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Original Paper

Flora of Ceará, Brazil: *Ditassa* (Asclepiadoideae/Apocynaceae)

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Abstract

This study aimed to carry out a taxonomic floristic survey of species in the genus *Ditassa* (Asclepiadoideae/Apocynaceae), as part of the "Flora do Ceará: knowing to conserve" project. The study was based on the analysis of morphological characters of specimens from representative herbaria for the genus. The identifications were performed using specialized bibliography and confirmed by analyzing type collections. For Ceará state, six species of *Ditassa* were registered: *D. blanchetii*, *D. capillaris*, *D. dardanoi*, *D. glaziovii*, *D. hastata* and *D. hispida*. The species occur in Savana (Cerrado), Stepic Savanna (Caatinga/Carrasco), Dense Ombrophilous Forest (Wet forest) and Lowland Semideciduous Seasonal Forest (Tableland forest). Only *D. capillaris* and *D. hastata* were recorded in Conservation Units.

Key words: climbing, diversity, Gentianales, Neotropics, Northeast of Brazil.

Resumo

Este estudo teve como objetivo realizar o levantamento florístico-taxonômico dos representantes do gênero *Ditassa* (Asclepiadoideae/Apocynaceae), como parte do projeto "Flora do Ceará: conhecer para conservar". O estudo se baseou na análise de caracteres morfológicos de espécimes depositados em herbários representativos para o gênero. As identificações foram realizadas com o auxílio de bibliografias especializadas e confirmadas pela análise das coleções-tipo. No estado do Ceará foram registradas seis espécies do gênero *Ditassa*: *D. blanchetii*, *D. capillaris*, *D. dardanoi*, *D. glaziovii*, *D. hastata* e *D. hispida*. As espécies ocorrem em Savana (Cerrado), Savana Estépica (Caatinga/Carrasco), Floresta Ombrófila Densa (Mata Úmida) e Floresta Estacional Semidecidual de Terras Baixas (Mata de Tabuleiro). Apenas *D. capillaris* e *D. hastata* foram registradas em Unidades de Conservação.

Palavras-chave: trepadeiras, diversidade, Gentianales, Neotrópicos, Nordeste do Brasil.

Introduction

Apocynaceae, included in Gentianales, covers about 380 genera and 5,350 species distributed in five subfamilies (Endress 2004; APG IV 2016; Endress *et al.* 2018). Except for some temperate species, their representatives are mainly found in tropical and subtropical regions of the world (Sennblad & Bremer 2002). In Brazil, the family is represented by approximately 90 genera and 960 species occurring in all vegetation types (BFG 2018).

Asclepiadoideae comprises 164 genera and 3,000 species (Endress *et al.* 2014). It is the largest subfamily of Apocynaceae and is considered

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a group with one of the most complex floral structures among the Angiosperms (Rapini *et al*. 2001). Such fact is attributed to several fusions of parts of the same whorl and also between different floral whorls (Endress 1994). This group also stands out due to the fusion of part of the corolla with an androecium region, giving rise to the corona and nectar deposition channels; likewise a portion of the gynoecium constitutes the gynostegium and pollinaria, which comprises a retinaculum, two caudicles, and two pollinia (Endress 1994; Peter & Johnson 2006).

Among the genera circumscribed to Asclepiadoideae, *Ditassa* stands out, which is represented by 100 species distributed throughout Latin America, except Chile (Konno 2005). The center of diversity for the genus is the Guiana Plateau, Venezuela and the Central Brazilian Plateau, especially Minas Gerais state (Konno 2005). Its representatives are characterized by subaxillary and alternate inflorescences, subrotate to rotate corolla, usually bearded on the adaxial surface, and corona with segments attached at the base (Brown 1810; Fontella-Pereira 1977; Rapini *et al*. 2001; Konno 2005).

Based on nuclear and plastid gene sequences, Silva *et al*. (2012) showed *Ditassa* is not monophyletic, and has affinities with genera within Metastelmatinae core group. Due to this uncertain phylogenetic position further studies about the genus are necessary.

Ditassa species occurring in Brazil were treated by Konno (2005), and also were studied in regional taxonomic treatments. Among these, we highlight the studies carried out in the Southeast region by Fontella-Pereira *et al*. (1995), Rapini *et al*. (2001, 2003), Konno & Pereira (2005) and Goes & Fontella-Pereira (2009). For the Northeast region, *Ditassa* was treated in state floras, such as Alagoas (Lyra-Lemos *et al*. 2010), Sergipe (Konno & Farinaccio 2013) and Pernambuco (Coutinho & Louzada 2018). In Ceará state, two species of *Ditassa* have been listed in floristic studies (Ribeiro-Silva *et al*. 2012; Loiola *et al*. 2015). According to BFG (2018), there are six species in the state.

Following the floristic works being developed about Ceará state flora, the present study, which is part of the project "Flora of Ceará: knowing to conserve", aims to present the floristic-taxonomic survey of *Ditassa* in the state, updating the identification and geographic distribution of species through taxonomic descriptions, identification key, illustrations with their main characteristics and distribution map.

Material and Methods

This study focused on field populations collected and observed during expeditions in 2019 and comparative analysis of specimens deposited in the herbaria EAC, HCDAL, HUEFS, HVASF, IPA, R and UFRN, acronyms according to Thiers (continuously updated). Identifications were performed by consulting specialized bibliographies (Rapini *et al*. 2001, 2003; Konno & Wanderley 2004; Konno 2005) and image analysis of type-collections available at herbarium sites K, MO, NY and P. Author names followed IPNI (2019).

The terminology used for vegetative structures followed Radford *et al.* (1974) and Harris & Harris (2001). Data regarding growth form (habit), reproductive structures and habitat were obtained from exsiccate labels and/or through field observations. When samples collected in Ceará were insufficient for description and/or illustrations, additional materials from other states or label information were used to complement such data. Species illustrations were drawn freehand or with a stereo microscope equipped with light camera (Nikon SMZ 1500) and covered with ink.

The vegetation types were defined as proposed by Figueiredo (1997) and the Technical Manual of the Brazilian Vegetation (IBGE 2012): Vegetation Complex of the Coastal Zone (comprises the Pioneer Psammophilous Vegetation, Forest behind the Dunes and Lowland Semideciduous Forest), Semideciduous Seasonal Forest (Mata Seca), Dense Ombrophilous Forest (Mata Úmida), Savanna (Cerrado), Arboreous Savanna (Cerradão), Stepic Savanna (Caatinga), Arboreous Stepic Savanna (Caatinga Arbórea) and Vegetation under Fluvial and/or Lacustrine Influence (Mata Ciliar), The species distribution map showing occurrence of taxa in the vegetation types recorded in Ceará was delimited by 0.5° longitude × 0.5° latitude grid squares (Rebouças *et al.* 2020). When possible, records of species without coordinates on exsiccates were georeferenced, using the municipality coordinates obtained with "geoLoc" (CRIA 2019).

Ditassa dardanoi T.U.P. Konno & Wand. and *D. glaziovii* E. Fourn. each have one record in Ceará state with no indication of location and vegetation type. Therefore, these species are not represented in the distribution map.

Results and Discussion

In Ceará, the genus *Ditassa* is represented by six species: *D. blanchetii* Decne., *D. capillaris* E. Fourn., *D. dardanoi* T.U.P. Konno & Wand., *D. glaziovii* E. Fourn., *D. hastata* Decne. and *D. hispida* (Vell.) Fontella, confirming what is presented in the BFG (2018).

Despite all the sampling efforts that the "Flora of Ceará: knowing to conserve" project has been carrying out since 2009, with collections in several Ceará municipalities, *D. dardanoi* and *D. glaziovii* have not yet been collected.

Ditassa species occur in dry environments, as well as wetter regions, in Ceará (Fig. 1). *Ditassa capillaris* was registered in Savanna (Cerrado) and Stepic savanna (Carrasco) and *D. hispida* was found only in the Lowland Semideciduous Forest (Tableland forest), while *D. hastata* was exclusively collected in the Stepic savanna (Caatinga) and *D. blanchetii* only in Dense Ombrophilous Forest (Wet forest).

Only *Ditassa capillaris* (Araripe-Apodi National Forest) and *D. hastata* (Pedra da Andorinha Wildlife Refuge) were registered in Ceará State Conservation Units. In general, records of the group are scarce, which is probably related to the fact that they are climbing plants that usually present < 1 cm long flowers that do not attract the attention of collectors. Therefore, greater sampling efforts to collect *Ditassa* representatives in Ceará territory are necessary.

Taxonomic treatment

Ditassa R. Br., Syst. Veg. (ed. 15 bis) 6: 112. 1820.

Climbing plants or subshrubs, monoecious. Branches cylindrical, glabrous to glabrescent or strigose, pilose, pubescent, hirsute or hispid, trichomes unilaterally, bilaterally or evenly arranged. Leaves opposite, simple, entire, membranaceous or chartaceous, margins plane to slightly revolute, petiolate; colleters present or absent adaxially at the base of the midrib, with intra and interpetiolar colleters present or absent; stipules absent. Inflorescence cymose, umbelliform, subaxillary, odoriferous or not. Flowers bisexual, hypogynous, actinomorphic, pentamerous. Calyx with 5 sepals, gamosepalous, split almost up to the base, imbricate to valvate, persistent, colleters 2, adaxially. Corolla

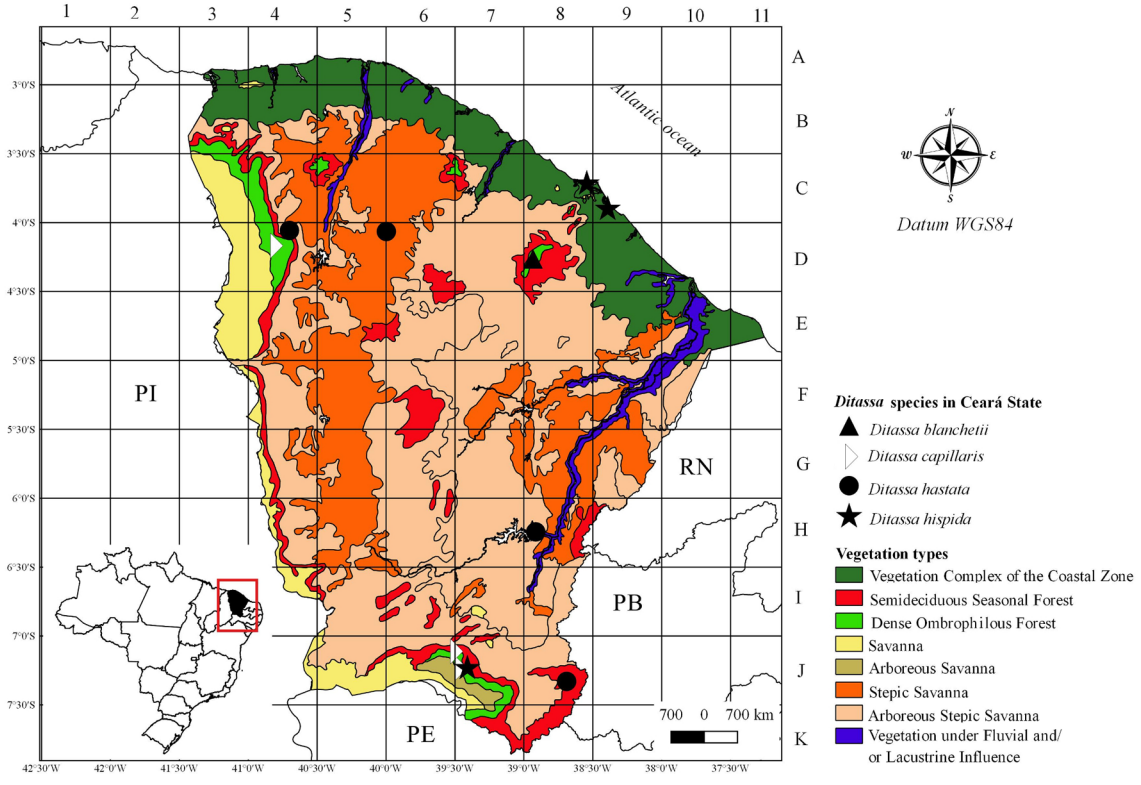

Figure 1 – Geographic distribution of *Ditassa* (Asclepiadoideae/Apocynaceae) species in Ceará state.

urceolate to rotate, with 5 lobes, gamopetalous, split almost up to the base, alternate to the sepals, yellow, white or cream. Corona 5-lobate, fused to the corolla and gynostegium, lobes double, opposite to the anthers, fused at the base, membranaceous. Androecium isostemonous, alternate to the petals, anthers usually rectangular, wings longer than the dorsum; retinaculum fistulose, caudicle simple; pollinia uniform and pendulous. Ovary apocarpous, hypogynous, 2-carpellate, free at the base, fused at the apex forming the gynostegium, mamillate, conical, or subglobose at the apex. Follicle pyriform or fusiform, glabrous, puberulent, subtomentose or strigose.

Key to *Ditassa* species from Ceará

1. Glabrous branches; triangular or hastate leaf blade (Fig. 2f)..... 5. *Ditassa hastata*
1'. Indumented branches; linear, oblanceolate, narrowly oblong, oblong, narrowly to widely elliptic, or ovate leaf blade.
    2. Branches with unilaterally arranged trichomes; leaf blade ≤ 0.5 cm long (Fig. 2b)..... 2. *Ditassa capillaris*
    2'. Branches with bilaterally or evenly arranged trichomes; leaf blade ≥ 1 cm long.
        3. Branches with bilaterally arranged trichomes; cymes with 6–12 flowers (Fig. 2a)..... 1. *Ditassa blanchetii*
        3'. Branches with evenly arranged trichomes; cymes up to 6 flowers.
            4. Hispid to hirsute branches (Fig. 2g); ovate calyx lobes (Fig. 2h)..... 6. *Ditassa hispida*
            4'. Pubescent or pilose branches; lanceolate calyx lobes.
                5. Pubescent branches; sessile inflorescence (Fig. 2d)..... 4. *Ditassa glaziovii*
                5'. Pilose branches, rarely glabrescent; pedunculate inflorescence (Fig. 2c)..... 3. *Ditassa dardanoi*

1. *Ditassa blanchetii* Decne., Prodr. 8: 575. 1844. Figs. 1; 2a

Climbing plants; branches twining, hispid, trichomes bilaterally arranged. Petiole 0.1–0.3 cm long, colleters absent. Leaf blade 1.3–3.1 × 0.8–1.5 cm, elliptic to widely elliptic, apex mucronate, base cuneate, margins plane, chartaceous, abaxial and adaxial surfaces hispid; 1 or 2 colleters. Cymes with 6–12 flowers, peduncle ca. 0.3 cm long. Calyx with lobes ca. 1.3 × 0.9 cm, ovate, not recurved, abaxial surface sparse-hispid, adaxial surface glabrous. Corolla subcampanulate to rotate, lobes 3.0–3.2 × 0.7–0.8 cm, elliptic, abaxial surface glabrous, adaxial surface puberulent. Corona longer than the gynostegium; outer and inner segments lanceolate, both incurved on the gynostegium, inner segments shorter than the outer segments; segments not tangled. Anthers with wings oblong. Retinaculum ca. 0.2 cm long, ellipsoid; pollinia ca. 0.2 cm long, ellipsoid. Gynostegium mamillate at the apex. Fruits not observed.

Examined material: Guaramiranga, Sítio Sinimbu, 11.IX.2003, fl., *V. Gomes & M.M.A. Bruno 744* (EAC). Without place and date, fl., *F. Allemão 992* (R).

Ditassa blanchetii is characterized by trichomes bilaterally arranged, absence of inter and intrapetiolar colleters and cymes with many flowers (6–12), differing from the other species of the genus recorded herein that have a maximum of six flowers.

It is endemic to Brazil, occurring in the North (Acre and Pará), Northeast (except Piauí and Sergipe) and Southeast (Espírito Santo, Minas Gerais and Rio de Janeiro) regions (BFG 2018). In Ceará, the species was recorded in the Baturité massif in Dense Ombrophilous Forest (Wet forest).

Species registered with buds and flowers in September.

2. *Ditassa capillaris* E. Fourn., *Fl. bras.* 6(4): 253. 1885. Figs. 1; 2b

Climbing plants; branches twining, strigose, trichomes unilaterally arranged. Petiole 0.2–0.4 cm long, 1–2 intrapetiolar colleters. Leaf blade 0.3–0.5 × 0.1–0.2 cm, narrowly oblong, oblong, oblanceolate, or linear, apex acuminate to mucronate, base obtuse, margins revolute, membranaceous, both the surfaces glabrous or with trichomes sparse adaxially at the midrib and margins; colleters absent. Cymes with 1–2 flowers, peduncle 0.2–1 cm long. Calyx with lobes ca. 0.1

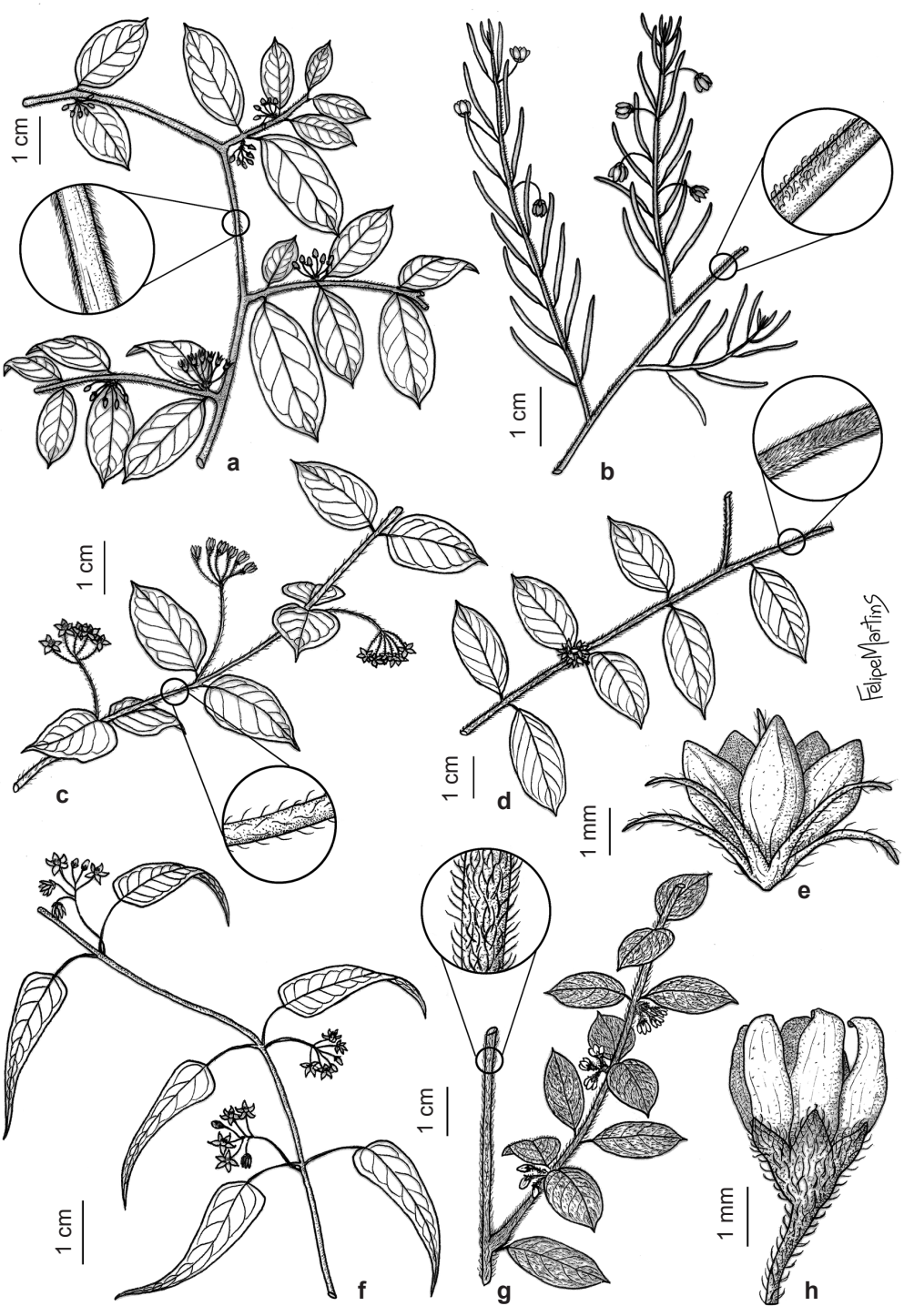

Figure 2 – a. *Ditassa blanchetii* – branch with leaves and cymes and detail of the bilateral arrangement of trichomes. b. *D. capillaris* – branch with leaves and cymes and detail of the unilateral arrangement of trichomes. c. *D. dardanoi* – branch with leaves and pedunculate cymes and detail of the pubescent indument. d-e. *D. glaziovii* – d. branch with leaves and sessile cymes and detail of the pubescent indument; e. flower. f. *D. hastata* – glabrous branches with leaves and cymes. g-h. *D. hispida* – g. branch with leaves and cymes and detail of the hispid indument; h. flower. (a. *V. Gomes 744*; b. *L.W. Lima-Verde 2360*; c. *J.A.C. Lofgren 838*; d-e. *G. Fotius 3322*; f. *M.F. Mata 2010*; g-h. *A.S.F. Castro* 952).

× 0.2 cm, ovate, not recurvate, both the surfaces glabrous. Corolla rotate, lobes ca. 0.3 × 0.4 cm, ovate, abaxial surface glabrous, adaxial surface puberulent. Corona shorter than the gynostegium; outer segments subrectangular, inner segments lanceolate, not recurved on the gynostegium and shorter than the outer segments; segments not tangled. Anthers with wings suboblong. Retinaculum ca. 0.1 cm long, ellipsoid; pollinia ca. 0.2 cm long, ellipsoid. Gynostegium mamillate at the apex. Follicle 2.1–2.7 cm long, pyriform, strigose.

Examined material: Crato, FLONA do Araripe, 20.II.2001, fl., *L.W. Lima-Verde 2360* (EAC, HUEFS); estrada Crato-Exú, 12.I.2007, fl., *E.N.C. Seixas et al.* (HCDAL 3572); estrada Santana do Cariri, FLONA, Canselão, 23.XI.2006, fl., *E.N.C. Seixas et al.* (HCDAL 2571); Chapada do Araripe, 06.III.2013, fl. and fr., *T.S. Coutinho* (HCDAL 9873). Guaraciaba do Norte, Andrade, 27.II.1981, fl. and fr., *A. Fernandes* (EAC 9797, UFRN 57). Without place and date, fl., *F. Allemão & M. Cysneiros 993* (R).

Ditassa capillaris is easily recognized for its tiny leaf blades (0.3–0.5 × 0.1–0.2 cm), flowers with a rotate corolla and subrectangular outer corona segments.

It is endemic to Brazil, occurs in the Northeast (Bahia, Ceará, Paraíba, Pernambuco and Piauí) and Southeast (Minas Gerais) (BFG 2018) regions. In Ceará, it prefers dry environments such as Savanna (Cerrado) and Stepic Savanna (Carrasco).

Species registered with flowers from January to March and with fruits between February and March.

3. *Ditassa dardanoi* T.U.P. Konno & Wand., Hoehnea 31(3): 349-352, f. 1-2. 2004.

Figs. 1; 2c

Climbing plants; branches twining, pilose, rarely glabrescent, trichomes evenly arranged. Petiole 0.1–0.2 cm long, 1–2 interpetiolar colleters. Leaf blade 1.4–3 × 0.8–1.6 cm, ovate or oblong, apex acuminate, base truncate to obtuse, margins plane, membranaceous, both the surfaces pilose; 2–3 colleters. Cymes with 2–6 flowers, peduncle 0.8–1.8 cm long. Calyx with lobes ca. 0.2 × 0.1 cm, ovate, sometimes recurvate, abaxial surface pilose, adaxial surface glabrescent. Corolla rotate, lobes 0.25–0.32 × 0.1–0.12 cm, lanceolate, abaxial surface glabrous, adaxial surface papillose. Corona with outer segments longer than the gynostegium; outer segments ovate-lanceolate, inner segments ovate, incurved on gynostegium and shorter than outer segments; outer segments tangled. Anthers with wings rectangular to obtrapeziform. Retinaculum ca. 0.2 cm long, ellipsoid; pollinia ca. 0.2 cm long, oblong. Gynostegium conical at the apex. Follicle ca. 4 cm long, fusiform, puberulent.

Examined material: without place and date, fl., *J.A.C. Lofgren 838* (R).

Additional examined material: BRAZIL. PERNAMBUCO: Floresta, Lote 12, 22.I.2010, fl., *M. Oliveira et al. 4638* (HVASF). Pesqueira, Serra do Ororubá, 2.VIII.1979, fl. and fr., *D. Andrade-Lima 79* (IPA).

Ditassa dardanoi resembles *D. glaziovii* mainly in the arrangement of branches, leaves and also in the recurved sepals *in sicco* (in dry state), which is considered a remarkable character of *D. glaziovii*. However, *D. dardanoi* differs from *D. glaziovii* in its inflorescence's elongated peduncles (*vs.* absent), lanceolate corolla lobes (*vs*. ovate-elliptic) and outer segments of the corona with long acuminate apex (*vs*. cuspidate).

It is endemic to Brazil with records in the Central-West (Goiás), Northeast (Bahia, Ceará, Pernambuco and Sergipe) and Southeast (Minas Gerais) regions, preferring dry environments such as Savana (Cerrado) and Stepic Savanna (Caatinga) (BFG 2018). Despite the collection efforts performed in Ceará state, the species has not yet been recollected.

Phenology was not registered for this species.

4. *Ditassa glaziovii* E. Fourn., *Fl. bras.* 6(4): 250. 1885. Figs. 1; 2d-e

Climbing plants; branches twining, pubescent, trichomes evenly arranged. Petiole 0.5–0.7 cm long, 1–2 interpetiolar colleters. Leaf blade 1.9–3.2 × 0.8–1.3 cm, oblong to elliptic, apex inconspicuously cuspidate, base rounded to cuneate, margins plane to slightly revolute, membranaceous, both the surfaces pubescent; colleters absent. Cymes with 2–4 flowers, sessile. Calyx with lobes 0.37–0.4 × 0.07–0.08 cm, lanceolate, recurved, both the surfaces glabrescent. Corolla rotate, lobes ca. 0.3 × 0.15 cm, ovate-elliptic, abaxial surface glabrous, adaxial surface papillate. Corona only with outer segments almost as long as or slightly longer than the gynostegium; outer segments ovate, inner segments lanceolate, not recurved on the gynostegium and shorter than outer segments; segments not tangled. Anthers with wings oblong. Retinaculum ca. 0.2 cm long, oblong; pollinia ca. 0.3 cm long, ellipsoid. Gynostegium mamillate at the apex. Fruit not observed.

Examined material: without place and date, fl., *F.F. Allemão & M. Cysneiros 991* (R).

Additional examined material: BRAZIL. PERNAMBUCO: Petrolina, 12 km CPATSA, 17.I.1983, fl., *G. Fotius 3322* (IPA). Santa Maria da Boa Vista, 29.IV.1971, fl., *E.P. Heringer et al.* (IPA 19248).

Ditassa glaziovii is recognized for its branches with evenly arranged trichomes, long calyx lobes recurved (0.37–0.4 × 0.07–0.08 cm) and sessile cymes. It resembles *D. dardanoi* and its distinguishing features are presented in the comments about the latter species.

It is endemic to Brazil with confirmed records in the Northeast (Bahia, Ceará and Pernambuco) and Southeast (Minas Gerais) regions, preferring the Stepic Savanna (Caatinga) and Savana (Cerrado) (BFG 2018). Despite the collection efforts performed in Ceará state, the species has not yet been recollected.

Phenology was not registered for this species.

5. *Ditassa hastata* Decne., Prodr. 8: 575. 1844. Figs. 1; 2f

Climbing plants; branches twining, older suberous, glabrous. Petiole 0.4–1.3 cm long, 4–8 interpetiolar colleters. Leaf blade 0.9–3.6 × 0.2–1.2 cm, triangular or hastate, apex acuminate, base hastate to truncate, margins plane, membranaceous, both the surfaces glabrous; 2 colleters. Cymes with 1–6 flowers, peduncle 0.4–1.4 cm long. Calyx with lobes ca. 0.1 × 0.1 cm, ovate, not recurved, both the surfaces glabrous. Corolla subrotate, lobes 0.1–0.2 × 0.1 cm, ovate, both the surfaces glabrous. Corona longer than the gynostegium; outer segments long subulate, inner segments subulate to fusiform, not incurved on the gynostegium and shorter than outer segments; segments tangled. Anthers with wings cuneate. Retinaculum ca. 0.1 cm long, oblong; pollinia ca. 0.2 cm long, subellipsoid to ellipsoid. Gynostegium mamillate at the apex. Follicle 2.5–3.5 cm long, pyriform, glabrous.

Examined material: Mauriti, Gravatá, 10.III.2010, fl., *J.R. Maciel 1461* (HUEFS, HVASF). Orós, barragem do açude de Orós, 01.XI.2014, fl., *R. Moura 1109* (EAC). Pacujá, Planalto da Ibiapaba, 23.I.2009, fl. and fr., *E.B. Souza 1681* (EAC). Sobral, Teperuaba, Unidade de Conservação Refúgio de Vida Silvestre Pedra da Andorinha, 24.II.2017, fl. and fr., *E.B. Souza 4441* (EAC, HUEFS). Without place and date, fl., *F. Allemão* (R 5140); fl. and fr., *F. Allemão & M. Cysneiros 994* (R).

Ditassa hastata is distinguished from other species recorded in Ceará by its glabrous branches and suberin deposition in the older branches. In addition, its leaves are triangular or hastate and membranaceous, which is a main feature for the recognition of this taxon.

It is endemic to Brazil, found in the Central-West (Goiás), Northern (Rondônia and Tocantins), Northeast (all states) and Southeast (Minas Gerais) regions (BFG 2018). In Ceará, the species is associated with the Caatinga Domain, found only in the Stepic Savanna (Caatinga) at the Municipal Conservation Unit Pedra da Andorinha Wildlife Refuge.

Species registered with flowers from January to March and November, and fruits between January and February.

6. *Ditassa hispida* (Vell.) Fontella, Bradea 3(2): 5. 1979. Figs. 1; 2g-h

Subshrubs; branches twining, hispid to hirsute, trichomes evenly arranged. Petiole 0.3–0.5 cm long, 1–2 intrapetiolar colleters. Leaf blade 1–4 × 0.8–1.7 cm, narrowly elliptic to elliptic, apex mucronate, base cuneate, margins revolute, membranaceous, both the surfaces hispid; 2 colleters. Cymes with 3–6 flowers, peduncle 0.1–0.2 cm long. Calyx with lobes ca. 0.1 × 0.15 cm, ovate, not recurved, abaxial surface hispid, adaxial surface glabrous. Corolla subcampanulate, lobes 0.33–0.38 × 0.2 cm, oblong to lanceolate, abaxial surface glabrous, adaxial surface puberulent. Corona with outer segments longer than the gynostegium; outer segments narrowly lanceolate to linear, inner segments lanceolate, not incurved on the gynostegium and shorter than the outer segments; segments not tangled. Anthers with wings oblong. Retinaculum ca. 0.2 cm long, ellipsoid to oblong; pollinia 0.1–0.2 cm long, ellipsoid. Gynostegium subglobose at the apex. Follicle ca. 1.7 cm long, narrowly pyriform, subtomentose.

Examined material: Aquiraz, Junco, 25.III.2001, fl., *A.S.F. Castro* (EAC 30571). Crato, Mata dos Cavalos, 03.IV.1942, fl. and fr., *P. Bezerra* (EAC 535). Fortaleza, Antônio Bezerra, 24.IX.1957, fl., *C. Souza* (EAC 1749).

Additional examined material: BRAZIL. PERNAMBUCO: Floresta, Reserva Ecológica de Serra Negra, 23.III.1994, fl. and fr., *A.M. Miranda et al. 1506* (EAC).

Ditassa hispida is easily recognized by the densely hispid to hirsute branches and leaves and corona lobes isolated from each other.

Ditassa hispida is the only species recorded in Ceará that is not endemic to Brazil, also occurring in Guyana, French Guiana and Argentina (Rapini 2010). In the Brazilian territory, it was registered in the North (Pará), Northeast (Alagoas,

Bahia, Ceará, Maranhão, Paraíba, Pernambuco and Sergipe), Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro and São Paulo) and South (Paraná) regions (BFG 2018). In Ceará, *D. hispida* was only registered in the Lowland Semideciduous Forest (Tableland forest).

Species registered with flowers in March, April and September and with fruits in April.

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