Botanical Journal of the Linnean Society, 2008, **157**, 587–590. With 1 figure

A new species of the Brazilian genus *Chresta* (Asteraceae, Vernonieae) from Bahia

NÁDIA ROQUE[1], JACQUELINE M. GONÇALVES[2] and MASSIMILIANO DEMATTEIS[3]*

[1]*Instituto de Biología, Universidade Federal da Bahia, Brazil*
[2]*Departamento de Ciencias Biológicas, Universidade Estadual de Feira de Santana, Feira de Santana, Bahia, Brazil*
[3]*Instituto de Botánica del Nordeste, Casilla de Correo 209, 3400 Corrientes, Argentina*

Received 5 June 2006; accepted for publication 5 September 2007

A new species of the genus *Chresta* Vell. ex DC. (Vernonieae, Asteraceae) from the Brazilian state of Bahia is described and illustrated. The new species resembles *Chresta pinnatifida* (Philipson) H.Rob. but differs in having solitary glomerules, leaf bases clasping the stem and 35–40 capitula per glomerule. It can be distinguished from *Chresta harleyii* and *Chresta martii*, the other two species of the genus with pinnately lobed leaves, by the type of pubescence, leaf blade bases and florets number. In addition, a key to distinguish all the species of the genus is presented.

ADDITIONAL KEYWORDS: caatinga – Compositae – inselbergs – taxonomy.

INTRODUCTION

The genus *Chresta* Vell. ex DC. is distributed in the central highlands of Brazil, but mainly concentrated in the states of Bahia, Goiás and Minas Gerais. It contains perennial herbs or shrubs, having 2–12 florets per head and capitula densely congested, arranged in solitary or corymbose glomerules (Robinson, 1999).

Chresta was initially established by Vellozo (1831) in his *Flora fluminensis* based on the plates of *Chresta cordata* Vell. and *Chresta lanceolata* Vell. (nom. inval.), but was not provided with a valid description. The validation of *Chresta* was realized some years later by de Candolle (1836), who provided a legitimate description of the genus, including only one species, *Chresta sphaerocephala* DC. (= *C. cordata* Vell., nom. inval.). In the same publication, de Candolle (1836) raised *Vernonia* sect. *Pycnocephalum* Less. to generic status based on *Vernonia plantaginifolia* Less. and *Vernonia scapigera* Less., two taxa presently included in *Chresta*. The generic distinction between *Pycnocephalum* and *Chresta* was maintained until Gardner (1842) combined both genera and chose the latter.

An additional species of *Chresta* was described by de Candolle (1836) in a different genus, *Stachyanthus*, which was rejected in favour of the later *Stachyanthus* Engler nom. cons. (Icacinaceae). Robinson (1980) transferred *Stachyanthus* DC. to *Chresta*, while MacLeish (1984) considered it as a different genus providing the new name *Argyrovernonia*. The last generic name provided for the group is *Glaziovianthus* G. M. Barroso (Barroso, 1947), which has been included under the synonymy of *Chresta* by Robinson (1980), but was considered a separate genus by MacLeish (1985a).

Most of the recent treatments for the tribe Vernonieae have applied a broad concept for this group, including the different segregates in the synonymy of *Chresta* (Robinson, 1995, 1999). As presently delimited, the genus comprises 12 species that occur in cerrado, caatinga and campo rupestre habitats of the Brazilian plateau. In the present paper, a new species of the genus *Chresta* from Bahia is described and illustrated. The possible relationships of the new taxa

*Corresponding author. E-mail: mdematteis@agr.unne.edu.ar

are discussed and a key to distinguish all the species of the genus is also provided.

DESCRIPTION

CHRESTA AMPLEXIFOLIA DEMATTEIS, ROQUE & MIRANDA, **SP. NOV.** (FIG. 1).

Diagnosis: Haec species Chrestae pinnatifidae (Philipson) H.Rob. similis sed glomerulis solitariis et laminis foliorum sessilibus basi auriculatis differt. Herba erecta 30–40 cm altae, caulibus simplicibus striatis inferne sparse foliatis, puberulis et glanduloso-pubescentibus. Folia pinnatilobata, obovata vel obovato-lanceolata, 3–4.5 cm longa, 2–3 cm lata. Capitula 35–40, in glomerulis solitariis ad apicem ramorum disposita. Corolla 8–11 mm longa, lobis lanceolatis, paulo villosis.

Type: Brazil. Bahia. Mun. Ipuaçu, Monte Alto, 12°13′55′S, 39°4′35′W, 12.viii.2003, *A. C. Pereira*, *F. França*, *E. Melo*, *C. F. Lucca & P. L. Ribeiro 15* (*holotype* HUEFS, *isotype* CTES).

Description: Perennial herb 30–35 cm tall. Stems unbranched, ribbed, laxly leafy at the base, puberulent, hairs glandular, capitate, sessile. Leaves alternate, petiolate, membranaceous, discolorous; leaf blades obovate to oblanceolate, pinnately lobed, 3–4.5 cm long, 2–3 cm wide, irregularly dentate, acute at the apex, pungent, basally auriculate, clasping stem, glabrescent above, puberulent beneath, with glandular capitate hairs, pinnatinervate, secondary veins 3–5, prominent beneath; petioles alate, 15–20 mm long. Inflorescence terminal, compound; glomerules solitary, globose to subglobose, 10–15 mm tall, 15–20 mm diameter, largely pedunculate. Capitula 35–40, discoid, homogamous, sessile; receptacles flat, naked; involucres narrowly cylindrical, 8–10 mm tall, 3–5 mm diameter; phyllaries coriaceous, imbricate, 5–6 seriate, puberulent, pale-yellowish, outer ones lanceolate, 6–8 mm long, 1.5–2 mm wide, aristate at apex, basally truncate, inner bristles narrowly elliptic, 9–10 mm long, 1.3–1.5 mm wide, acute to aristate at apex, attenuate at base. Florets 3–4, violet to pink; corollas tubular, deeply 5-lobate, 8–11 mm long, tube sparsely glandular, corolla lobes lanceolate, 2–3 mm long, pilose and glandular hairy at apex. Anthers 2–2.5 mm long, basally caudate, rounded, apical appendages 0.2 mm long, 0.4–0.5 mm wide, ovate, obtuse at apex. Style 6–6.5 mm long, branches pilose. Cypselas obconical, costate, glabrous, 6–7 mm long; pappus deciduous, pluriseriate, bristles irregular, paleaceous to subpaleaceous, 4–6 mm long.

Phenology: Flowering specimens have been collected in August, but during the current year we have also observed flowering plants in July. The blooming period seems to range between these 2 months.

Distribution and ecology: The new species is restricted to caatinga vegetation, growing in dry, rocky soils. It is only known from the type locality to the east of the Brazilian state of Bahia. This constitutes an area of low hills with granite outcrops which are usually named inselbergs (França, Melo & Santos, 1997; Porembsky & Barthlott, 2000). The population size is extremely reduced, composed of fewer than 10 plants.

Chresta amplexifolia presents a combination of characters that distinguish it from the other 11 taxa of the genus (Table 1). The most evident ones are the solitary glomerules, the pinnately lobed leaves, the leaf blades clasping stem and the pilose corolla lobes (Fig. 1). The new species resembles *C. pinnatifida*, especially in leaf shape and pubescence. Nevertheless, *C. pinnatifida* differs by having numerous glomerules arranged in corymbose synflorescences, 20–25 capitula per glomerule and the leaf blades cuneate at the base.

Chresta harleyii and *Chresta martii*, the other two species of the genus having pinnately lobed leaves,

Table 1. Morphological comparison of the new species *Chresta amplexifolia* and its allied taxa

Character	*C. amplexifolia*	*C. harleyii*	*C. martii*	*C. pinnatifida*
Blade shape	Obovate to oblanceolate	Narrowly elliptic	Ovate to rhomboid	Elliptic
Blade base	Clasping stem	Cuneate	Cuneate	Cuneate
Indumentum	Not silvery–greyish	Silvery–greyish	Silvery–greyish	Not silvery–greyish
Glomerules number	1	1	1	4–10
Glomerule shape	Globose	Globose to subglobose, rarely elongate	Conical to elongate	Globose
Heads number	35–40	30–40	30–40	20–25
Florets number	3–4	8–10	12–13	4–6
Corolla length (mm)	8–11	12–14	12–15	16–20

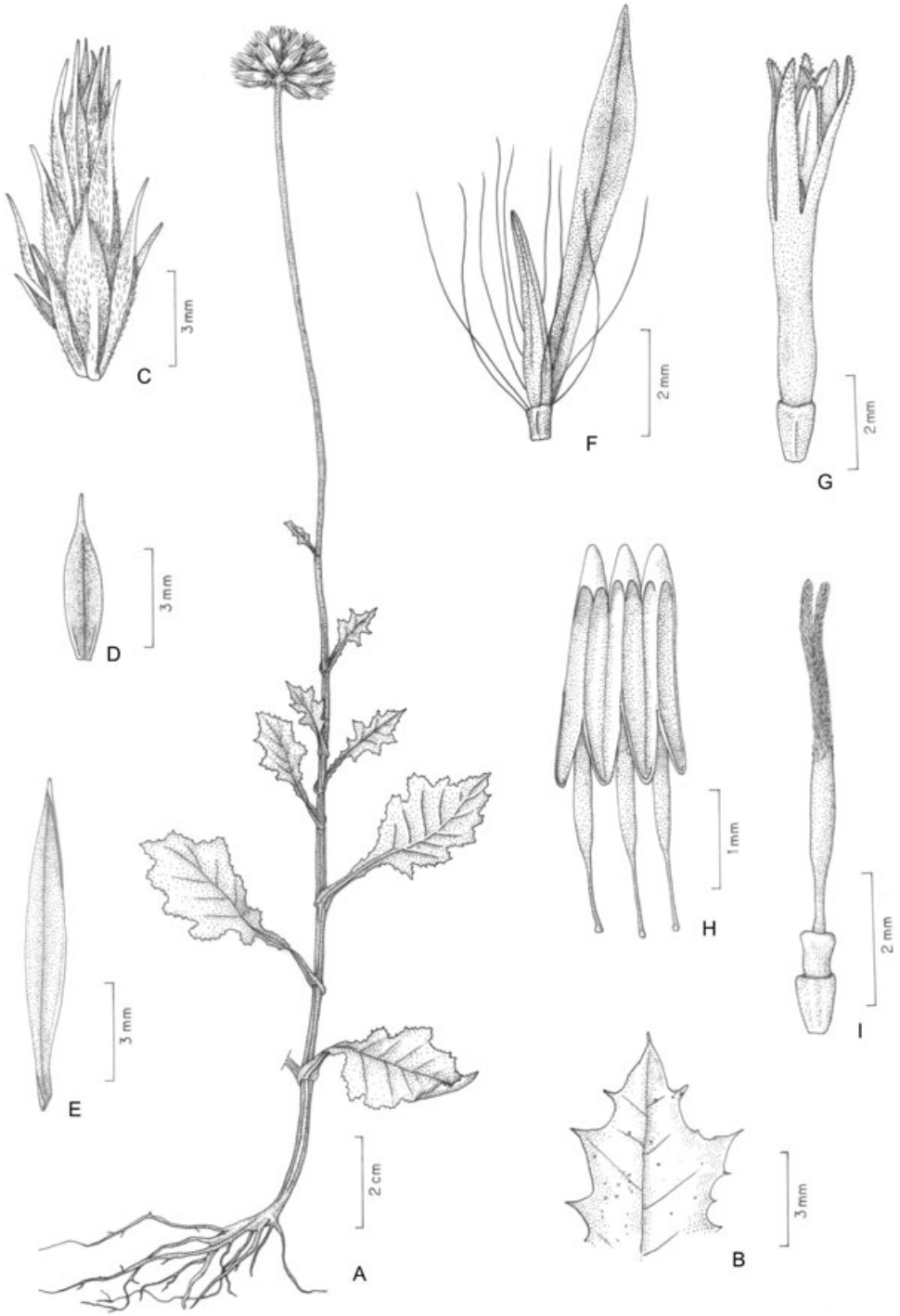

Figure 1. *Chresta amplexifolia*. A, plant. B, detail of the leaf blade. C, involucre. D, outer phyllary. E, inner phyllary. F, floral bud showing pappus. G, floret without pappus showing deeply 5-lobe tubular corolla. H, anthers. I, style, nectariferous disc and cypsela (*Pereira & al. 15*, holotype).

can be separated by the type of pubescence, leaf base and florets number, among other features. These two species present silvery–greyish hairs, cauline leaves not clasping stem and more than 8 florets per head.

The new species can be distinguished from the remaining taxa of the genus by the following key, which is largely based on the available treatments for the subtribe Chrestinae H.Rob. (Baker, 1873; Robinson, 1980; MacLeish, 1984, 1985a, b).

KEY TO THE SPECIES OF *CHRESTA*

1. Corollas red to rose, with throat yellowish. Pappus 2 seriate 2
1a. Corollas purple, including throat. Pappus 5–10 seriate 3
2. Leaf blades obovate, 3–10 cm wide, pinnatinervate ..... *C. curumbensis* (Philipson) H.Rob.
2a. Leaf blades oblanceolate, 1–3 cm wide, with parallel venation ..... *C. speciosa* Gardner
3. Leaves pinnately lobed 4
3a. Leaves entire, glabrous to sparse tomentose 7
4. Glomerules 1, solitary 5
4a. Glomerules 4–10, corymbose ..... *C. pinnatifida* (Philipson) H.Rob.
5. Stems and leaf blades densely tomentose, with silvery–greyish hairs. Basal and cauline leaves not clasping stem. Florets 8–13 6
5a. Stems and leaf blades tomentulose. Basal leaves clasping stem. Florets 3–4 ..... *C. amplexifolia* Dematteis, Roque & Miranda
6. Glomerules conical to campanulate. Leaves petiolate, rhomboid–ovate ..... *C. martii* (DC.) H.Rob.
6a. Glomerules globose to subglobose. Leaves sessile to subsessile, narrowly elliptic ..... *C. harleyii* H.Rob.
7. Scapose herbs, leaves in a base rosette 8
7a. Erect herbs, leaves cauline 9
8. Blades membranaceous. Heads 5–25 per glomerule. Florets 4–12 ..... *C. plantaginifolia* (Less.) Gardner
8a. Blades coriaceous. Heads 20–200 per glomerule. Florets 3 ..... *C. scapigera* (Less.) Gardner
9. Leaves elliptic to oblong, 1.5–10 cm wide 10
9a. Leaves linear, 0.3–0.6 cm wide ..... *C. angustifolia* Gardner
10. Leaf blades 3–7 cm long, 1.5–3.5 cm wide. Cypselas 1.2–2.4 mm long 11
10a. Leaf blades 8–15 cm long, 5–10 cm wide. Cypselas 2.5–3.5 mm long ..... *C. sphaerocephala* DC.
11. Blades cuneate at base, glabrous ..... *C. exsucca* DC.
11a. Blades basally attenuate, tomentulose ..... *C. pycnocephala* DC.

ACKNOWLEDGEMENTS

The authors thank Natanael Nascimento dos Santos and Maria Daniela Guimarães for preparing the line drawings. Special thanks go to Flávio França and Efigênia de Melo for the type specimen collection and the anonymous referees for their comments on the manuscript. This work has been partially supported by grants from the Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICET) and the Secretaría General de Ciencia y Técnica de la Universidad Nacional del Nordeste (SGCyT-UNNE).

REFERENCES

Baker JG. 1873. Compositae. I. Vernoniaceae. In: Martius CFP, Eichler AW, eds. *Flora Brasiliensis* 6 (2). Leipzig: Fleischer, 1–179.

Barroso GM. 1947. Um gênero novo da familia Compositae. *Revista Brasileira de Biologia* **7:** 113–115.

de Candolle AP. 1836. *Prodromus systematis naturalis regni vegetabilis*, vol. 5. Paris: Treuttel & Würtz.

França F, Melo E, Santos C. 1997. Flora de Inselbergs da Região de Milagres, Bahia, Brasil: caracterização da vegetação e lista de espécies de dois inselbergs. *Sitientibus* **17:** 163–184.

Gardner G. 1842. Characters of three new species of *Chresta*, with remarks on the identity of *Pycnocephalum* and *Chresta*. *London Journal of Botany* **1:** 238–241.

MacLeish NFF. 1984. *Argyrovernonia* and *Paralychnophora*: new names in the tribe Vernonieae (Asteraceae/Compositae). *Taxon* **33:** 105–106.

MacLeish NFF. 1985a. Revision of *Glaziovianthus* (Compositae: Vernonieae). *Systematic Botany* **10:** 347–352.

MacLeish NFF. 1985b. Revision of *Chresta* and *Pycnocephalum* (Compositae: Vernonieae). *Systematic Botany* **10:** 459–470.

Porembsky S, Barthlott W. 2000. *Inselberg: biotic diversity of isolated rock outcrops in tropical and temperate regions*. Berlin: Springer.

Robinson H. 1980. Notes on the Lychnophorine genera *Chresta* and *Eremanthus*. *Phytologia* **45:** 89–100.

Robinson H. 1995. New combinations and new species in American Vernonieae (Asteraceae). *Phytologia* **78:** 384–399.

Robinson H. 1999. Generic and subtribal classification of American Vernonieae. *Smithsonian Contributions to Botany* **89:** 1–116.

Vellozo JMC. 1831. *Florae fluminensis icones* 8. Paris: Senefelder.