

**A NEW SPECIES OF *CATASETUM*
(*ORCHIDACEAE*) FOR THE STATE OF
MATO GROSSO, BRAZIL**

A. PETINI-BENELLI¹ & A. GRADE²

A new species of *Catasetum* Rich. ex Kunth (*Orchidaceae*), *Catasetum apolloi* Benelli & Grade, from the municipality of Carlinda in the State of Mato Grosso, Brazil is described and illustrated. The plant was discovered in a pasture near the Teles Pires River growing epiphytically under the palm *Maximiliana regia* Mart. A discussion and consideration of possible related species is presented.

Keywords. Brazil, *Catasetum apolloi*, Mato Grosso, new species, *Orchidaceae*.

INTRODUCTION

Catasetum Rich. ex Kunth is a genus with 94 species and six natural hybrids in Brazil, of which 26 species have been confirmed for Mato Grosso (Silva & Silva, 1998; Fernandes *et al.*, 2006). Of these, 11 species are reported for the Mato Grosso Amazon (Fernandes & Petini-Benelli, 2007).

Located in the Amazon part of Mato Grosso State, Carlinda comprises the area between the geographic coordinates 10°13'01"S and 10°16'54"S, 56°12'20"W and 56°14'22"W. The average altitude is 290 m and the population is over 13,800 inhabitants. The total area of the municipality is 2426.9 km². It has one of the smallest demographic densities in the State, 5.7 inhab./km². It is located in the northern part of Mato Grosso (SAD-MT, 2007).

The relief in this region is marked by the Meridional Amazon Interplateau Depression, where the climate is equatorial, hot and humid. The seasons are: drought, which lasts two months (June and July); and rainy, reaching the highest intensity in January, February, and March. The average annual temperature is 24°C, reaching 40°C during the hottest periods (Ferreira, 1997; Araldi, 2003). The average annual precipitation is 2750 mm.

The vegetation is characterised by submontane open ombrophilous forest with vines, and submontane open ombrophilous forest with palms. Noteworthy species of the former are the Brazil-nut (*Bertholletia excelsa* Bonpl., *Lecythidaceae*) and Itauba (*Mezilaurus itauba* (Meissn.) Taub. ex Mez, *Lauraceae*), and a noteworthy species of

¹ Biologist, Researcher at the Herbarium at UFMT. Caixa Postal 198 – Centro, Cuiabá – MT, CEP 78005-970, Brazil. E-mail: ada.benelli@gmail.com

² Biologist, Environmental Educator, Recanto das Orquídeas. Caixa Postal 449, Alta Floresta – MT, Brazil. E-mail: agrade@vsp.com.br

the latter is Inaja (*Maximiliana regia* Mart., *Arecaceae*). The trees have large leaves and a rough bark as in mahogany (*Swietenia macrophylla* King, *Meliaceae*) and cedar (*Cedrella odorata* L., *Meliaceae*) (Brasil, Departamento Nacional da Produção Mineral, 1980).

The catchment area is fed mainly by the Teles Pires, São Manoel, and Juruena Rivers and their numerous temporary or permanent tributaries (Benett *et al.*, 2002). Most of the land has been converted to pasture, divided between various properties (Benett *et al.*, 2002). The Sussex Farm is located in an area that used to be a dense forest, cut 20 years ago for pasture, with some remaining cuts of riparian forest (Fig. 1). The area in which the species has been observed is located about 1 km from the left bank of the Teles Pires River, fed by small creeks.

NEW SPECIES

Catasetum apolloi Benelli & Grade, *sp. nov.* Fig. 2.

Radices numerosae, longiuscule, robustiusculae, leviter flexuosae, simplices, albidae; pseudobulbis robustis, fusiformis vel interdum cylindraceis, erectis vel



FIG. 1. Sussex Farm, the area in which the species has been observed. (Photo: Apolônia Grade.)

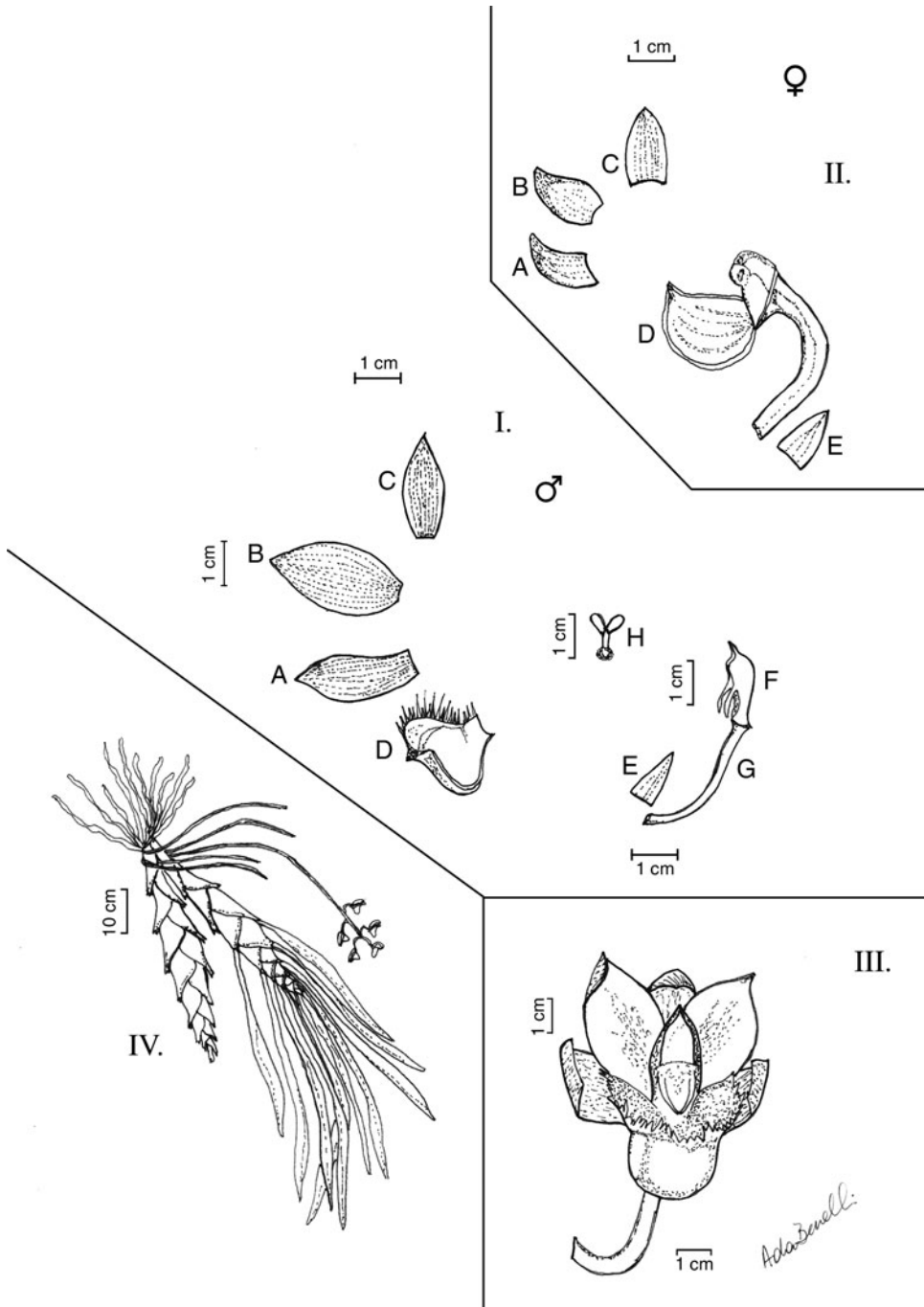


FIG. 2. *Catasetum apolloi* Benelli & Grade. **I.** Male flower: A, lateral sepal; B, lateral petal; C, dorsal sepal; D, lip; E, floral bract; F, column; G, floral pedicel; H, pollinia and pollinarium. **II.** Female flower: A, lateral sepal; B, lateral petal; C, dorsal sepal; D, lip; E, floral bract. **III.** Flower. **IV.** Habit.

semipendentis, rectis vel paulo arcuatis, superne satis attenuatis, intense virides et transverse atropurpurascens; foliis medioxime longiis, decidui, anguste lineariligulatis, acuminatis, basi multo attenuatis, trinerviis; scapo basilari, robustiunculo, basi vaginis paucis brevibus remotis acustique vestito, superne laxi multifloro; bracteis membranaceis, triangularis; ovario multo brevioribus; floribus mediocribus, longiuscule pedicellatis; sepalis carnosulis, ovatis, abrupte acutis, reflexis apiceis curvatis, subconiventibus, sepalo dorsali aequilongis, sepalis lateralibus paulo longiore; petalis late ovatis, obtusis vel acutiusculis, margine reflexis; labello infero, crassiuscule carnosus, rigido, profunde saccato sacco rotundato antice depresso, ore reniformi-rotundato cum apicula tumorem bisulcatum efferente, infra limbum membrana base lata longe fimbriato-ciliata artice in seriem ciliatum exeunte, disco glabro; columna brevi, crassa, erostrata, circa clinandrium denticulata, utrinque juxta foveam angulo producto cornuta. – Typus: Brazil, Mato Grosso State, Carlinda, 26 i 2007, *A. Grade* 37269 (holo UFMT).

Epiphytic herb, robust; pseudobulbs fusiform to cylindrical, 30–45 cm in length, 5–7 cm in diameter, older plants with sulcate costulate rings; pseudobulbs with attenuated apex. *Leaves* linear-lanceolate, 30–75 × 3–5 cm, dark green, erectopatient, recurved, trinerved, nerves prominent on the abaxial face, base attenuate, canaliculate, forming a pseudopetiole, apex acuminate. *Inflorescence* racemose, 15–55 cm long, 7–10 mm wide, many-flowered, flowers arranged in the upper two thirds; floral bracts triangular, c.14 × 6 mm, appressed to reflexed, concave, reddish-brown, apex acuminate; pedicel c.3 cm long, patent, straight to slightly arched, robust, cylindrical, reddish, sulcate pseudo-ovary. *Male flowers* semi-tilted to perfectly pendulous, reddish, greenish at base; dorsal sepal oval, c.2.4 × 1 cm, fleshy, erect, slightly concave, base slightly attenuate, apex acuminate; lateral sepals triangular, c.2.7 × 1.1 cm, fleshy, strongly reflexed, oblique, margin convoluted near the apex, apex acuminate; petals obovate, c.2.9 × 1.6 cm, reflexed, slightly concave, base attenuate, apex obtuse; lip strongly bonnet-shaped, c.1.5 cm deep by 1.2 cm wide, inferior, generously fleshy, rigid, sack-like, dorsal part of the protuberance rounded, depressed on the anterior face, fistula orbicular, median lobe apiculate, c.3 mm long, lateral lobes sinuous, slightly convolute, yellowish, red-spotted, margin fimbriate, fringes red; column club-shaped, c.19 × 5 mm, yellow, base spotted in red, ventrally concave, dorsally convex, clinandrium margin indented; anther c.4 × 4 mm, apex rostrate, rostrum c.1 mm in length, pollinia 2, pollinarium c.5 × 1 mm, caudicles curved, c.8 × 1 mm, fleshy, converging close to the base of the column. *Female flowers* reddish-brown; dorsal sepals obovate, c.1.7 × 0.9 cm, apex acuminate, lateral sepal falciform, c.1.4 × 0.7 cm, apex slightly acuminate; petals obovate, c.1.7 × 1 cm, apex slightly acuminate, lip bonnet-shaped, c.1.5 cm deep by 2 cm wide; column club-shaped, c.1 × 0.8 cm; ovary and pedicel c.4 cm long. Female flower frequently resupinate (Fig. 3). Immature *fruit*, c.7 cm long with three slightly prominent keels.

Distribution. Brazil: Mato Grosso: Carlinda.



FIG. 3. Female flower and capsule of *Catasetum apolloi*. (Photo: Apolônia Grade.)

Etymology. After Apollo Blans Lima, the discoverer of this species.

Additional specimen studied. BRAZIL. Mato Grosso: municipality of Carlinda, 26 i 2007, A. Grade 37270 (UFMT).

Catasetum mojuense A.T.Oliveira & J.B.F.da Silva and *Catasetum* × *guianense* G.Romero & Jenny are the most similar species or hybrids to *Catasetum apolloi*. There are, however, a number of important differences (Table 1).

Another important observation is the direction of the species in relation to the substrate: while *Catasetum mojuense* has an ascending vertical habit, *C. apolloi* always has a semi-tilted habit at angles of 30–45° to the substrate (Fig. 4). This character, and its long leaves, could lead to confusion with *Catasetum longifolium* Lindl. *Catasetum* × *guianense* occurs in Guyana and French Guyana and not in

TABLE 1. Comparison table for *Catasetum apolloi*, *C. × guianense* and *C. mojuense*

| | <i>Catasetum apolloi</i> | <i>Catasetum × guianense</i> | <i>Catasetum mojuense</i> |
|---------------|---|---|--|
| Leaves | Linear-lanceolate, long (30–75 × 3–5 cm) | Linear, long (70 × 4 cm) | Lanceolate, short (23 × 4.5 cm) |
| Petals | Obovate, apex obtuse, reflexed, slightly concave, 29 × 16 mm | Broadly elliptic, apex acute to shortly apiculate, slightly reflexed, concave, 28–29 × 18–19 mm | Oblong-lanceolate, apex acute, slightly reflexed, convex, 25 × 14 mm |
| Dorsal sepal | Oval, slightly concave, 24 mm long | Ovate, slightly concave, 23–25 mm long | Lanceolate, concave, 25 mm long |
| Lateral sepal | Triangular, 27 mm long | Oblong-obovate, 25–27 mm long | Lanceolate, 25 mm long |
| Labellum | Orbicular ostium, sack 15 mm deep × 12 mm wide; margins fimbriate towards the base; middle lobe linguiform, the apex acute | Subcircular ostium, sack 15–17 mm deep × 10 mm wide; margins dentate, fimbriate towards the base; middle lobe linguiform, the apex acuminate, acute, to truncate | Subelliptic ostium, sack 16 mm deep × 13 mm wide; margins slightly fimbriate; middle lobe apiculate, the apex acute |
| Column | Club-shaped, 19 mm long × 5 mm wide; antennas converging near the column base | Semiterete, 16 mm long × 10 mm wide; antennas distant, both do not come across in the apex | Subtriangular, 14 mm long × 7 mm wide; short antennas that cross at the apex |
| Anther | 4 × 4 mm | 8 × 5 mm | 6 × 4 mm |



FIG. 4. Male flower of *Catasetum apolloi*. (Photo: Apolônia Grade.)

Brazil. The similarity between these two species is only in flower morphology; they are very different in vegetative characters.

In its morphology *Catasetum apolloi* is most similar to *C. longifolium* and *C. schmidtianum* F.E.L.Miranda & K.G.Lacerda. In addition, these two species are found in the same area and are frequently found growing on the same phorophyte: *Maximiliana regia*. The three species co-occur throughout the observed area, which extends for approximately 14 km from the first plant located to the edge of the pasture (approximately 1 km in width, from the left margin of the Teles Pires River). There is, however, no evidence to suggest that *Catasetum apolloi* is a hybrid as Romero & Jenny (1992) found for several other species of *Catasetum*.

The three observed species appear to share the same pollinator. Many Euglossine bees (*Eulaema cingulata* Fabricius) have been seen around a single flowering stem,

either feminine or masculine, in all three species: *Catasetum schmidtianum*, *C. apolloi*, and *C. longifolium*.

The three species of *Catasetinae* are absolute dominants, with no other species at the location. There are also no other *Orchidaceae* of any other genus.

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