobed ..... ***E. smaragdinum***
                  15a. Flowers without a distinct ventral vesicle in the pedicellate ovary 17
                     17. Inflorescence compound 18
                        18. Labellum 3-lobed ..... ***E. amblostomoides***
                        18a. Labellum 4-lobed ..... ***E. densiflorum***
                     17a. Inflorescence simple 19
                        19. Petals linear oblong; labellum margin fringed ..... ***E. cristatum***
                        19a. Petals oblanceolate; labellum margin entire ..... ***E. coronatum***

1. *Epidendrum amblostomoides* Hoehne, Arq. Bot. Estado São Paulo 1: 18. 1938. (Fig. 2A)
   ≡ *Auliza amblostomoides* (Hoehne) Brieger, Orchideen 3 1/A(9): 547. 1977. *comb. inv.*
   ≡ *Amblostoma amblostomoides* (Hoehne) F.Barros, Bol. Mus. Bot. Munic. 53: 3. 1982.

Diagnosis: Epiphytic. Stems swollen forming narrow-ellipsoid pseudobulbs, unbranched. Leaves linear, plane. Inflorescence 4.5–13.5 cm long, compound, glabrous; peduncle 1.5–3.5 cm long, cylindrical; rachis 3.0–10.0 cm long. Flowers 8–20 per inflorescence, resupinate, white; pedicellate ovary without

distinct vesicle in the ventral face, exposed; elliptical sepals; linear petals; labellum 3-lobed, plane, margin erose; column white. Fruits not seen.

Distribution: Endemic to Brazil (states of Goiás, Maranhão, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Rondônia, Tocantins, and the Distrito Federal). In the study area it occurs in the municipalities of Chapada dos Guimarães, Cuiabá, Itaúba and Paranaíta (Fig. 3A).

Comments: Flowers between April and December. It is part of the Amblostomoides Group and the most similar species in Brazil is *E. subpurum* Rchb.f. The limits between these two taxa need further studies since the main difference relies on the lip morphology that is variable in shape even comparing flowers from the same individual. In the study area, it can be confused with *E. smaragdinum* due to the flower color (Fig. 1, 6), but *E. amblostomoides* differs vegetatively due to the presence of swollen stems forming pseudobulbs (*vs.* cylindrical), linear leaves (*vs*. lanceolate), labellum with erose margin (*vs.* labellum with entire margin) and pedicellate ovary without distinct vesicle in the ventral face (*vs.* with distinct vesicle in the ventral face).

Examined material: Chapada dos Guimarães, Trilha Histórica do Matão, 01.XII.2022, *E. Pessoa et al. 1365* (UFMT); Cuiabá, Serra de São Vicente, 05.VI.2006, *B.A. Petini 29* (UFMT 36340); Itaúba, resgate de flora da UHE Colíder, 14.V.2016, *M.E. Engels 4444* (MBM 417249, RB 01338943, TANG 6230); Paranaíta, Terra Firme, 19.IV.2012, *C.R.A. Soares et al. 2026057* (HERBAM 8143); Ibidem, 05.V.2012, *C.R.A. Soares et al. 2196296* (HERBAM 8310).

2. *Epidendrum anceps* Jacq., Select. Stirp. Amer. Hist.: 224. 1763. (Fig. 2B)
   ≡ *Amphiglottis anceps* (Jacq.) Britton, Sci. Surv. Porto Rico & Virgin Islands 5: 200. 1924.
   = *Amphiglottis lurida* Salisb., Trans. Hort. Soc. London 1: 294. 1812.
   = *Cattleya galeottiana* (A.Rich. & Galeotti) Beer, Prakt. Stud. Orchid.: 210. 1854.
   = *Epidendrum amphistomum* A. Rich., Hist. Fis. Cuba, Bot. 11: 240. 1850.
   = *Epidendrum cearense* Barb.Rodr., Gen. Sp. Orchid., 2: 141. 1881.
   = *Epidendrum ensatum* A.Rich. & Galeotti, Ann. Sci. Nat., Bot., III, 3: 22. 1845.
   = *Epidendrum fuscatum* Sm., Spic. Bot.: 21. 1792.
   = *Epidendrum galeottianum* A.Rich. & Galeotti, Ann. Sci. Nat., Bot., II, 3: 21. 1845.
   = *Epidendrum schenckianum* Kraenzl., Repert. Spec. Nov. Regni Veg. Beih. 7: 114. 1909.
   = *Epidendrum schreineri* Barb.Rodr., Gen. Sp. Orchid. 2: 142. 1881.
   = *Epidendrum viridipurpureum* Hook., Bot. Mag. 65: t. 3666. 1838.
   = *Tritelandra fuscata* (Sm.) Raf., Fl. Tellur. 2: 86. 1837.

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves elliptical, plane. Inflorescence 2.6–10.0 cm long, simple, glabrous; peduncle 1.6–6.0 cm long, dorsoventrally compressed; rachis 0.5–4.0 cm long. Flowers 3–11 per inflorescence, resupinate, orangish with a pinkish lip; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals oblanceolate; petals linear; labellum 4-lobed, plane to slightly concave, margin entire; column greenish orange or greenish pink. Fruits not seen.

Distribution: Dominican Republic, Haiti, Puerto Rico, and Brazil (states of Acre, Amazonas, Amapá, Bahia, Ceará, Espírito Santo, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Paraná, Pernambuco, Rio Grande do Sul, Santa Catarina, São Paulo, Rio de Janeiro, Roraima, and the Distrito Federal). In the study area it occurs in the municipalities of Cáceres, Chapada dos Guimarães, Diamantino, Itaúba and Paranaíta (Fig. 3A).

Comments: Flowers between February and November. It is part of the Anceps Group. Many species names were proposed under this group, most of which are considered synonyms since represent color and slight morphological variation found in Brazilian populations of this species. A similar accepted species is *E. musciferum* Lindl. that is distinguished by the 3-lobed lip (*vs.* 4-lobed), this species also lacks the prominent callus between the terminal lobes (*vs*. callus present). The most similar species in Brazil is *E. forcipatoides* Hágsater, but *E. anceps* is easily distinguished by the corymbiform rachis (*vs.* lax racemiform rachis) and

orangish sepals and petals (*vs*. greenish). In the study area it can be mistaken with *E. flexuosum* due to the flowers grouped in the apex of the inflorescences, and rachis longer than the peduncle, but it differs by the 4-lobed labellum with entire margin (*vs.* obscurely 3-lobed and denticulate) and linear petals (*vs.* elliptical-oblanceolate petals).

Examined material: Cáceres, 01.IX.1908, *F.C. Hoehne 445* (R 2812); Ibidem, 01.VII.1909, *F.C. Hoehne 2218* (R 2813); Chapada dos Guimarães, 14.VIII.1998*, A.M. Amaral 38* (UFMT 18395); Ibidem, base aérea do Sindacta, 21.X.1995, G. *Hatschbach 63700* (RB 00419460); Ibidem, Complexo Cachoeirinha, 11.VII.2006, *B.A. Petini 39* (UFMT 36673); Diamantino, 23.XI.2015, *C.A Silva 592* (TANG 4183); Itaúba, resgate de FLORA da UHE Colíder, 09.X.2014, *M.E. Engels 1332663 Copel1* (HERBAM 15503); Ibidem, 21.IX.2014, *M.E. Engels 2876* (MBM 403778); Ibidem, 05.II.2017, *M.E. Engels 4938* (MBM 417226); Paranaíta, Terra Firme, 20.IX.2011, *C.R.A. Soares et al. 124023* (HERBAM 6741); Ibidem, 21.V.2012, *C.R.A. Soares et al. 2296400* (HERBAM 8414); Ibidem, UHE São Manoel Reservatório, 06.VI.2017, *L.P. Zanzini 389* (HERBAM 17502).

3. *Epidendrum bahiense* Rchb.f., Hamburger Garten-Blumenzeitung 15: 53. 1859. (Fig. 2C)
   = *Epidendrum belmontense* V.P.Castro & Marçal, Icon. Orchid. Brasil. 3: t. 253. 2012.
   = *Epidendrum krukoffii* Hágsater, J.M.P.Cordeiro & Krahl, Icon. Orchid. 18(2): t. 1877. 2021.
   = *Epidendrum minus* (Cogn.) Hágsater, Monogr. Syst. Bot. Missouri Bot. Gard. 75: 956. 1999.
   = *Epidendrum nocturnum* var. *minor* Schltr., Repert. Spec. Nov. Regni Veg. 27: 69. 1924.
   = *Epidendrum nocturnum* var. *minus* Cogn., Bull. Soc. Roy. Bot. Belgique 43: 323. 1906.

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves elliptical, plane. Inflorescence 0.6–1.0 cm long, simple, glabrous; peduncle 0.1–0.5 cm long, cylindrical; rachis 0.5–0.7 cm long. Flowers 1–2 per inflorescence, resupinate, brown to pinkish-brown; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical; petals elliptical; labellum 3-lobed, plane, margin entire; column green. Fruits not seen.

Distribution: Bahamas, Belize, Bolivia, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, French Guiana, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Suriname, Trinidad and Tobago, United States (Florida), Venezuela, and Brazil (states of Amazonas, Amapá, Bahia, Espírito Santo, Goiás, Mato Grosso, Pará, Pernambuco, Rio Grande do Norte, Rio de Janeiro and Rondônia). In the study area it occurs in the municipalities of Novo Mundo, Paranaíta, Sapezal, Santa Cruz do Xingu, Tabaporã and Vila Bela da Santíssima Trindade (Fig. 3B).

Comments: Flowers between January and August. It is part of the Nocturnum Group, and is similar to the species with smaller flowers, such as *E. micronocturnum* Carnevali & G.A.Romero and E. *longicolle* Lindl. It is easily distinguished by the brown to pinkish-brown sepals and petals (*vs.* green). In the study area it can be confused with *E. pareciense* and *E. carpophorum* due to the deeply 3-lobed labellum (Fig. 1, 6), but it is easily distinguished by the presence of greenish-brown or pinkish-brown flowers (*vs.* yellow, beige or greenish).

Examined material: Novo Mundo*,* Parque Estadual do Cristalino, 09.II.2008, *G.S Henicka et al. 179* (HERBAM 1030, SPF 207005); Ibidem, 27.I.2008, *D.C Zappi et al. 860* (HERBAM 2053, SPF 207009); Ibidem, 29.I.2008, *D.C. Zappi et al. 951* (SPF 207011, HERBAM 2135); Paranaíta, Terra Firme, 17.II.2012, C.R.A. Soares et al 1195305 (HERBAM 7703); Sapezal, Aldeia Utiariti, 26.III.1997, *R. Godinho 280* (UFMT 15396); Ibidem, Salto do Utiariti, 26.VIII.1995, *R. Godinho & M. Macedo 68* (UFMT 18308); Santa Cruz do Xingu, Parque Estadual do Xingu, 08.III.2011, *C.R.A. Soares et al. 3191* (RB 00622094); Tabaporã, Fazenda Crestani, 22.V.2010, *J. Dambroz 14* (CNMT 201); Vila Bela da Santíssima Trindade, Subindo o rio Alegre, 25.III.2014, *M.F Simon et al. 2421* (UB 218416), Ibidem, 25.III.2014, *M.F Simon et al. 2421* (UFMT 41939); Ibidem, 25.III.2014, *M.F Simon 2421* (CEN 87433, UB 218416, UFMT 41939).

4. *Epidendrum campestre* Lindl., Edwards's Bot. Reg. 30: Misc. 17. 1844. (Fig. 2D)
   ≡ *Auliza campestris* (Lindl.) Brieger, Orchideen (ed. 3) 1/A(9): 547. 1977. *comb. inv.*

= *Epidendrum blandum* Kraenzl., Kongl. Svenska Vetensk.-Acad. Handl., n.s. 46(10): 58. 1911.
= *Pseudolaelia lyman-smithii* R.J.V. Alves., Folia Geobot. Phytotaxa. 27: 191. 1992.

Diagnosis: Terrestrial or rupicolous. Stems swollen forming ovoid pseudobulbs, unbranched. Leaves elliptical, plane. Inflorescence 10.6–36.5 cm long, simple, glabrous; peduncle 7–20 cm long, cylindrical; rachis 3.6–16.5 cm long. Flowers 9–27 per inflorescence, resupinate, lilac; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals oblanceolate; petals oblanceolate; labellum 4-lobed, slightly concave, margin entire; column lilac. Fruits not seen.

Distribution: Endemic to Brazil (states of Espírito Santo, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais and São Paulo). In the study area, it occurs in the municipalities of Araguainha, Campo Verde and Chapada dos Guimarães (Fig. 3B).

Comments: Flowers between July and November. It is a distinctive species that is not similar to any other. It is superficially similar to pink flowered species of tge Oerstedella Group, but it is distinguished by its pseudobulbs (vs. terete stems). In the study area, it can be confused with *E. flexuosum* due to the pink flowers (Fig. 1), but differs by being terrestrial and rupicolous (*vs.* epiphytes), margin of the labellum entire (*vs.* denticulate) and swollen stems forming pseudobulbs (*vs.* cylindrical).

Examined material: Araguainha, Fazenda Ribeirão das pedras, 11.VIII.2012, *C.F Hall et al. 774* (SP 473759); Campo Verde, 08.XI.1997, *G. Hatschbach 66638* (ESA 098958); Ibidem, Rio Casca, 11.VIII.1997, *G. Hatschbach et al. 66638* (ALCB 68921, CGMS 63405, HUCS 25486, HUEFS 117329, SP 382522); Chapada dos Guimarães, pr. Bocca de Serra, 15.VII.1902, *G.O.A. Malme 2266* (S08-3346); Parque Nacional, São Jerônimo, 14.VIII.1998, *A.M. Amaral 730* (UFMT 18407); Ibidem, 04.X.2006, *O.S. Nasser 396* (UFMT 36297); Ibidem, 04.X.2005, *O.S. Nasser 394* (UFMT 36296); Ibidem, 04.X.2005, *O.S. Nasser 395* (UFMT 36295).

5. *Epidendrum carpophorum* Barb. Rodr., Gen. Sp. Orchid. 2: 148. 1.882. (Fig. 2E)
= *Epidendrum ancipitinocturnum* Hágsater & J.M.P.Cordeiro., Icon. Orchid. 18(1): t. 1803. 2020.
= *Epidendrum tridens* var. *briegeri* I.Bock, Orchidee (Hamburg) 33: 157. 1982.
= *Epidendrum prancei* Hágsater & L.Sánchez., Icon. Orchid. 15(2): t. 1594. 2016.

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves elliptical, plane. Inflorescence 1.0–2.0 cm long, simple, glabrous; peduncle 0.8–1.0 cm long, cylindrical; rachis 0.2–1.2 cm long. Flowers 1–2 per inflorescence, resupinate, yellowish, beige or greenish; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical; petals linear-elliptical; labellum 3-lobed, plane, margin entire; column white. Fruits not seen.

Distribution: Bolivia, Colombia, French Guiana, Guyana, Suriname, Trinidad and Tobago, Venezuela and Brazil (states of Alagoas, Amazonas, Amapá, Bahia, Ceará, Espírito Santo, Maranhão, Mato Grosso, Minas Gerais, Pará, Paraíba, Paraná, Pernambuco, Rio de Janeiro, Rondônia, Roraima, Santa Catarina, São Paulo and Sergipe). In the study area it occurs in the municipalities of Alta Floresta, Apiacás, Aripuanã, Chapada dos Guimarães, Cláudia, Colíder, Guarantã do Norte, Itaúba, Itiquira, Juruena, Nova Canaã do Norte, Novo Mundo, Paranaíta, Ribeirão Cascalheira, Tabaporã, Tangará da Serra, Santa Cruz do Xingu, Sapezal and Sinop (Fig. 3C).

Comments: Flowers between February and December. It is part of the Nocturnum Group, but the limits among taxa in this group need further studies. Cytogenetic data provided evidence of autopolyploid speciation (Cordeiro et al. 2022), but the delimitation of most taxa is still poor. The most similar species in Brazil is *E. purpureocaulis* Essers & Sabin, but it can be distinguished by the acute lateral lobes of the lip (*vs.* acuminate). In the study area, it can be confused with *E. pareciense* due to the deeply 3-lobed labellum (Fig. 1, 6), but differs due to the elliptical leaves (*vs.* oblong), petals linear-elliptical (*vs.* elliptical) and median lobe of the labellum twice or more times longer than the lateral lobes (*vs.* slightly longer).

Examined material: Alta Floresta, PCH Cabeça-de-boi, área B1, margem esquerda, Floresta ombrófila, 26.V.2014, *C.R.A. Soares-Lopes et al.* (HERBAM 9687);

Apiacás, Margem esquerda do Rio Juruena, próximo a cachoeira de S. João da Barra, 07.VI.1977, *N. A. Rosa, 2078* (RB00250623); Aripuanã, Rio Juruena, Cachoeira de São João da Barra, 07.VI.1977, *N.A. Rosa 2078* (INPA 79091); Ibidem, Dardanelos, rio Aripuanã e salto de Dardanelos, 21.V.1973, *N. Saddi 839* (UFMT 41654); Ibidem, 10.VI.1974, *B.S. Pena 477* (IAN 141726); Chapada dos Guimarães, Trilha da gruta Aroe-jari e Lagoa Azul, Campo cerrado, 19.II.1997, *A.G Nave et al. 1089* (UEC 97604, RB01228135, ESA 034775, UFMT 32544); Ibidem, Área urbana, 10.VIII.2006, *A.M. Amaral 8* (UFMT 18408); Cuiabá, 20.II.1991, *I.V. Lima 17* (HEPH 7305); Ibidem, 23.I.1989, *A.E.H. Salles 1504A* (HEPH 6877); Cláudia, Supressão da vegetação do futuro reservatório da UHE Sinop, 13.III.2018, *D.C. Dias 371* (CNMT 7214); Ibidem, 01.III.2018, *D.C. Dias 368* (CNMT 7212); Colíder, Resgate da Flora da UHE Colíder, 13.X.2014, *L. Sardelli et al. 696* (MBM 403861); Ibidem, 31.III.2017, *M.E. Engels et al. 5095* (MBM 417242); Ibidem, 10.X.2014, *L.F. Sardelli et al. 693* (MBM 403853); Guarantã do Norte, Margem direita do rio Braço Sul**,** 27.II.1992, *M. Macêdo 3063* (INPA 172477); Itaúba, Floresta do Planalto dos Parecís, 21.I.2015, *M.E. Engels 2849* (RB01381640); Ibidem, Resgate da Flora da UHE Colíder, 26.VIII.2014, *M.E. Engels 2565* (MBM 403777); Ibidem, 26.II.2015, *M.E. Engels 6662831BCopel6* (HERBAM 12913); Ibidem, 29.V.2017, *M.E. Engels et al. 5611* (MBM 417230); Ibidem, 08.IV.2016, *M.E. Engels & B.K. Canestraro 4332* (TANG 6168); Ibidem, 09.V.2017, *M.E. Engels et al. 5286* (MBM 417236); Ibidem, 26.VIII.2014 M.E. *Engels 352565Copel3* (HERBAM 12914); Ibidem, 13.VII.2008, *R. Dias Melo 509* (RB00570822); Ibidem, 03.V.2015, *M.E. Engels 3852* (RB01166636, MBM 417225); Ibidem, 08.IV.2016, M.E. Engels 4332 (RB01340581); Ibidem, 06.II.2015, *L.H. Berticelli 7242* (HERBAM 21992); Ibidem, 03.IV.2015, *A.Z. Bronholi et al.* (MBM 404590); Ibidem, 16.V.2017, *M.E. Engels et al. 5325* (MBM 417237); Ibidem, 05.IV.2017, *A.S. Bezerra et al.* (MBM 417240); Ibidem, 08.IV.2016, *M.E. Engels & B.K. Canestraro 4332* (MBM 417247); Ibidem, 26.VIII.2014, *M.E. Engels 2565* (CNMT 1914); Ibidem, 23.V.2017, *M.E. Engels et al* (RB01381462); Ibidem, 26.II.2015, *M.E. Engels 2831* (MBM 403735, MBM403735, TANG 5014, RB01175543, TANG 5014, CNMT 1479, HCF000024962, HCF 24470, CNMT 9081); Itiquira, Rio Corrente, 01.II.1974, *G. Hatschbach, 33789* (MBM 30881); Juruena, 01.V.1909, *F.C. Hoehne 1902* (R 2805); Nova Canaã do Norte, Resgate da Flora da UHE Colíder, Estrada de acesso a UHE Colíder, 12.IV.2016, *M.E. Engels & B.K. Canestraro 4305* (MBM 417246); Novo Mundo, Parque Estadual Cristalino, 07.II.2008, *D.C. Zappi et al. 1068* (HERBAM 2232); Ibidem, 18.III.2007, *D. Sasaki et al. 1500* (HERBAM 1383, INPA 222933); Ibidem, 02.II.2008, *D. Sasaki et al. 2147* (SPF 207013, HERBAM 1810), Ibidem, 15.XII.2024, *E. Pessoa et al. 1391* (UFMT); Paranaíta, Afloramento Rochoso, 23.IV.2012, *C.R.A. Soares et al. 1246112* (HERBAM 8198); Ibidem, UHE São Manoel, 16.XI.2011, C.R.A. Soares et al. 2053 (HERBAM 4350); Ibidem, 14.VI.2012, *C.R.A. Soares et al. 26677* (HERBAM 8625); Ibidem, 16.XI.2011, *C.R.A. Soares et al. 2288* (HERBAM 4455); Ibidem, 23.IV.2012, *C.R.A. Soares et al. 1206108* (HERBAM 8194); Ribeirão Cascalheira, Base Camp, 16km ao N de Base Camp., 18.V.1968, *R.R. Santos R1447* (UB 102962, UB0018412); Tabaporã, Fazenda Crestani, 21.V.2011, *J. Dambroz 60* (CNMT 3127); Tangará da Serra, Epifitário Catasetum UNEMAT, 27.IV.2012, *C.A. Silva 502* (TANG 1769); Santa Cruz do Xingu, Parque Estadual do Xingu, 30.VII.2020, *D.R. Giacoppini et al. 1096* (CNMT 10254); Ibidem, 08.III.2011, *C.R.A. Soares 3191* (CESJ 61243, HERBAM 2800, HUEFS 190429); Sapezal, Cabeceira Rio Papagaio - Reserva Bieocatinga, 09.XII.1995, *R. Godinho 142* (INPA 216755, UFMT 18327); Ibidem, Aldeia Utiariti. Salto do Rio Papagaio, 19.VIII.1996, *R. Godinho & M. Macedo 234* (UFMT 15394); Ibidem, 20.III.1996, *R. Godinho 284* (UFMT 15377); Ibidem, 28.XII.1996, *R. Godinho 246* (UFMT 15384); Sinop, Supressão da vegetação do futuro reservatório da UHE Sinop, 17.X.2017, *D.C. Dias 294* (CNMT 7203).

6. *Epidendrum coronatum* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil.: 242. 1798. (Fig. 2F)
   = *Epidendrum amazonicum* Schltr., Beih. Bot. Centralbl. 42(2): 78. 1925.
   = *Epidendrum benignum* Ames., Schedul. Orchid. 2: 26. 1923.
   = *Epidendrum callobotrys* Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. n.s. 46(10): 60. 1911. ***syn. nov.***
   = *Epidendrum compositum* Vell., Fl. Flumin. Icon. 9: t. 39. 1831.
   = *Epidendrum moyobambae* Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 185. 1905.

= *Epidendrum subpatens* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 40. 1922.
= *Epidendrum sulphuroleucum* Barb.Rodr., Gen. Sp. Orchid. 1: 56. 1877.

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves oblong-elliptical, plane. Inflorescence 10.5–32.0 cm long, simple, glabrous; peduncle 1.5–7.0 cm long, cylindrical; rachis 9.0–25.0 cm long. Flowers 4–35 per inflorescence, resupinate, beige; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals oblanceolate; petals oblanceolate; labellum 4-lobed, slightly convex, margin entire; column beige. Fruits not seen.

Distribution: Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Panama, Peru, Suriname, Trinidad and Tobago, Venezuela, and Brazil (states of Acre, Amazonas, Bahia, Ceará, Espírito Santo, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Paraná, Rio de Janeiro, and Roraima). In the study area, it occurs in the municipalities of Chapada dos Guimarães, Colíder, Itaúba, Nova Canaã do Norte and Tangará da Serra (Fig. 3B).

Comments: Flowers in August and October. It is part of the Coronatum Group, and the most similar species in Brazil is *E. ammophilum* Barb. Rodr. It is easily distinguished by the 4-lobed lip (*vs.* 3-lobed). In the study area it can be confused with *E. cristatum* due to the vegetative morphology, but differs due to the beige flowers (*vs.* green or yellow with brown spots), oblanceolate petals (*vs.* linear-oblong) and by the labellum with entire margin (*vs.* fringed). *Epidendrum callobotrys* was described based in a specimen collected by Malme at Chapada dos Guimarães, but the referred specimen corresponds to the species that we treat here as *E. coronatum*. Thus, we hereby propose synonymizing it.

Examined material: Chapada dos Guimarães, Santa Anna da Chapada, s.d., *G.O.A. Malme s.n.* (S90/143); Colíder, resgate de FLORA da UHE Colíder, 20.X.2014, *M.E Engels 982628Copel9* (HERBAM 12908); Itaúba, resgate da Flora da UHE Colíder, 12.X.2016, *M.E. Engels 4845* (MBM 417215); Nova Canaã do Norte, resgate de FLORA da UHE Colíder, 08.X.2014, *M.E. Engels 2945* (MBM 417216, R B01341375, TANG 5654); Tangara da Serra, 16.VIII.2016, *C.A Silva 575* (TANG 3094).

7. *Epidendrum cristatum* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil.: 243. 1798. (Fig. 2G)
= *Epidendrum alexandri* Schltr., Anexos Mem. Inst. Butantan, Secc. Bot. 1: 60. 1922.
= *Epidendrum bathyschistum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6: 36. 1919.
= *Epidendrum calliferum* Lem., Jard. Fleur. 4(Misc.): 65. 1845.
= *Epidendrum hexadactylum* Barb.Rodr., Gen. Sp. Orchid. 1: 56. 1877.
= *Epidendrum longovarium* Barb.Rodr., Gen. Sp. Orchid. 1: 57. 1877.
= *Epidendrum raniferum* Lindl., Gen. Sp. Orchid. Pl.: 109. 1831.
= *Epidendrum validum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 95. 1921.

Diagnosis: Epiphytic, terrestrial or rupicolous. Stems cylindrical, unbranched. Leaves oblong-elliptical, plane. Inflorescence 23.5–27.5 cm long, simple, glabrous; peduncle 13–13.5 cm long, cylindrical; rachis 10.5–14 cm long. Flowers 17–30 per inflorescence, resupinate, green or yellow with brown spots; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical-lanceolate; petals linear-oblong; labellum 4-lobed, slightly convex, margin fringed. Fruits not seen.

Distribution: Belize, Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Guiana, Honduras, Mexico, Nicaragua, Panama, Peru, Suriname, Trinidad and Tobago, Venezuela, and Brazil (states of Amazonas, Bahia, Espírito Santo, Mato Grosso, Minas Gerais, Pará, Paraná, Rio de Janeiro, Santa Catarina, and *São Paulo).* In the study area, it occurs in the municipalities of Colíder and Itaúba (Fig. 3D).

Comments: Flowers between October and November. It is part of the Cristatum Group, and the most similar species in Brazil is *E. warrasii* Pabst. It is easily distinguished by the 4-lobed lip (*vs.* 3-lobed). In the study area, it can be confused with *E. coronatum* due to the vegetative morphology, but it differs by the green flowers or yellow with brown spots (*vs.* beige) and margin of the labellum fringed (*vs.* entire).

Examined material: Colíder, resgate de FLORA da UHE Colíder, 22.X.2019, *C.A. Silva 637* (TANG 6946); Itaúba, resgate de flora da UHE Colíder, 12.X.2016, *M.E. Engels 4841* (MBM 417217); Ibidem, 02.XI.2015, *M.E. Engels 3752* (MBM 403743).

8. *Epidendrum dendrobioides* Thunb. Pl. Bras. 2: 17. 1818. (Figure in Santos & Silva 2020)
   = *Epidendrum aquaticum* Lindl., Ann. Mag. Nat. Hist. 12: 39. 1843.
   = *Epidendrum carnosum* Lindl., J. Bot. (Hooker) 3: 87. 1841.
   = *Epidendrum carnosum* var. *nutans* Cogn., in Martius (ed.), Fl. Bras. 3(5): 158. 1898.
   = *Epidendrum durum* var. *parviflorum*, Fol. Orchid. 4: 90. 1853.
   = *Epidendrum wels-windischii* Pabst., Bradea 2(10): 50. 1975.

Diagnosis: Terrestrial or rupicolous. Stems cylindrical, unbranched. Leaves linear-elliptical to linear-oblong, plane. Inflorescence 5.8–13.6 cm long, simple or compound, glabrous; peduncle 0.3–1.0 cm long, cylindrical; rachis 4.5–11.6 cm long. Flowers 6–16 per inflorescence, non-resupinate, yellow; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical-ovate; petals linear-elliptical; labellum 3-lobed, concave-cucullate, 3-lobed, margin entire; column yellow. Fruits not seen.

Distribution: Endemic to Brazil (states of Bahia, Espírito Santo, Goiás, Mato Grosso do Sul, Mato Grosso, Minas Gerais, Rio de Janeiro, São Paulo, Tocantins, and the Distrito Federal). In the study area, it occurs in the municipalities of Araguainha, Campo Novo do Parecis and Cuiabá (Fig. 3D).

Comments: Flowers between December and January. It is part of the Aquaticum Group, but the delimitation of most taxa of this group is still poor. We follow a wider circumscription for this taxon that includes all extra-amazonian terrestrial-rupicolous populations of this group under *E. dendrobioides*. The most similar species in Brazil is *E. alsum* Ridl. ex Oliv., but it can be distinguished by the erect inflorescences (*vs.* pendulous). In the study area it can be distinguished from the remaining species by its concave-cucullate labellum and the ecological preference for waterlogged soils.

Examined material: Araguainha, 06.I.2011, *R.D. Sartin et al. 164* (UFG 47597); Campo Novo do Parecis, Aldeia Crauaré, 28.XII.1996, *R. Godinho 245* (CEN 30713, UFMT 15407); Cuiabá, 01.XI.1914, *J.G Kuhlmann* (R 35860).

9. *Epidendrum densiflorum* Hook., Bot. Mag. 66: pl. 3791. 1840. (Fig. 2H)
   ≡ *Epidendrum polyanthum* var. *densiflorum* (Hook.) Lindl., Fol. Orchid. 3: 60. 1853.
   = *Epidendrum andres-johnsonii* Hágsater & E.Santiago, Icon. Orchid. 14: t. 1408. 2013.
   = *Epidendrum brachythyrsus* Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. 46(10): 59. 1911.
   = *Epidendrum dipus* Lindl., Edwards's Bot. Reg. 31: t. 4. 1845.
   = *Epidendrum floribundum* var. *lilacinum* Rchb.f., Linnaea 22: 840. 1849.
   = *Epidendrum nutans* var. *dipus* (Lindl.) Lindl., Fol. Orchid. 3: 56. 1853.
   = *Epidendrum rubrocinctum* Lindl., Edwards's Bot. Reg. 29(Misc.): 9. 1843.
   = *Epidendrum silvae* Hágsater & V.P.Castro, Icon. Orchid. 3: t. 382. 1999.

Diagnosis: Epiphytic or rupicolous. Stems cylindrical, unbranched. Leaves elliptical, plane. Inflorescence 10.5–23.0 cm long, compound, glabrous; peduncle 2.5–4.0 cm long, cylindrical; rachis 8.0–19.0 cm long. Flowers 10–81 per inflorescence, resupinate, green and white; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals oblanceolate; petals linear-oblanceolate; labellum 4-lobed, slightly convex, margin entire; column whitish green. Fruits not seen.

Distribution: Argentina, Paraguay and Brazil (states of Bahia, Espírito Santo, Goiás, Mato Grosso do Sul, Mato Grosso, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo, Tocantins, and the Distrito Federal). In the study area, it occurs in the municipalities of Alto Araguaia, Araguainha, Barra do Garças, Cáceres, Campo Novo do Parecis, Chapada dos Guimarães, Ribeirão Cascalheira, Reserva do Cabaçal, Salto do Céu and Tangara da Serra (Fig. 3D).

Comments: Flowers between March and December. It is part of the Pseudepidendrum Group, and the most similar species in Brazil is *E. hassleri* Cogn., but it can be distinguished by the absence of an isthmus of the lip (*vs.* isthmus present). In the study area, it can be confused with *E. amblostomoides* due to the light colors of the flowers and compound inflorescences (Fig. 1), but it can be distinguished by the presence of cylindrical stems (*vs*. pseudobulbs), 4-lobed labellum (*vs.* 3-lobed) with entire margin (*vs.* erose).

Examined material: Alto Araguaia, Ribeirão Claro, 22.IX.1974, *G. Hatschbach & R. Kummrow 35065* (MBM 32086); Araguainha, Fazenda Ribeirão das pedras, 11.VIII.2012, *C.F Hall et al. 775* (SP 473757); Barra do Garças, Road Chavantina, 15.X.1964, *G.T Prance 59427* (K000878437, NY 418345, UB 87188, UB0018381); Cáceres, Assentamento Laranjeira I, 10.IV.2014, *M.A Carniello & T.M Santos 4960* (HPAN 3385); Campo Novo do Parecis, Aldeia Uauari, 28.XII.1996, *R. Godinho 245* (CEN 00030713); Chapada dos Guimarães, UHE Manso, 16.IX.1999, *M. Macedo et al. 7093* (UFMT 21827); Ribeirão Cascalheira, c. 2 km NE Base Camp, 22.X.1968, *R. Harley & Souza 10753* (P 00411545); Reserva do Cabaçal, Fazenda Três Rios, 07.III.2002, *U.M. Resende & V. Kinupp 1768* (CGMS 8972); Salto do Céu, Arredores da cidade, 12.XII.1997, *A.M. Amaral 13* (UFMT 18387); Ibidem, 10.X.1998, *E.J. Anjos-Silva dos 329* (UFMT 18369); Santa Cruz do Xingu, Parque Estadual do Xingu, 01.II.2023, *M.O. Córdova & M. Penhacek 335* (CNMT); Tangara da Serra, Epifitario Catasetum, 26.VII.2013, C.A Silva (TANG 2074).

10. *Epidendrum flexuosum* G. Mey., Prim. Fl. Esseq.: 260. 1818. (Fig. 2I)
    = *Epidendrum buenavistae* Kraenzl., Repert. Spec. Nov. Regni Veg. 6: 19. 1908.
    = *Epidendrum imantophyllum* Lindl., Gen. Sp. Orchid. Pl.: 106. 1831.
    = *Epidendrum lorifolium* Schltr., Repert. Spec. Nov. Regni Veg. 17: 35. 1922.
    = *Epidendrum palpigerum* Rchb.f., Gard. Chron. 12: 40. 1879.
    = *Epidendrum persimile* Schltr., Repert. Spec. Nov. Regni Veg. 7: 142. 1920.

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves oblong-elliptical, plane. Inflorescence 7.5–20.5 cm long, simple, glabrous; peduncle 3.5–7.0 cm long, cylindrical; rachis 4.0–13.5 cm long. Flowers 13–71 per inflorescence, non-resupinate, pinkish; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical-oblanceolate; petals elliptical-oblanceolate; labellum obscurely 3-lobed, slightly concave, margin denticulate; column pinkish. Fruits not seen.

Distribution: Belize, Bolivia, Colombia, Costa Rica, Ecuador, French Guiana, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Peru, Suriname, Trinidad and Tobago, Venezuela and Brazil (states of Acre, Alagoas, Amazonas, Amapá, Bahia, Espírito Santo, Mato Grosso do Sul, Mato Grosso, Maranhão, Minas Gerais, Pará, Paraíba, Pernambuco, Rio de Janeiro, Rio Grande do Norte, Rondônia, Roraima and Tocantins). In the study area, it occurs in the municipalities of Alto Xingú, Aripuanã, Brasnorte, Cáceres, Campo Novo do Parecis, Colíder, Juruena, Nova Canaã do Norte, Novo Mundo, Paranaíta, Pontes de Lacerda, Ribeirão Cascalheira, Santa Carmem, Sinop and Xavantina (Fig. 5A).

Comments: Flowers between July and October. It is part of the Secundum Group, and among the species that occur in Brazil it is superficially similar to *E. secundum* Jacq., but it is easily distinguished by the epiphytic growth (*vs*. terrestrial). In the study area, it can be confused with *E. campestre* due to the pinkish flowers (Fig. 1) but can be differentiated by the epiphytic habit (*vs.* terrestrial), cylindrical stems (*vs.* pseudobulbs), and denticulate labellum margin (*vs.* undulate).

Examined material: Alto Xingú, 01.VIII.1949, *B.H. Sick 490* (RB00250528); Aripuanã, Arredores da Serra Morena, 09.VII.1997, *V.C. Souza et al. 18460* (UFMT 32542); Ibidem, 07.IX.1997, *V.C. Souza et al. 18460* (ESA 044761, RB 01228146); Brasnorte, Igarapé Chuini, 15.VII.1977, *M.G. da Silva 3339* (INPA 127722, NY 418256); Cáceres, 01.IX.1908, *F.C. Hoehne 977* (R 2830); Campo Novo do Parecis, Margem do córrego da Aldeia Perdiz, 23.VIII.1996, *R. Godinho & M. Macedo 236 (*UFMT 15385); Colíder, resgate da FLORA da UHE Colíder, 23.IX.2014, *L.F. Sardelli et al. s.n.* (CNMT

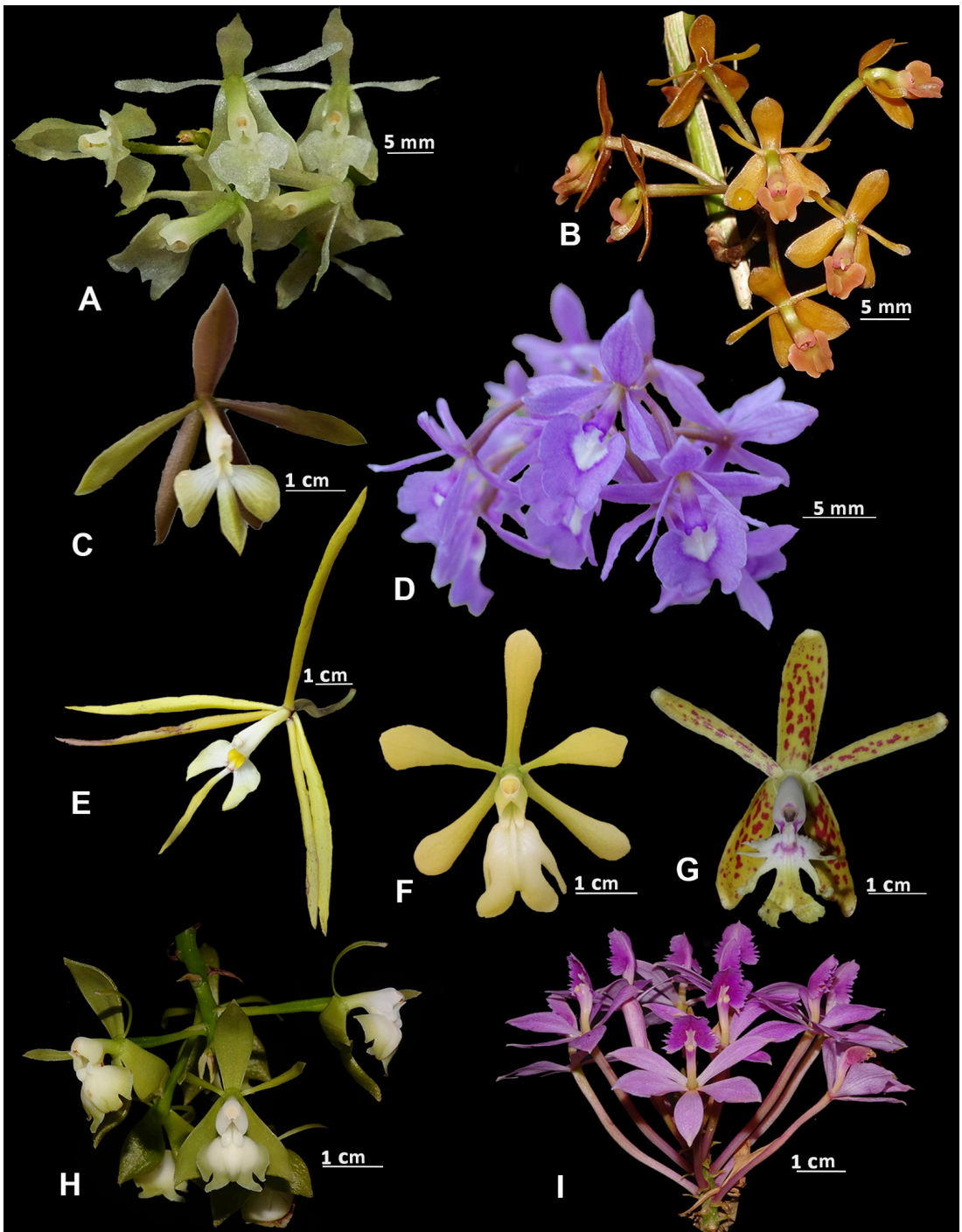

Figure 2. Species of *Epidendrum* that occur in Mato Grosso, Brazil. **A**. *Epidendrum amblostomoides*. **B**. *Epidendrum anceps*. **C**. *Epidendrum bahiense*. **D**. *Epidendrum campestre*. **E**. *Epidendrum carpophorum*. **F**. *Epidendrum coronatum*. **G**. *Epidendrum cristatum*. **H**. *Epidendrum densiflorum*. **I**. *Epidendrum flexuosum*. Photos by E. Pessoa (A), M. Engels (B, F, G, H, I), A. Koch (C), and A. Benelli (D, E).

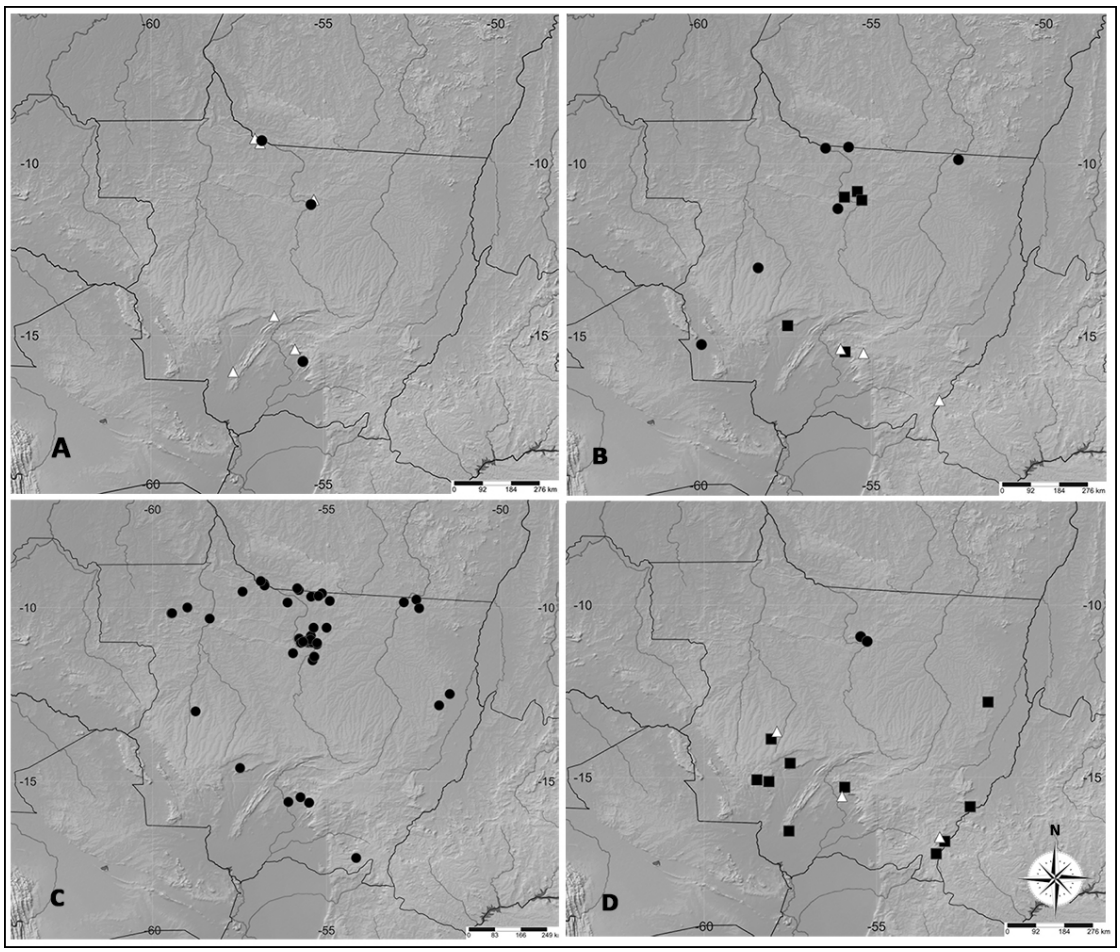

FIGURE 3. Geographical distribution of: A. *Epidendrum amblostomoides* (black circle) and *E. anceps* (white triangle). B. *Epidendrum bahiense* (black circle), *E. campestre* (white triangle) and *E. coronatum* (black square). C. *Epidendrum carpophorum* (black circle). D. *Epidendrum cristatum* (black circle), *E. dendrobioides* (white triangle) and *E. densiflorum* (black square).

1901, MBM 403847, TANG 3480); Ibidem, 08.IX.2014, *A.Z Bronholi et al. s.n* (CNMT 7715, MBM 402849, RB 01086591, TANG 2709); Ibidem, 08.X.2014, *M.E Engels 1542684Copel1* (HERBAM 12910); Ibidem, 08.X.2014 *M.E. Engels 2684* (MBM 403760); Ibidem, 25.IX.2014, *L.F. Sardelli et al.* 653 (MBM 403855); Ibidem, 23.VII.2014, *L. Sardelli et al. s.n.* (RB 01135699); Itaúba, resgate da Flora da UHE Colíder, 03.X.2014, *A.Z Bronholi et al. s.n. (*MBM 402846, TANG 2694); Ibidem, 04.VII.2017, *M.E. Engels & J.A.O. Freitas 5721* (HCF 000025129, MBM 417239, RB 01378892, TANG 4933); Ibidem, 27.VII.2015, *P.V. Oliveira et al.* (MBM 417248); Ibidem, 28.VII.2016, *M.E. Engels & A.S. Bezerra 4714* (MBM 417234, TANG 3875); Ibidem, 14.X.2014, *M.E. Engels* 2669 (MBM 417223); Ibidem, resgate de FLORA da Linha de Transmissão, 04.VII.2017, *M.E. Engels 5721* (HCF 24634); Juruena, Projeto RADAM, 01.IX.1974, *N.A. Rosa 206* (IAN 145920, SP 197647); Nova Canaã do Norte, Lote A de supressão, 18.X.2014, *M.E. Engels 2650 (*MBM 398603, TANG 2339); Novo Mundo, Parque Estadual Cristalino, 01.VI.2007, *D. Sasaki et al* s.n. (HERBAM 1511); Paranaíta, Terra Firme, 11.X.2011, *C.R.A Soares et al. 044150* (HERBAM 6866); Pontes de Lacerda, Sararé, 06.VII.1978, *J. M. Pires 16472* (HAMAB, INPA 127627, NY 418257); Ribeirão Cascalheira, Pelo bloco 2 do Brejo, 10.VIII.1968, *G. C. G. Argent 6641* (K 000878071, NY 1031716); Ibidem, 10.VIII.1968, *G.C. Argent 6641* (K000878071);

Santa Carmem, Margem rio Arraias, 00.IX.1996, *R. Godinho 237* (CEN 30710); Ibidem, 11.VII.1995, *M. Macêdo 4322* (INPA 197050); Ibidem, 27.VII.1995, *M. Macedo 4425* (CEN 30716, UFMT 15390); Sinop, Rio Celeste, 18.IX.1985, *W.W. Thomas 3861* (INPA 151334, NY 418258); Ibidem, margem direita do rio Teles Pires, 31.VIII.2017, *D.C. Dias 315* (UFMT 43680); Xavantina, Pelo bloco 2 do Brejo, 10.VIII.1968, *G. C. G. Argent & P.W. Richards 6641* (IAN 145274, UB 108253).

11. *Epidendrum macrocarpum* Rich., Actes Soc. Hist. Nat. Paris 1(1): 112. 1792. (Fig. 4A)
    = *Epidendrum incisum* Vell., Fl. Flumin. Icon 9: t.18. 1831.
    = *Epidendrum pitanga* Campacci., Colet. Orquídeas Brasil 6: 202. 2008.
    = *Epidendrum schomburgkii* Lindl., Edwards's Bot. Reg. 24(Misc.): 15. 1838.
    = *Epidendrum splendens* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 93. 1921.

Diagnosis: Epiphytic. Strems cylindrical, unbranched. Leaves oblong-elliptical, plane. Inflorescence 10.0–27.0 cm long, simple, glabrous; peduncle 6.0–17.0 cm long, cylindrical; rachis 4.0–10.0 cm long. Flowers 3–26 per inflorescence, resupinate, red or orange; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical; petals elliptical; labellum 3-lobed, plane, margin denticulate; column orange. Fruits not seen.

Distribution: Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, Trinidad and Tobago, Venezuela and Brazil (states of Alagoas, Amazonas, Amapá, Bahia, Mato Grosso, Maranhão, Pará, Paraíba, Pernambuco, Rio de Janeiro and Roraima). In the study area, it occurs in the municipalities of Cotriguaçu, Itaúba, Tangará da Serra and Santa Cruz do Xingu (Fig. 5A).

Comments: Flowers from May to August. It is part of the Secundum Group, and among the species that occur in Brazil it is similar to *E. cinnabarinum* Salzm. ex Lindl., but it is easily distinguished by the epiphytic growth (*vs*. terrestrial). In the study area it can be confused with *E. flexuosum* due to the flowers grouped at the apex of the long-pedunculate inflorescence, but it can be easily distinguished by the red flowers (*vs.* pinkish) and markedly 3-lobed labellum (*vs.* obscurely 3-lobed).

Examined material: Cotriguaçu, Parque Nacional do Juruena, 18.V.2018, *P. Labiak et al. 7154* (UPCB 101546); Itaúba, Resgate de flora da UHE Colíder, 09.V.2015, *M.E. Engels 3820* (TANG 6878); Ibidem, 28.VII.2016, *M.E. Engels & A.S. Bezerra 4719* (MBM 417233); Tangará da Serra, Epifitário Catasetum UNEMAT, 04.VIII.2011, *A.P. Santos 5* (TANG 1771); Santa Cruz do Xingu, Parque Estadual do Xingu, 01.VIII.2020, *D.R. Giacoppini & G. Almeida 1208* (CNMT 10359).

12. *Epidendrum myrmecophorum* Barb. Rodr., Vellozia 1: 123. 1888. (Fig. 4B)
    = *Epidendrum huebneri* f. *denticulatum* (C.Schweinf.) C.Schweinf., Mem. New York Bot. Gard. 14(3): 137. 1967.
    = *Epidendrum rectopedunculatum* C.Schweinf. in Bot. Mus. Leafl. 11: 110. 1943.
    = *Epidendrum rectopedunculatum* f. *denticulatum* C.Schweinf., Bot. Mus. Leafl. 20: 18. 1962.
    = *Epidendrum spilotum* Garay & Dunst., Venez. Orchids Ill. 6: 144. 1976.

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves lanceolate, plane. Inflorescence 5.0–12.5 cm long, simple, glabrous; peduncle 4.0–10.0 cm long, cylindrical; rachis 1.0–2.5 cm long. Flowers 6–10 per inflorescence, resupinate, green or beige with brown spots; pedicellate ovary with distinct vesicle in the ventral face, exposed; sepals elliptical-oblanceolate; petals linear-elliptical; labellum 4-lobed, slightly convex, margin entire; column green or beige. Fruits not seen.

Distribution: Bolivia, Colombia, Ecuador, Peru, Venezuela and Brazil (states of Amazonas, Mato Grosso, Pará and Roraima). In the study area, it occurs in the municipalities of Itaúba, Cotriguaçu, Ribeirão Cascalheira and Tangará da Serra (Fig. 5B).

Comments: Flowers in October. It is part of the Smaragdinum Group, and among the species that occur in Brazil it is similar to *E. orchidiflorum* Salzm. ex Lindl., but it is easily distinguished by the epiphytic growth (*vs*. terrestrial). In the study area, it can be confused with *E. smaragdinum* by the leaf shape, but it differs by the longer inflorescence (≥ 5.0 *vs*. ≤4.5 cm long) and 4-lobed labellum (*vs.* 3-lobed).

Examined material: Itaúba, Resgate da Flora da UHE Colíder, 12.X.2016, *M.E. Engels 4846* (MBM 417218); Ribeirão Cascalheira, Acampamento Base da Expedição, 22.X.1968*, R.M. Harley & R. Souza 10753* (IAN 132015, K 000878120, MO 1106243, MO 2821550, P 00411545); Tangará da Serra, Pedreira Pedremat, 04.X.2016, *C.A. Silva 581 (*TANG 3281).

13. *Epidendrum pareciense* J.M.P.Cordeiro, L.P.Felix & Hágsater, Botany (Ottawa) 100(5): 416. 2022. (Fig. 4C)

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves oblong, plane. Inflorescence 0.7–1.7 cm long, simple, glabrous; peduncle 0.5–1.2 cm long, cylindrical; rachis 0.2–0.5 cm long. Flowers 1 per inflorescence, resupinate, yellowish or green; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical; petals elliptical; labellum 3-lobed, plane, margin entire; column white. Fruits not seen.

Distribution: Endemic to Brazil (states of Mato Grosso and Rondônia). In the study area, it occurs in the municipalities of Colíder, Comodoro, Itaúba and Novo Mundo (Fig. 5B).

Comments: Flowers from January to August. It is part of the Nocturnum Group, and among the species of this group in Brazil it can be confused with *E. carpophorum*, that occur in the study area, due to the deeply 3-lobed labellum (Fig. 1, 6) but differs by the oblong leaves (*vs.* elliptical), elliptical petals (*vs.* linear-elliptical), and median lobe of the labellum slightly longer than the lateral lobes (*vs.* twice or more times longer).

Examined material: Colíder, Resgate da Flora da UHE Colíder, 21.I.2015, *M.E. Engels 2849* (MBM 403765); Comodoro, Rio Pardo, 26.IV.2017, *L. P. Felix & E. M. Almeida 16382* (EAN 23246); Ibidem, Reserva das Nascentes do Abastecimento, 29.IV.2017, *L. P. Felix 16435* (EAN 26081); Itaúba, Resgate da Flora da UHE Colíder, 29.V.2017, *M.E. Engels et al. 5606* (MBM 417228); Ibidem, 23.V.2017, *M.E. Engels et al. 5497* (MBM 417229); Ibidem, 22.III.2017, *M.E. Engels et al. 5415* (MBM 417243); Ibidem, 03.V.2015, *M.E. Engels 3852* (TANG 5555); Ibidem, 26.VIII.2014, *M.E. Engels 2565* (TANG 5004); Novo Mundo, Parque Estadual do Cristalino, 18.III.2007, *D. Sasaki et al. 1500* (SPF 207573).

14. *Epidendrum rigidum* Jacq., Enum. Syst. Pl.: 29. 1760. (Fig. 4D)
    ≡ *Spathiger rigidus* (Jacq.) Small, Fl. Miami: 55. 1913.
    = *Epidendrum cardiophorum* Schltr., Repert. Spec. Nov. Regni Veg. 9: 214. 1911.
    = *Epidendrum pium* Rchb.f. & Warm. in H.G.Reichenbach, Otia Bot. Hamburg.: 92. 1881.

Diagnosis: Epiphytic. Stems cylindrical, unbranched. Leaves oblong-elliptical, plane. Inflorescence 3.0–8.8 cm long, simple, glabrous; peduncle 0.5–1.3 cm long, cylindrical; rachis 2.5–7.5 cm long. Flowers 3–9 per inflorescence, non-resupinate, green; pedicellate ovary without distinct vesicle in the ventral face, covered by floral bracts; sepals oval-lanceolate; petals linear; labellum sub-orbicular, entire, plane, margin entire; column green. Fruits not seen.

Distribution: Argentina, Bolivia, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, French Guiana, Guyana, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Puerto Rico, Suriname, Trinidad and Tobago, Venezuela, and Brazil (states of Acre, Amazonas, Amapá, Alagoas, Bahia, Ceará, Espírito Santo, Goiás, Mato Grosso do Sul, Mato Grosso, Maranhão, Minas Gerais, Paraíba, Pará, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Rondônia, Roraima, Santa Catarina, Sergipe and Tocantins). In the study area, it occurs in the municipalities of Alto Araguaia, Buriti, Colíder, Cuiabá, Itaúba, Nova Canaã do Norte and Paranaíta (Fig. 5B).

Comments: Flowers from April to November. It is part of the Spathiger Group, and the most similar species in Brazil is *E. amazonicoriifolium* Hágsater, but it can be distinguished by the sepals and petals < 1.0 cm long (*vs.* ≥ 1.5 cm). In the study area, it can be confused with *E. sculptum* and *E. strobiliferum* due to the ovary partially or totally covered by floral bracts, but it can be differentiated by the unbranched stem (*vs*. branched).

Examined material: Alto Araguaia, Margens do rio Ariranha, 02.XI.2013*, J. Paula-Souza et al. 11480*

(ESA 132279); Buriti, 25.VI.1827, *C.L. Collenette 115* (K 000878138); Ibidem, 25.VI.1927, *C.L. Collenette 115 (*K 000878139); Colíder, Resgate de FLORA da UHE Colider, 18.IX.2014, *M.E. Engels 2866* (CNMT 1930, HCF 000025048, HCF 24553, MBM 403792, RB01176678, TANG 5016); Ibidem, 17.IX.2014, *A.Z. Bronholi* s.n. (MBM 402847); Cuiabá, Fazenda São Júlio IV, 15.VIII.2018, *C. Kreutz CK269* (UFMT 44233); Itaúba, Resgate de flora da UHE Colíder, 10.V.2015, *M.E. Engels 3870* (MBM 417224, TANG 3565); Nova Canaã do Norte, Resgate de flora da UHE Colíder, 15.IV.2015, *M.E. Engels 3201* (MBM 403809, TANG 5024); Paranaíta, Terra Firme, 16.IV.2012, *Soares* et al. *1026010* (HERBAM 8096); Ibidem, UHE São Manoel, 02.V.2017, *L.P. Zanzini 356* (HERBAM 17467); Ibidem, 15.V.2017, *C.Z. Pereira 66* (HERBAM 17122).

15. *Epidendrum sculptum* Rchb. f., Bonplandia (Hannover) 2(7): 89. 1854. (Figure in Klein & Piedade 2019)
    = *Epidendrum colonense* Ames., Schedul. Orchid. 1: 4. 1922.
    = *Epidendrum florijugum* Barb.Rodr., Gen. Sp. Orchid. 1: 57. 1877.

Diagnosis: Epiphytic. Stems cylindrical, branched. Leaves oblong, plane. Inflorescence 0.7–1.5 cm long, simple, glabrous; peduncle 0.2–0.5 cm long, cylindrical; rachis 0.5–1.0 cm long. Flowers 1–3 per inflorescence, non-resupinate, green or yellow; pedicellate ovary without distinct vesicle in the ventral face, covered by floral bracts; sepals oblong-lanceolate; petals oblong-elliptical; labellum 3-lobed, slightly concave, margin entire; column green or yellow. Fruits not seen.

Distribution: Belize, Bolivia, Colombia, Costa Rica, Ecuador, French Guiana, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Suriname, Venezuela and Brazil (states of Amazonas, Mato Grosso, Maranhão and Pará). In the study area, it occurs in the municipalities of Alta Floresta and Paranaíta (Fig. 5C).

Comments: Flowers between March and May. It is part of the Ramosum Group, and the most similar species in Brazil is *E. ramosum* Jacq., but it can be distinguished by the shorter inflorescence ≤ 1.5 cm (*vs.* > 2.0 cm). In the study area, it can be confused with *E. rigidum*, due to the ovary covered by floral bracts, but differs by the branched stem (*vs.* unbranched), and 3-lobed labellum (*vs*. entire).

Examined material: Alta Floresta, Área estrutural da UHE Salta Apiacás, 10.V.2014, *C.R.A. Soares-Lopes et al. 137501* (HERBAM 9543); Paranaíta, Floresta Ombrófila, 23.III.2012, *C.R.A. Soares* et al. *1835619* (HERBAM 8017).

16. *Epidendrum smaragdinum* Lindl., Edwards's Bot. Reg. 24: Misc. 32. 1838. (Fig. 4E)
    = *Epidendrum acrirachis* Pabst., Arq. Bot. Estado São Paulo 3: 123. 1955.
    = *Epidendrum geraldoi* Porto & Brade., Rodriguésia 1(2): 30. 1935.
    = *Epidendrum rudolfianum* Hoehne., Ind. Bibl. Pl. Col. Com. Rondon: 172. 1951.

Diagnosis: Epiphytic or terrestrial. Stems cylindrical, unbranched. Leaves lanceolate, plane. Inflorescence 3.5–4.5 cm long, simple, glabrous; peduncle 1.0–1.5 cm long, cylindrical; rachis 1.5–3.0 cm long. Flowers 6–11 per inflorescence, resupinate, beige or greenish; pedicellate ovary with distinct vesicle in the ventral face, exposed; sepals elliptical-oblanceolate; petals linear-oblanceolate; labellum 3-lobed, slightly convex, margin entire; column beige. Fruits not seen.

Distribution: Bolivia, Colombia, French Guiana, Guyana, Peru, Suriname, Venezuela and Brazil (states of Acre, Amazonas, Mato Grosso, Pará, Rondônia and Roraima). In the study area, it occurs in the municipalities of Colíder, Itaúba, Juruena, Sapezal, Santa Carmem and Sinop (Fig. 5C).

Comments: Flowers from September to December. It is part of the Smaragdinum Group, and among the species that occur in Brazil it is similar to *E. hombersleyi* Summerh., but it is easily distinguished by the 3-lobed lip (*vs*. entire). In the study area, it can be confused with *E. myrmecophorum* due to the similarly lanceolate leaves but differs by the 3-lobed labellum (*vs.* 4-lobed) and by the absence of spots in the perianth (*vs.* with spots).

Examined material: Colíder, Resgate da Flora da UHE Colíder, 26.X.2015*, L.C. Ferneda Rocha 374 (*MBM

417244); Itaúba, Resgate da Flora da UHE Colíder, 12.XI.2014, *M.E. Engels 3063* (CNMT 1922, MBM 403784, RB 01175537, TANG 5020); Ibidem, 02.X.2014, *M.E. Engels* 2734 (MBM 417219); Ibidem, 02.X.2014, *M.E. Engels* 2736 (MBM 417220); Ibidem, 02.X.2014, *M.E. Engels 2042734Copel2* (HERBAM 15492*)*; Juruena, 01.XII.1911, F.C. Hoehne 5568 (R-Tipos 2807); Sapezal, Reserva Tirecatinga, 20.XI.1986, *R. Godinho & M. Macedo 230* (UFMT 15381); Santa Carmem, Margem do rio Arraias, 26.IX.1996, *R. Godinho & M. Macedo 239* (CEN 30711, UFMT 15406); Sinop, reservatório da UHE Sinop, 04.IX.2017, *D.C. Dias 321* (UFMT 43679).

17. *Epidendrum stiliferum* Dressler., Brittonia 19: 242. 1967. (Figure in Koch AK & Silva CA 2012)
= *Lanium subulatum* Rolfe., Bull. Misc. Inform. Kew 1896: 46. 1896.

Diagnosis: Epiphytic. Stems swollen forming ovoid pseudobulbs, unbranched. Leaves linear, cylindrical. Inflorescence 4.5–19.1 cm long, compound, pubescent; peduncle 2.0–8.4 cm long, cylindrical; rachis 2.5–10.6 cm long. Flowers 11–51 per inflorescence, non-resupinate, brown; pedicellate ovary without distinct vesicle in the ventral face, exposed; sepals elliptical; petals elliptical; labellum entire, slightly concave, margin entire; column brown. Fruits not seen.

Distribution: Bolivia, Ecuador, Peru and Brazil (states of Mato Grosso do Sul, Mato Grosso and Pará). In the study area, it occurs in the municipalities of Chapada dos Guimarães, Itaúba, Novo Mundo and Paranatinga (Fig. 5C).

Comments: Flowers from March to September. It is part of the Lanium Group, and among the species that occur in Brazil it is similar to *E. avicula* Lindl., but it is easily distinguished by the cylindrical leaves (*vs*. plane). This feature also distinguishes it from the other species of the study area.

Examined material: Chapada dos Guimarães, APM-Manso, 04.IV.2006, *A.B Petini 21* (UFMT 36345); Ibidem, U.H.E-Manso, 13.VIII.1999, *M. Macedo et al. 7089* (UFMT 21618); Ibidem, 09.III.2001, *M. Macedo & E. Gonçalves 7624* (UFMT 25225, UFMT 25234); Ibidem, 05.IX.2008, *A.E.H. Salles 1611* (HEPH 6994); Itaúba, Resgate da Flora da UHE Colíder, 10.VI.2016, *M.E. Engels 4555* (MBM 417232); Ibidem, 10.IX.2015, *M.E. Engels* 3699 (MBM 403836, TANG 4451); Novo Mundo, RPPN Cristalino, 30.IV.2017, *S.C. Gallo et al.* 143 (UB); Paranatinga, PCH Paranatinga II, 23.IV.2006, *A.B Petini 16* (UFMT 36336);Santo Antônio de Leverger, Caité, 07.IX.1996, *R. Godinho & M. Macedo 224* (UFMT).

18. *Epidendrum strobilicaule* Hágsater & Benelli., Icon. Orchid. 11: 200. 2008. (Fig. 4F)

Diagnosis: Epiphytic, terrestrial or rupicolous. Stems cylindrical, unbranched. Leaves elliptical-lanceolate, plane. Inflorescence 9.5–24.6 cm long, simple, glabrous; peduncle 7.0–20.0 cm long, cylindrical; rachis 2.5–4.6 cm long. Flowers 5–8 per inflorescence, resupinate, greenish-brown; pedicellate ovary with distinct vesicle in the ventral face, exposed; sepals elliptical-ovate; petals linear; labellum entire, slightly convex, margin entire; column green. Fruits not seen.

Distribution: Endemic to Brazil (state of Mato Grosso). In the study area it occurs in the municipalities of Chapada dos Guimarães and Cuiabá (Fig. 5D).

Comments: Flowers in May and August. It is part of the Physinga Group, and among the species that occur in Brazil it is similar to *E. acreense* (Brieger & Bicalho) Christenson, but it is easily distinguished by the presence of pseudobulbs (*vs*. pseudobulbs absent). In the study area it can be confused with *E. myrmecophorum* due to the presence of a vesicle in the ventral face of the labellum, but it can be differentiated by the elliptical-lanceolate leaves (*vs.* oblanceolate) and entire labellum (*vs.* 4-lobed).

Examined material: Chapada dos Guimarães, Portão do Inferno, 14.VII.2005, *A. Grade 2002* (UFMT 38353), ibidem., 10.V.1983, *J.C.C. Barcia et al.1466* (R 169826); Cuiabá, Serra de São Vicente, 01.V.2008, *M. Castro s.n.* (UFMT 45134); Ibidem, 10.VIII.2004, *M. Castro 201* (UFMT 38352); Serra de São Vicente, 01.V.2005, *M.D. Castro s.n. (*MO 101179482).

19. *Epidendrum strobiliferum* Rchb. f., Ned. Kruidk. Arch. 4(3): 333. 1859 [1858]. (Fig. 4G)
≡ *Spathiger strobilifer* (Rchb. f.) Small, Man. S.E.

Fl.: 390. 1933.
≡ *Spathiger strobiliferus* (Rchb. f.) Small, Man. S.E. Fl.: 390. 1933.
≡ *Epidendrum ramosum* House, Muhlenbergia 1: 129. 1906. *nom. illeg.*
≡ *Isochilus ramosus* Focke, Tijdschr. Wis-Natuurk. Wetensch. Eerste Kl. Kon. Ned. Inst. Wetensch. 4: 69. 1851. *nom. illeg.*
= *Epidendrum verecundum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 42. 1922.
= *Epidendrum mosenii* Barb.Rodr., Gen. Spec. Orchid. 2: 144. 1882. *nom. illeg.*

Diagnosis: Epiphytic. Stems cylindrical, branched. Leaves oblong-lanceolate, plane. Inflorescence 1.1–3.0 cm long, simple, glabrous; peduncle 0.1–1.0 cm long, cylindrical; rachis 1.0–2.0 cm long. Flowers 2–7 per inflorescence, non-resupinate, white; pedicellate ovary with distinct vesicle in the ventral face, covered with floral bracts; sepals lanceolate; petals linear; labellum entire, slightly concave, margin entire; column white.

Distribution: Belize, Bolivia, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, French Guiana, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Suriname, Trinidad and Tobago, United States (Florida), Venezuela, and Brazil (states of Acre, Amazonas, Amapá, Alagoas, Bahia, Ceará, Espírito Santo, Goiás, Mato Grosso do Sul, Mato Grosso, Maranhão, Minas Gerais, Pará, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Rondônia, Roraima, Santa Catarina and Sergipe). In the study area, it occurs in the municipalities of Alta Floresta, Barra do Bugres, Chapada dos Guimarães, Campinápolis, Colíder, Itaúba, Nova Canaã do Norte, Novo Mundo, Paranaíta, Sapezal and São José do Couto (Fig. 5D).

Comments: Flowers from February to October. It is part of the Ramosum Group, and among the species that occur in Brazil it is similar to *E. rodriguesii* Cogn., but it is distinguished by the perianth not covered by the floral bract (*vs*. perianth partially covered). In the study area, it can be confused with *E. sculptum* due to the rachis partially to completely covered by floral bracts and branched stems but can be differed by the white flowers (*vs*. green or yellow) and linear petals (*vs*. elliptical or oblong petals).

Examined material: Alta Floresta, PCH Cabeça-de-boi, 29.V.2014, *C.R.A. Soares-Lopes et al. 2077649 (*HERBAM 9691); Barra do Bugres, Tapirapoan, 01.III.1909, *F.C Hoehne 1609* (R 2834); Chapada dos Guimarães, Usina Hidrelétrica de Manso, 12.VIII.1999, *M. Macedo 7097* (UFMT 21831); Ibidem, 22.VI.1999, *M. Macedo & I.C. Lopes 7061* (UFMT 21521); Campinápolis, PCH Paranatinga II, 10.III.2006, *A. Petini-Benelli & P.R. Paello 7* (UFMT 36356); Colíder, Resgate da Flora da UHE Colíder, 08.X.2014, *M.E. Engels 2948* (*MBM 417221);* Ibidem, 08.III.2015, *M.E. Engels 3153* (CNMT 1910, MBM 403802, TANG 5023); Ibidem, 31.I.2015, *M.E. Engels 6492814BCopel6* (HERBAM 15750); Ibidem, 21.III.2017, *M.E. Engels 5028* (MBM 417241); Itaúba, Resgate da Flora da UHE Colíder, 10.II.2015, *M.E. Engels 2789* (MBM 417222); Ibidem, 29.V.2017, *M.E. Engels et al. 5614* (MBM 417231); Ibidem, 05.II.2017, *M.E. Engels 4939* (MBM 417227); Ibidem, 05.IV.2017, *M.E. Engels et al. 5215* (MBM 417238, RB 01377275); Ibidem, 14.II.2015, *M.E. Engels* 2798 (TANG 5656); Ibidem, 10.V.2017, *M.E. Engels et al.* 5399 (MBM 417235); Nova Canaã do Norte, Resgate de flora da UHE Colíder, 05.IV.2017, *M.E. Engels et al.* 5215 (TANG 5818); Novo Mundo, Parque Estadual do Cristalino, 27.VIII.2008, *D.C. Zappi 1478* (HERBAM 2518, SPF 207119); Ibidem, RPPN Lote Cristalino, 03.VII.2017, *D.R. Da Silva 197* (HERBAM 17768), Ibidem, Trilha do Limão, 14.XII.2024, *E. Pessoa et al. 1380* (UFMT); Paranaíta, Terra Firme, 16.IV.2012, *C.R.A. Soares 1056013* (HERBAM 8099); Sapezal, Reserva Tirecatinga, 26.III.1997, *R. Godinho 278* (UFMT 15389); São José do Couto, Distrito de Paranatinga, 10.III.2006, *A.P. Beneli* s.n. (HCF 11757, HCF 000017871).

20. *Epidendrum viviparum* Lindl., Edwards's Bot. Reg. 19: 10. 1841. (Fig. 4H)
≡ *Coilostylis vivipara* (Lindl.) Withner & P.A. Harding, Cattleyas Rel.: Debatable Epidendrums: 146. 2004.
= *Epidendrum viviparum* f. *maior* Hoehne in Relat. Commiss. Linhas Telegr. Estratég. Matto Grosso Amazonas 5(4): 19. 1912.

Diagnosis: Epiphytes. Stems swollen forming ellipsoid pseudobulbs, unbranched. Leaves elliptical, plane. Inflorescence 24.4–70.0 cm long, simple, glabrous; peduncle

17.0–57.4 cm long, cylindrical; rachis 7.4–12.6 cm long. Flowers 4–6 per inflorescence, resupinate, white; pedicellate ovary without distinct vesicle in the central face, exposed; sepals elliptical; petals elliptical; labellum 3-lobed, plane, margin erose; column white. Fruits not seen.

Distribution: Bolivia, Colombia, Ecuador, French Guiana, Guyana, Peru and Brazil (states of Amazonas, Mato Grosso, Maranhão, Pará, Rondônia and Roraima). In the study area, it occurs in the municipalities of Aripuanã, Colíder, Barra do Bugres, Chapada dos Guimarães, Campinápolis, Itaúba, Juruena, Nova Canaã do Norte, Santa Carmem, Tangará da Serra and Terra Nova do Norte (Fig. 5D).

Comments: Flowers from January to December. It is part of the Coilostylis Group, and among the species that occur in Brazil it is similar to *E. purpurascens* Focke, but it is distinguished by the longer peduncle ≥ 17.0 cm long (*vs*. < 8.0 cm). In the study area, it can be confused with *E. carpophorum* due to the deeply 3-lobed white labellum but differs by the presence of pseudobulbs (*vs*. stems not swollen not forming pseudobulbs) and by the labellum with erose margin (*vs.* labellum with entire margin).

Examined material: Aripuanã, Rio Juruena, 14.II.1966, *M. Mee s.n.* (SP 100025, SP 329665); Itaúba, Resgate de FLORA da UHE Colíder, 26.II.2015, *M.E. Engels 6652830BCopel6* (HERBAM 12916); Ibidem, 20.I.2015, *M.E. Engels 2855* (MBM 403740); Ibidem, 09.I.2016, *M.E. Engels 4062* (MBM 403737); Juruena, 01.XII.1911, *F.C. Hoehne 5589* (R 2826, RB 00250802); Ibidem, 01.XII.1911, *F. Hoehne 5587 (*R 44789); Nova Canaã do Norte, Resgate da Flora da UHE Colíder, 23.I.2015, *M.E. Engels & M.* Lautert *2884* (MBM 403806, TANG 5017); Santa Carmem, Rio Arraias, 01.I.1997, *R. Godinho & M. Macedo 267* (UFMT 15404),Tangará da Serra, Epifitário Catasetum, 03.II.2011, *J.Q .Moraes 38* (TANG 1056); Ibidem, 10.I.2012, *A.P. Santos 25* (TANG 1754); Terra Nova do Norte, Margem do rio Batistão, 26.III.2011, *A.K. Koch 379* (TANG 465).

Discussion. Of the 27 species of *Epidendrum* mentioned by Pessoa (2020) for Mato Grosso, 20 were confirmed. Five species previously recorded in Mato Grosso, *E. avicula* Lindl., *E. ibaguense* Kunth, *E. micronocturnum* Carnevali & G.A.Romero, *E. orchidiflorum* Salzm. and *E. pseudodifforme* Hoehne & Schltr., were excluded here as they represented cases of erroneous identifications due to similarities with other species that occur in the state. This also applies to *E. humidicola* Schltr., *E. peperomia* Rchb. f., *E. secundum* Jacq. and *E. tridactylum* Lindl., which despite never being recorded in Mato Grosso, were misapplied names in herbarium specimens.

The name *E. callobotrys* Kraenzl., originally described based on one specimen from Chapada dos Guimarães collected by Gustaf Malme (Kraenzlin, 1911), was only known from the type specimen deposited at herbarium S. After analysis, we concluded that it should be synonymized in *E. coronatum* Ruiz & Pav., a more widely distributed species known from several records from Mato Grosso.

Among the confirmed species, the most abundant in number of herbarium specimens are *E. carpophorum* Barb. Rodr. (19), *E. flexuosum* G. Mey (16), *E. strobiliferum* Rchb.f. (11) and *E. viviparum* Lindl. (11). Four species are endemic from Brazil: *E. amblostomoides* Hoehne, *E. campestre* Lindl., *E. pareciense* Cordeiro and *E. strobilicaule* Hágsater & Benelli, the last two endemic to the state of Mato Grosso. Among the municipalities, the richest in species are Itaúba (15 spp.), Colíder (9 spp.) Paranaíta (8 spp.) and Chapada dos Guimarães (8 spp.). The Amazon phytogeographical domain has 17 recorded species, the Cerrado has 13 and Pantanal has only five confirmed species: *E. anceps* Jacq., *E. carpophorum* Barb. Rodr., *E. densiflorum* Hook., *E. flexuosum* G. Mey, and *E. stiliferum* Dressler. These five species are new records for this domain (BFG 2015, 2018). The region covered by the Pantanal domain in the state of Mato Grosso has rarely been the subject of taxonomic studies. Thus, the present study shows novel results, as it presents relevant contributions to the understanding of Orchidaceae in this domain.

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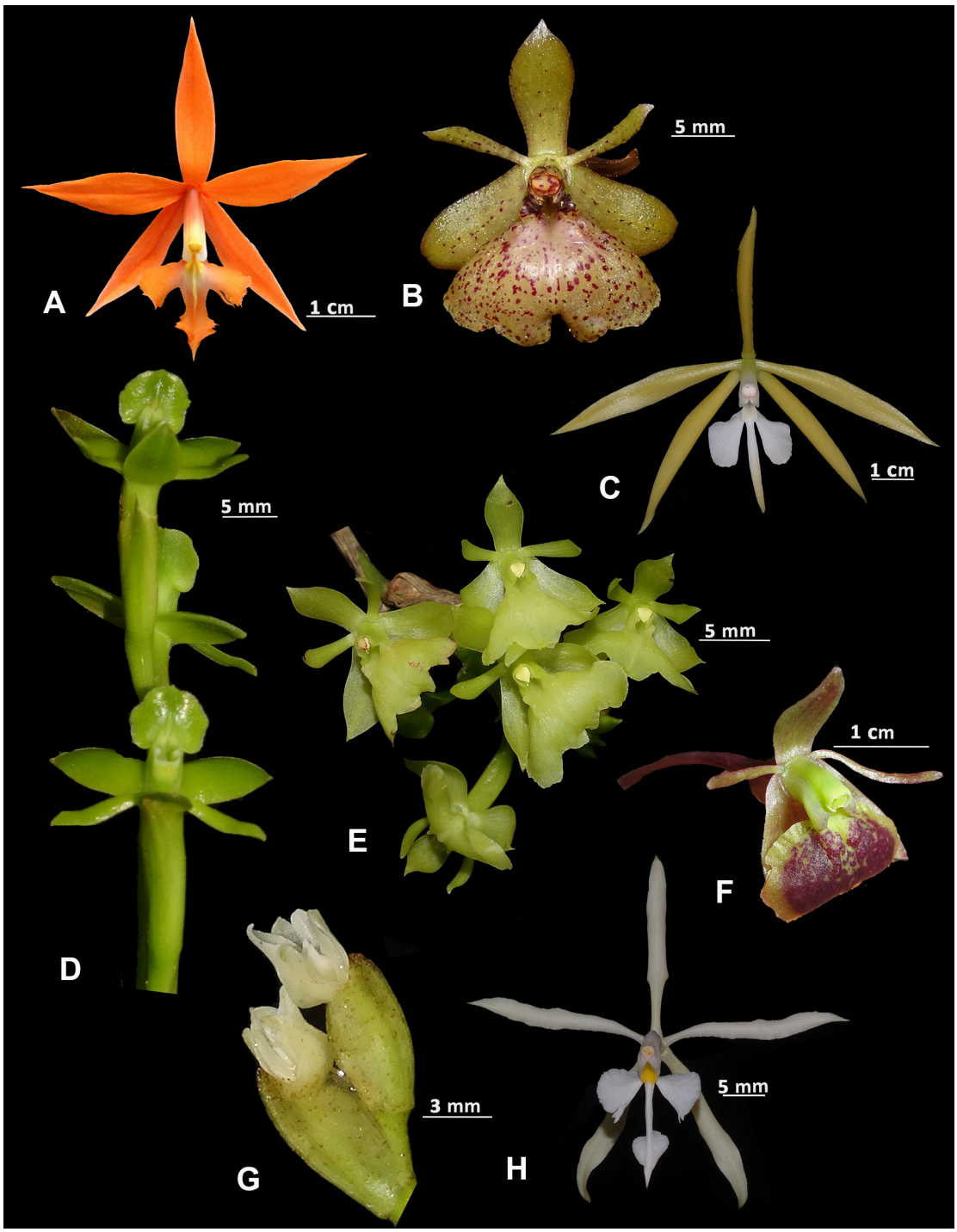

Figure 4. Species of *Epidendrum* occurring in Mato Grosso, Brazil. **A**. *Epidendrum macrocarpum*. **B**. *Epidendrum myrmecophorum*. **C**. *Epidendrum pareciense*. **D**. *Epidendrum rigidum*. **E**. *Epidendrum smaragdinum*. **F**. *Epidendrum strobilicaule*. **G**. *Epidendrum strobiliferum*. **H**. *Epidendrum viviparum.* Photos by M. Engels (A, B, C, D, E, G, H), and A. Benelli (F).

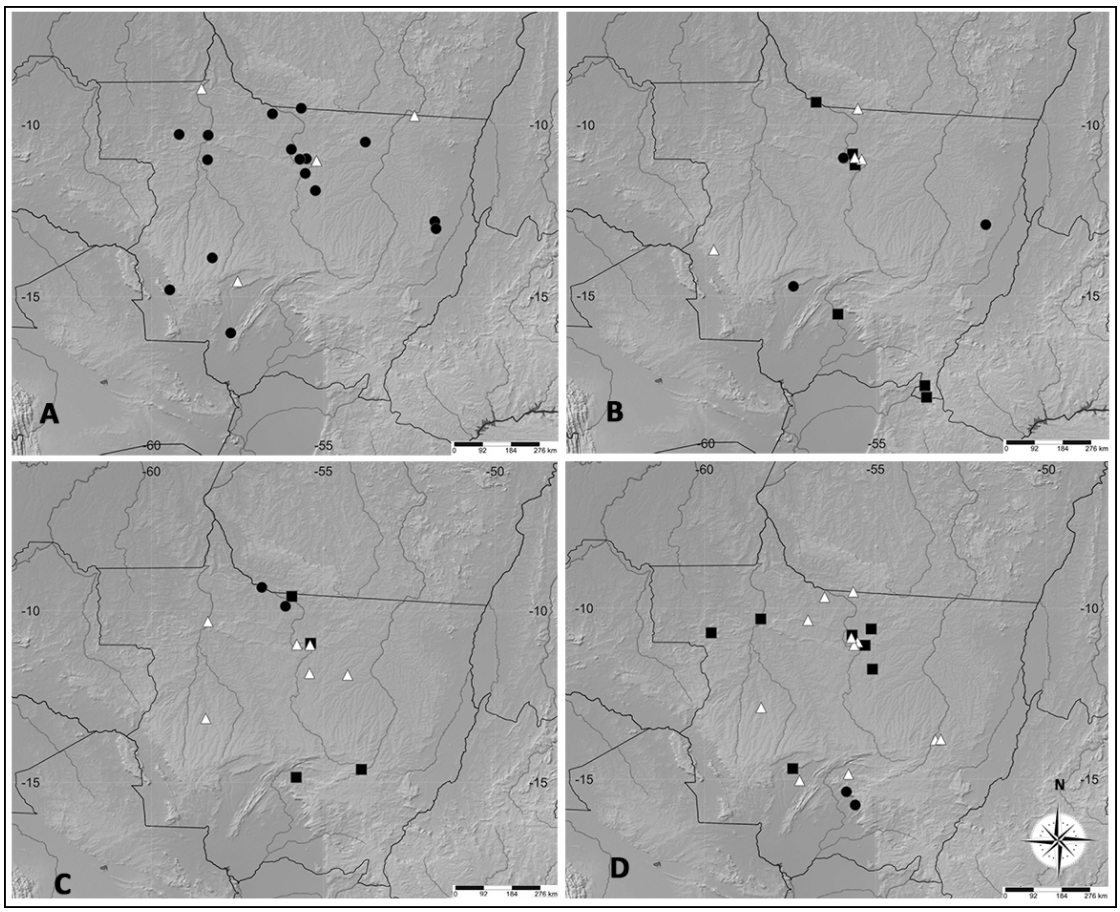

FIGURE 5. Geographical distribution in Mato Grosso of: **A**. *Epidendrum flexuosum* (black circle) and *E. macrocarpum* (white triangle). **B**. *Epidendrum myrmecophorum* (black circle), *E. pareciense* (white triangle) and *E. rigidum* (black square). **C**. *Epidendrum sculptum* (black circle), *E. smaragdinum* (white triangle) and *E. stiliferum* (black square). **D**. *Epidendrum strobilicaule* (black circle), *E. strobiliferum* (white triangle) and *E. viviparum* (black square).

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