



Notes on *Cnidoscolus* (*Euphorbiaceæ*), 27-29

Francisco Javier FERNÁNDEZ CASAS

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Notes on *Cnidoscolus* (*Euphorbiaceae*), 27-29

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Keywords. Systematics, New species, *Cnidoscolus* sect. *Cnidoscolus* (*Euphorbiaceae*), Brazil (Bahia).

Abstract. Two new species are proposed under *Cnidoscolus* (*Euphorbiaceae*): *C. hypokerinus* and *C. rupestris* from Brazil (Bahia).

Zusammenfassung. Es wird hier zwei neue Arten der Gattung *Cnidoscolus* (*Euphorbiaceae*) beschrieben: *C. hypokerinus* und *C. rupestris* aus Brasil (Bahia).

Resum . Deux nouvelles esp ces sont d crites dans le genre *Cnidoscolus* (*Euphorbiaceae*): *C. hypokerinus* et *C. rupestris* du Br sil (Bahia).

Resumo. Descrevem-se duas novas esp cies no g nero *Cnidoscolus* (*Euphorbiaceae*). Tr s s o brasileiras: *C. hypokerinus* e *C. rupestris* de Bahia.

Resumen. Se describen dos especies nuevas del g nero *Cnidoscolus* (*Euphorbiaceae*). Ambas son brasile as, del estado de Bahia: *C. hypokerinus* y *C. rupestris*.

Two new species are described in the genus *Cnidoscolus* Pohl (*Euphorbiaceae*, *Crotonoideae*, *Manihoteae*). Both were discovered during the recent study (2006) of the collections of the herbaria ALCB (Salvador, Bahia), CEPEC (Ilh us, Bahia), HUEFS (Feira de Santana, Bahia), SP (S o Paulo), SPF (S o Paulo), whose responsible they put kindly to my disposition. I would like to express my gratitude to the curators of these herbaria for so kindly making them available to me. One of the novelties was also observed and photographed in the field, repeatedly, in February of 2006, by myself and my friend Andr s Ceballos Jim nez, an engineer in Madrid.

The two new species described are attributed to the type series of section *Cnidoscolus*, both autonomous. The series is characterized by the presence of prickles and by whole leaves, without true summipetiolar glands, or with very reduced ones, or which have been replaced by urticant bristles to take their place, cf. F. J. FERN NDEZ CASAS & J. M. PIZARRO DOM NGUEZ (2001: 40s, n  I.AA), F. J. FERN NDEZ CASAS (2003: 81-82).

Regarding their distribution, both species seem to be endemisms which are very localized in rocky outcrops of the north and center of the state of Bahia.

27 *Cnidoscolus* Pohl sect. *Cnidoscolus* ser. *Cnidoscolus* *autonymus*

SPECIES TYPICA: *Cnidoscolus hamosus* Pohl (1827)

DISTR. GEOGR. **America australis:** Brasil, Per ; cf. tabula 1 (pag. 344).

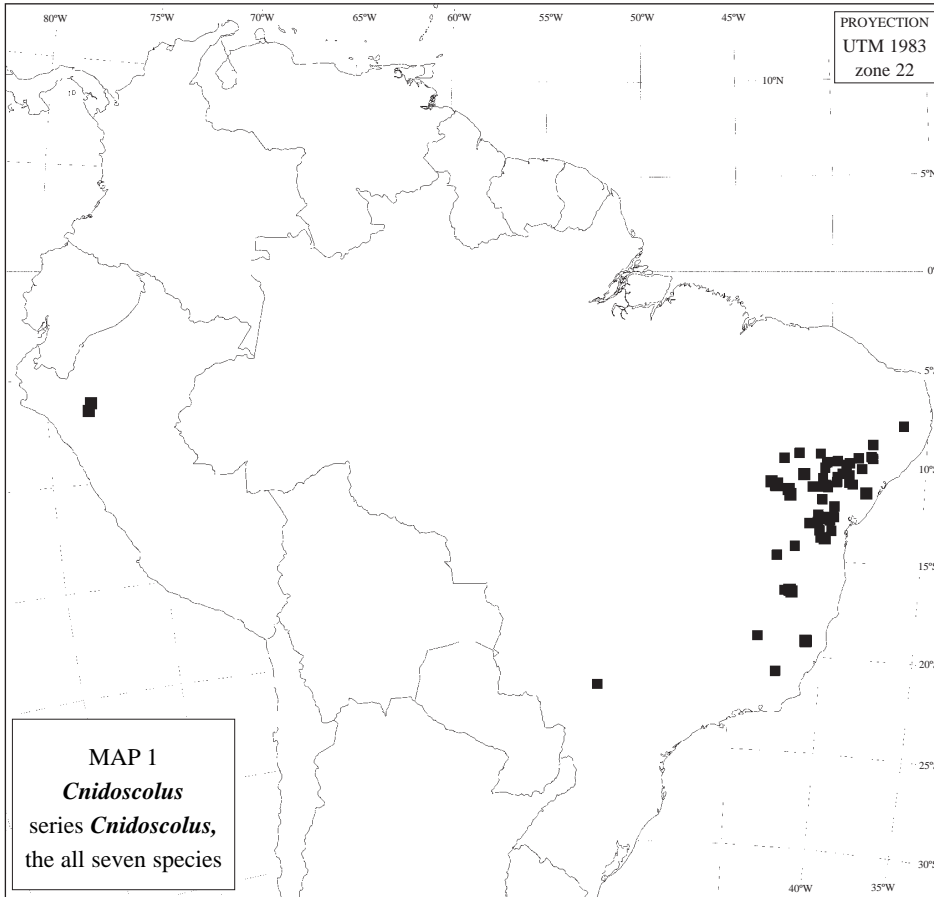
BIBLIOGR. F. J. FERN NDEZ CASAS & J. M. PIZARRO DOM NGUEZ (2001: 41, n  I.AA.1a); F. J. FERN NDEZ CASAS & J. M. PIZARRO DOM NGUEZ (2005: 1).

The distribution of the typical section is so far only known in two South American countries: Per  (two species in both departments) and Brasil (five species in eight states). As can be seen on map 1, their distribution is clearly extra-Amazonian.

The addition of these two new species described here to the five already known makes a total of seven species, all of them South American, in the configuration of the typical series of the genus *Cnidoscolus*. They can be distinguished with the simple key that continues.

KEY FOR THE SPECIES OF THE SERIES CNIDOSCOLUS POHL, AUTONYMOUS
there are seven species; their distributions are indicated

- 1a Back of leaves white and tomentose or whitish-green 2
- 1b Back of leaves glabrous or pilose, on no account can it be considered white and tomentose or whitish-green 4
- 2a Leaf margins provided with characteristic cylindrical glands; leaf back slightly or very white and tomentose. Brasil (Bahia) 28. *C. rupestris*
- 2b Leaf margins without these cylindrical glands; leaf back fairly white and villose 3
- 3a Leaf lamina 6-10 cm. Fertile stamens ca. 17, 3-verticillate. Perú (Amazonas)
. *C. hypoleucus*
- 3b Leaf lamina 2-4 cm. Fertile stamens up to 30, up to 6-verticillate. Brasil (Bahia)
. *C. byssinus*
- 4a Leaf back fairly glabrous; leaves obtuse. Brasil (Bahia) 27. *C. hypokerinus*
- 4b Leaf back slightly or very villous; leaves acute or obtuse 5
- 5a Fertile stamens ca. 26, 6-verticillate. Perú (Cajamarca) *C. Liesneri*
- 5b Fertile stamens <20, 4-verticillate. Brasil 6
- 6a Fertile stamens ca. 15. Leaf margins totally entire. Flowers small, <1,5 cm. Brasil (Espírito Santo, Minas Gerais, Piauí) *C. hamosus*



- 6b Fertile stamens 18-20, 4-verticillate. Leaf margins finely crenated. Large flowers, >2 cm. Brasil (Alagoas, Bahia, Mato Grosso do Sul, Minas Gerais, Pernambuco, Sergipe)
 *C. pubescens*

28 ***Cnidoscolus hypokerinus*** Fernández Casas, **spec. nov.**, *Fontqueria* **55**(45): 345-351, n° 28 (12-xii-2006)

TYPUS: *E. de Melo 2174 & al.* (HUEFS 27686, holo-)

- Sectio *Cnidoscolus* Pohl, subsectio *Cnidoscolus*, series *Cnidoscolus*, [autonymus]

DISTR. GEOGR. **America australis**: Brasil (Bahia: munic. Iaçu); cf. tabula 2 (pag. 348).

ILLUSTR.: Laminæ nostræ i (pag. 345), ii (pag. 346), iii (pag. 347).

ABBREVIATA DIAGNOSIS vel character essentialis

Ad *Cnidoscolo hamoso* Pohl aliquo modo similis, sed foliis utrinsecus glabris atque obtusis, aculeis rectis nec hamosis, præcipue differt.

MAIN DIAGNOSTIC FEATURES or diagnostic characters

Very similar to *Cnidoscolus hamosus* Pohl but it differs in its obtuse leaves, glabrous on both sides, and in the straight, not hooked, prickles.

LATINA DESCRIPTIO

Sicut collectorum schedula frutex; rami profuse scandentes apicibus ad rupes applicatis; folia discoloria, membranacea; flores masculi albi, antheræ flavæ; flores fœminei stylis læte virentibus.

INDUMENTUM. *Setis* urticantibus exceptis planta omnino glaberrima. *Setæ magnæ* 4-5 mm, iuxta basim foliarum in vicem glandularum summipetiolarium dispositæ; rectæ, hyalinæ; basibus striatis, dolioliformis, subpedunculatis. *Setæ mediæ* 1-2 mm, secus margines foliorum antrorse dispositæ; rectæ vel levissime sigmoideæ, hyalinæ; basibus asymmetricis oblique insertis.

FRUTEX lignosus, ramosus, scandens, prostratus; rami retrorsum aculeati. *Aculei* validi, 3-5 × 2 × 3 mm, nitidi, e basi late elliptica acutissimi, apicibus hyalinis. *Cortex* griseo infuscatus, longitudinaliter striatus.

FOLIA setis urticantibus exceptis omnino glaberrima. *Cicatrix* ramo remanente lunata vel stricte reniformis, quinque cicatricibus vascularibus prædita. *Stipulæ* caducæ, quinque-sex digitatæ, glanduloso capitata, ca. 1 × 1,5 mm; intus ad basim glandulis ovoideo globulosis pedunculatis præditæ. *Petiolus* brevis, 0,3-0,5(-1) mm, supra canaliculatus. *Glandulæ summipetiolares* destitutæ, nisi si setæ urticantes magnæ suum locum occupantes eas fingunt. *Limbus* membranaceus, discolor, obtusus vel emarginatus; *margo* perstrictus albo cartilagineus; *apice* obtuso, cuspidatum; *nervium medium* supra parum impressum vel æquans, subtus prominens, omnino apterum; *nervia lateralia* (4-)5-6(-7) in quoque latere, brochidodroma; *nervia secundaria* reticulo clauso delineantur.

INFLORESCENTIÆ axillares, breves, laxæ, paucifloræ, omnino glaberrimæ, 3-4 dichasiales. *Pedunculus* primarius 0,5-1,5 cm, validus, trigonus vel tetragonus, florem fœmineum desinens; *secundarius* sursum gradatim infirmior atque brevior. *Bracteæ* triangulares, uninervatæ, integerrimæ, 1,5-2 × 1,3-1,5 mm, utrinque eglandulosæ, ad basim glandulis lateralibus globulosis vel subglobulosis præditæ. *Bracteolæ* bracteis similimæ sed minores, deltoideæ.

FLOS MASCULUS unicus fractus tantum visus. *Corolla* alba, ad 9-10 mm, usque ad medium coalita, glabra, extus albo puncticulata, intus parce et tenuissime araneosa; *petala* obtusa, oblongo elliptica. *Discus* sessilis, plus minusve annularis, glaberrimus, glandulosus, ad 0,3 × 0,6 mm. *Columna staminalis* omnino glaberrima. *Stamina* decem

(?, difficilis observartionis), obscure biverticillata. *Antheræ* 0,8-1,0 × 0,5 mm, dosifixæ, submedifixæ, introrsæ, exclusæ. *Staminodia* tres, 6-8 mm, subulato filiformia.

FLORES FÆMINEI ignoti mihi sunt; sed vidi fructum unicum atque centalem in unaquaque inflorescentia. *Calyptra* sub regmate parum evoluta. *Discus* sub regmate remanens subsessilis, glaberrimus, annularis, glandulosus, ad 0,5 × 1,5 mm, integerrimus. *Staminodia* quinque, brevia, subulato filiformia, ad 0,3 mm.

REGMA (unum tantum visum) glabrum, apiculatum. *Calyptra* minima, sub regmate inconspicua, obtusissime quinquedentata, margine plano vel modice undulato, strictissimo, coriaceo, glabro. *Epicarpium* herbaceum, rugulosum, ad 0,7-0,8 mm crassum. *Endocarpium* osseum, apicem versus 0,7-0,8 mm crassum. *Sporoecbolus* minimus, aliquo modo figura late reniformis, 1,5 × 1,8 mm, sursum pulvinulis duobus præditus. *Columella* clavæformis, 6 × 1,3 mm, alis tribus percusa.

SEMEN (unicum tantum visum) 16-18 × 9-11 × 3-4 mm, ex badio vel læte castaneo albo variegatum; *sedes* minima, ad 1 × 1,5 mm, cordata, ±60° prona, depressionibus duabus prædita; *dorsum* parum convexum, ecarinatum, basi convexa nec emarginata; *apex* acuto acuminatus; *imaginis linea* (linea perimetralis maxima) fere plano coercita, tantum in apice (dorso propinqua) atque iuxta sedem (ventri propinqua) detrusa; *hilum* infra mediam carunculam in apiculo ventrali ortum, liberum, carinæ ventralis colligatum; *carina* ventralis omnino picta, læte castanea, ambabus extremitatibus exceptis fere tota longitudine plana vel levissime convexa; *pleuræ* laterales parum convexæ nec planæ, indistintæ; *scapulæ* læves, læte castaneæ; *caruncula* triangularis, 2 × 2,5 mm, albicans, lævis, concolor, dorsaliter ultra apicem exstans; carunculæ ventralis figuram aliquo modo late vel transverse trullatæ exhibet.

REGARDING THE ETYMOLOGY AND ORTHOEPY of the specific name

The specific name comes from a Latinization the Greek name for the barberry –known also in Spanish as arlo, alguese and bérbero–, *hypokerinus*. They recall the leaves of the bush whose scientific name is *Berberis* (*Berberidaceæ*, or *Ranunculaceæ* in a broader sense). This word is stressed on the antepenultimate syllable, hypokérinus. *Hypokerinus* is formed by prefixing the Greek genitive preposition ὑπό, meaning below, to the adjective ἐπιείριό ι ῖ ι, meaning waxy, with the appearance or consistency of the wax. The name describes the glaucous and waxy leaf back in the barberry bush. Of course the epithet is not chosen by its literal etymological meaning, but rather for the superficial vegetative resemblance of the barberry with our new species.

ENGLISH DESCRIPTION

As described in the collectors' label, this bush is very ramified, with branches applied against the rock; discolorous leaves, membranaceous; white male flowers, yellow anthers; female flowers with bright green styles.

INDUMENT. Very glabrous plant, without any trichome formation other than the traditional urticating bristles that characterize the genus. *Large urticating bristles* 4-5 mm, located at the base of leaf lamina, in the place of the summipetiolar glands; these are straight, hyaline, with lengthwise striated barrel-shaped and subpedunculate base. *Medium-sized urticant bristles* 1-2 mm, born along the leaf margins, antrorse, straight or very slightly sigmoid, hyaline, with their asymmetric bases obliquely inserted.

BUSH woody, ramified, prostrate. *Branches* retrorse prickly. *Prickles* lacerating, 3-5 × 2 × 3 mm, shiny and well defined, very sharp, the base is elliptic and the apex translucent. *Bark* gray bark, with longitudinal grooves.

LEAVES very glabrous, except for the urticant bristles at the base and along the margin; after their fall, the scars remaining on the branch are half moon-shaped or almost reniform, and show the imprint of five vascular bundles. *Stipules* drooping, 5-6-digita-

HUEFS
27686
FEIRA DE SANTANA
BAHIA - BRASIL



TYPUS (holo-)

Cnidoscopus hypokerinus Fernández Casas

BRASIL, (05) BAHIA:
21111-08 - sítio Morro do Colú, 12°45'05" S, 039°57'51" W, 336 m.
Arbusto com ramos caipotes, com líhas arborescentes. Arbores-
cente quando jovem, depois árvore. Ramos prostrados na base; folhos
membranáceos, ásperos, pedúnculos e nervos serrilhados.
Ramos femininos com ramos de caule verde claro, fruto maduro
seco, imaturo verde. Fl. Coréia, F. França, E. de Melo 2174, 6.
Miranda & D. Carneiro. Fevereiro 24, V. 1967. (HUEFS 27686).

Rev. F. J. FERNÁNDEZ CASAS (MARI), 02, VI-7/2006

Herbário da Universidade Estadual de Feira de Santana
Cnidoscopus obtusifolius POHL
Det:

HERBÁRIO	27686
Universidade Estadual de Feira de Santana	
Feira de Santana - Bahia - Brasil	
Brasil, Bahia, local: Morro do Colú, 336 m. 12°45'24" S 039°53'54" W	
Eucalipto com rocha exposta, com líhas de complexos arbustivos.	
<i>Cnidoscopus</i>	EUPHORBIACEAE
Arbusto com ramos decandentes cujos ápices prostram-se na rocha. Folhas membranáceas dissecadas. Pedúnculos brancos, aristas amareladas. Flor feminina com ramos do eufólio verde claro. Fruto maduro seco e fruto imaturo verde.	
Melo, E. de 2174 F. França, C. Coréia, E. Miranda & D. Carneiro 24/5/1967	
Det:	



Plate I. *Cnidoscopus hypokerinus* Fernández Casas. E. de Melo 2174 (HUEFS 27686, holo-). Holotype voucher.

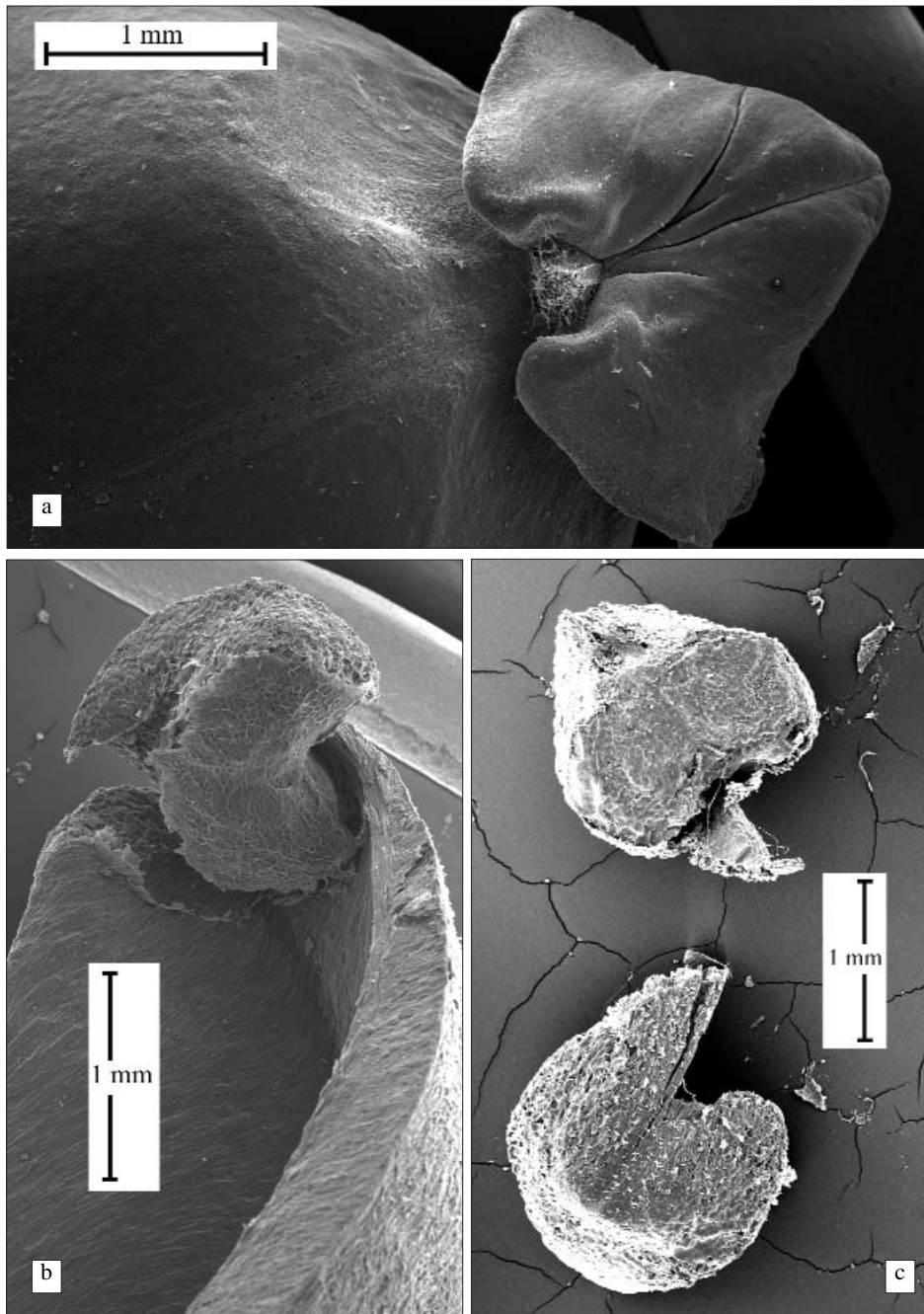


Plate II. *Cnidoscolus hypokerinus* Fernández Casas. a) Seminal caruncle showing the hilum. b) Sporoechbole attached to half endocarpic locule. c) Two sporoechboles, upwards (up) and downwards (down).

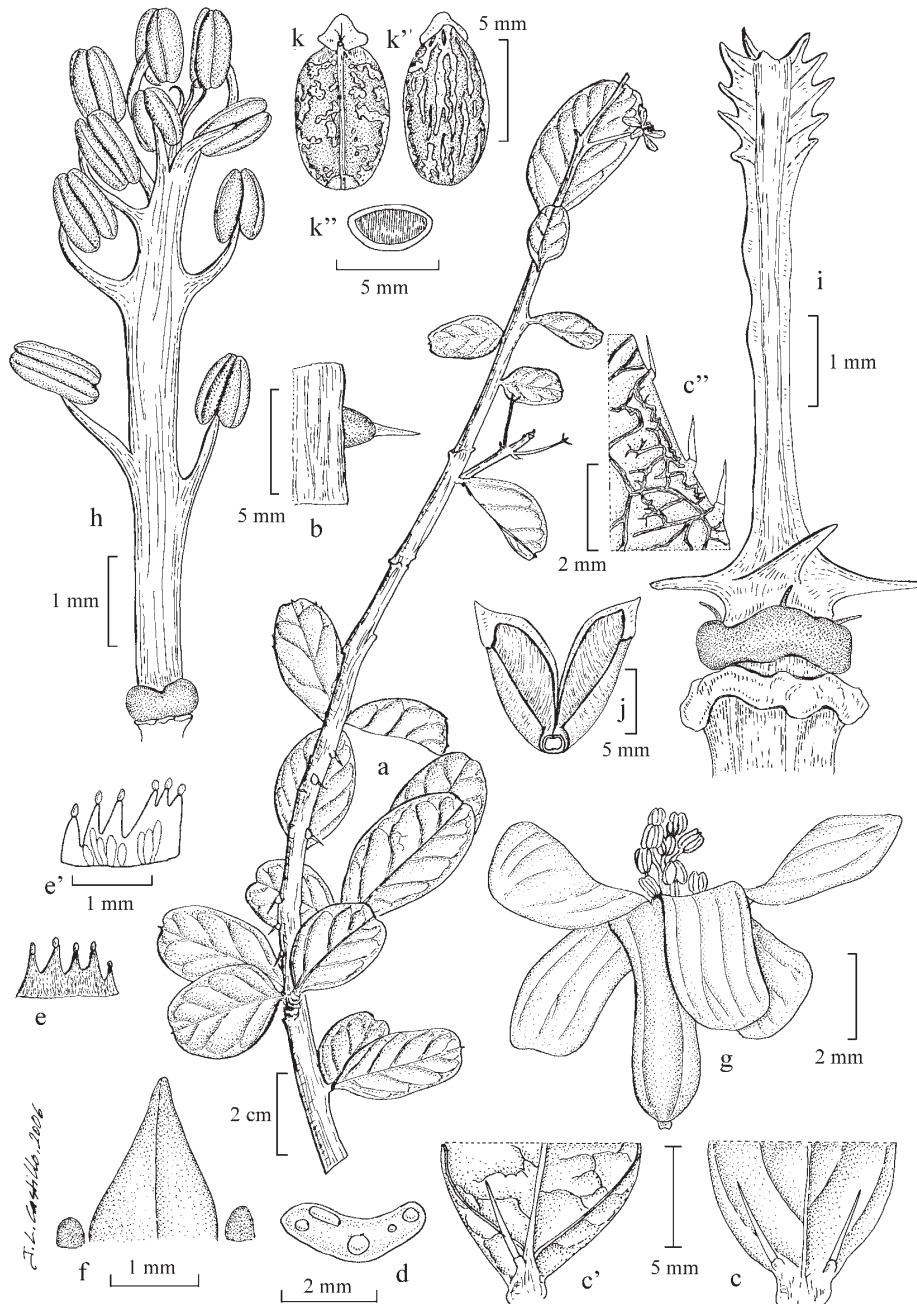


Plate III. *Cnidocolus hypokerinus* Fernández Casas. *E. de Melo* 2174 (HUEFS 27686, holotype). a) Fertile branch. b) Prickle. c) Leaf, upper side. c') Leaf back. c'') Margin leaf, with antrorse urticant bristles. d) Leaf scar. e) Stipule, upward. e') Stipule back. f) Hypsophyll. g) Male flower. h) Androecium. i) Columella, disc and calyptra. j) Mericarp. k) Seeds.



te, glandulose headed, ca. 1×1.5 mm; next to and inside their base they have some ovoid globulose and pedunculate glands. *Petiole* short, 0.3-0.5(-1) mm, grooved on the upper face. *Summipetiolar glands* absent, unless they are represented by some urticant bristles that occupy their exact place. *Leaf lamina* membranous, entire, discolorous, obtuse or emarginate, with a lighter-colored back; *margin* cartilaginous narrow, white; *apex* obtuse, cuspidate; *midrib* slightly imprinted on the face, or even with the lamina, prominent on the back, wingless in all its parts; *secondary nerves* (4-)5-6(-7) to each side, brochidromous; *tertiary nerves* form a closed tessellated net.

INFLORESCENCES axilar, short, loose, few-flowered, very glabrous everywhere, with 3-4 dichasia. *Primary peduncle* 0.5-1.5 cm, tough, three- or four-angled, ending in a female flower. *Secondary peduncles* gradually smaller and finer. *Bracts* three-angled, one-nerved, entire, $1.5-2 \times 1.3-1.5$ mm, without glands on both pages, with spherical or subglobose glands to the sides, next to the base. *Bracteoles* similar to the bracts but deltoides.

MALE FLOWERS. We have only seen one, broken. *Corolla* white, ca. 9-10 mm, connate to half their length, glabrous, with white points on the outside, inside slightly cobwebby. *Petals* elliptic obtuse, oblong. *Disc* sessile, more or less ring-shaped, quite glabrous, glandulose, ca. 0.3 × 0.6 mm. *Staminal column* glabrous in all its parts. *Stamens* ten (?), difficult to observe), obscurely biverticillate. *Anthers* 0.8-1.0 × 0.5 mm, dorsifixed, almost medifixed, introrse and excluded. *Staminodes* three, 6-8 mm, subulate filiform.

FEMALE FLOWERS unknown, but we deduce that there is only one in each inflorescence, as we have been able to observe a single fruit in each one, always in central and basal position. *Calyptra* under the regma poorly developed. The *disc* that can be seen under the regma is sessile, quite glabrous, ring-shaped and glandulose, ca. 0.5 × 1.5 mm, absolutely entire. *Staminodes* five, short, subulate, thread-like, ca. 0.3 mm.

REGMA (we have only seen one acceptably developed) quite glabrous, apiculate. *Calyptra* almost non-existent, barely visible under the regma, very obtusely 5-dentate, with a flat or slightly wavy, very narrow, coriaceous margin, glabrous. *Epicarp* ca. 0.7-0.8 mm thick, herbaceous, rough. *Endocarp* bony, 0.7-0.8 mm thick towards the apex. *Sporoecbole* tiny, with a somewhat kidney-shaped figure, 1.5 × 1.8 mm, with two pads in their superior part. *Columella* clavate, 6 × 1.3 mm, with three percurrent wings.

SEEDS (we have only seen one) 16-18 × 9-11 × 3-4 mm; *testa* variegated on light chestnut background; the seat is very small, ca. 1 × 1.5 mm, cordate, prone about 60°, with two depressions that fit on the pads of the esporoecbole; *back* not very convex, without keel, unnotched base convex; apex acute acuminate; the *maximum perimeter outline* is almost on a single plane, only in the apex it come a little closer to the back, and approaches the ventral part at the base; the *hilum* is born on an apicule, below the caruncle; *ventral keel* totally marked, drawn only, without relief, light brown, flat or slightly convex along their length except for both extremities; *flanks* not very convex and not flat, not very defined; *shoulders* soft, light brown; *caruncule* triangular, 2 × 2.5 mm, whitish, smooth, concolorous, standing out under the apex when seen from the back; the whole caruncle for the ventral part describes what could be termed a transverse trowel shape.

OBSERVATIONS

Although I have described the ventral keel of the seed like drawn, as marked, that is to say without relief, I see that it is perceived albeit weakly, in the electronic microphotograph in plate iii, fig. a (page 348). This indicates that there is at least a change in texture.

EXAMINED SPECIMEN

BRASIL, (05) BAHIA:

24LUL98 -12.80°, -039.97°: «(munic. Iaçu) morro do Coité: 12°45'24"S, 039°57'54"W, 336 m. Encostada com rocha exposta, com ilhas arbustivas. Arbusto; ramos escandentes cujos ápices prostranse na rocha; folhas membranáceas, discolors, pétalas brancas, anteras amarelas; flôres femininas com ramos de estilete verde claro; fruto maduro seco, imaturo verde», C. Correia, F. França, E. de Melo 2174, E. Miranda & D. Carneiro Torres, 24-V-1997 (HUEFS 27686, holo-; type *C. hypokerinus*).

29 ***Cnidoscolus rupestris*** Fernández Casas, **spec. nov.**, *Fontqueria* **55**(45): 351-360, n° 29 (12-xii-2006)

TYPUS: A. Freire Fierro 1951, J. M. Martins, R. Moraes, P. L. da Rocha, M. Rodrigues, G. Sugliano & J. P. Yvert, 14-X-1990 (SPF 86117, holo-)

- Sectio *Cnidoscolus* Pohl, subsectio *Cnidoscolus*, series *Cnidoscolus*, [autonymus]
 DISTR. GEOGR. **America australis**: Brasil (Bahia); cf. tabula 3 (pag. 358).
 ILLUSTR.: Laminæ nostræ iv (pag. 353), v (pag. 354), vi (pag. 355), vii (pag. 356).

ABBREVIATA DIAGNOSIS vel character essentialis

Ad *Cnidoscolo pubescente* Martius in Pohl aliquo modo similis, habito minore, foliis minoribus, deorsum dense araneoso pubescentibus præcipue discrepat. A *Cnidoscolo byssino* Fernández Casas proximo, foliis maioribus, deorsum minus dense pubescentibus differt. Ab ambabus congeneribus glandulis cylindricis secus margines foliarum atque staminarum numeris intermediis abhorret.

MAIN DIAGNOSTIC FEATURES or diagnostic characters

Very like *Cnidoscolus pubescens* Martius in Pohl but it differs in its smaller size, with smaller leaves having the back densely cobwebby tomentose. Also like *Cnidoscolus byssinus* Fernández Casas, but it differs in being a taller plant, with leaves bigger and less tomentose. From both species it differs in the presence of columnar glands along the leaf margin.

LATINA DESCRIPTIO

Sicut collectorum schedulæ frutex vel arbuscula usque 3 m × 5 cm ø, aculeatus, urens; folia discoloria, membranacea; alabastra atque bracteæ virentia; petala alba.

INDUMENTUM. *Setæ* urticantes magnæ atque mediæ foliis, regmatibus atque inflorescentiis frequentes. *Pili* simplices ubique, abaxialiter in foliis copiose dispositi.

FRUTEX 1-3 m, profuse albo lacticiferus. *Rami* vis aculeati; iuvenilis rubro corticatis, veteris griseo corticatis; extremitatis foliatis exceptis pæne aphylli. *Aculei* validi, acutissimi, nitidi, e base elliptica, lateraliter parum compressi; apicibus vulnerantis conicis, hyalinis.

FOLIA magis chartaceis quam herbaceis, in extremitatis ramulorum parum congestis. *Stipulæ* ignotæ, nulla omnino fuit; inter meos studios bahiensis in oblivionem fuit. *Petiolus* brevis, 2-3 mm, modice hirsutus, subcylindricus, iuxta limbum atque adaxialiter vix canaliculatus. *Glandulæ summipetiolares* ut videtur nullæ. *Limbus* oblongus ellipticus vel fere circularis, (2)3-4(5) × (1,5)2-3(4) cm, discolor; supra viridis, glabrus, albo punctulatus, estimulosus; subtus plus minusve albicans, araneoso tomentosus, secus nervos præcipue rare stimulosus; nullibi neurolomus. *Nervius medius* (longitudinalis) supra parum impressum, subtus valde prominens, modice rubescens. *Nervia lateralia* (secudaria) 6-9 in quoque latere, prona, 45° desinentia, craspedodroma, dentibus glandulosis desinentibus, vel iuxta margines evanida. *Nervia terciaria* reticulum desinentis. *Margo* nec planus, aliquo modo undulatus, grosse dentatus; setis urticantibus magnis inordinatim ciliatus, prorsum pronis; columnis glanduliferis distantibus præditus; columnæ cylindrico pedunculatæ, ad 1 × 0,2 mm, præcipue ad basim hirtæ, sursum glabrescens, extremitates glandulosas æquantes, parum dilatatas, iuveniliæ cerinæ, digitiformes, vetustæ fuscæ, globosæ vel depressæ.

INFLORESCENTIÆ. terminales, paucifloræ, 2-3 cm, longitudine foliarum non superantes æquantesve; parum pilosæ; setis raris urticantibus magnis præditæ. *Axes* (vel petioli communis) inferne glabris sursum gradatim minute et rare hirtulis, vix striatis; basalis 7 mm, sursum modice abbreviatis. *Bracteæ* triangulares, glabræ vel pilis raris præditæ; apice interdum glanduloso mucronato; ecarinatæ sed ad mediam lineam longitudinalem fusciores; secus margines diminute albociliatæ; ad basim in unoquoque latere glandulæ 2-3(-4) ovoideæ, albidæ subalbidæve præditæ; geminatæ ad nodos amplectentes; inferne plane sejunctæ, superne plus minusve coalitæ. *Bracteolæ* bracteæ simillimæ sed



HERBÁRIO DE SÃO PAULO
 SP-000000
 : 127.063

PRESE DA HAPADA DIAMANTINA	
<small>Comunidade EBA, Reserva Biológica Conduru, km Herbario Alexander Leoni, s/n, ALEDF</small>	
Euphorbiaceae <i>Cnidoscolus</i>	Data: / /
BRASIL, BAHIA, Município de Delfino , Estrada Delfino-Munhoz de Minas, 20 km de Delfino. S10° 29' 51" 141° 20' 35" Alt. 820 m Cerradão: caatinga arbórea - solo tipo podzóico Arvore: ca. 3 m, ramos com DAP de 5 cm. Flores com botões e sépalos verdes, corola alva.	
Frequência: Ocasional Materiais adicionais: Xiloteca.	
Col. A.M. Giullietti: E.N. Lughallu, P. Gassoni, R. Harley.	
PCD N.º 6131	Data: 08/03/97
<small>Instituições colaboradoras: EFLAC, IBGE, UFPA, USP Programa Plantas do Nordeste - Universidade. Projeto financiado pela Hoffman Foundation</small>	

Plate IV. *Cnidoscolus rupestris* Fernández Casas. A. M. Giullietti, PCD 6132 & al., 08-III-1997 (SPF 127063).

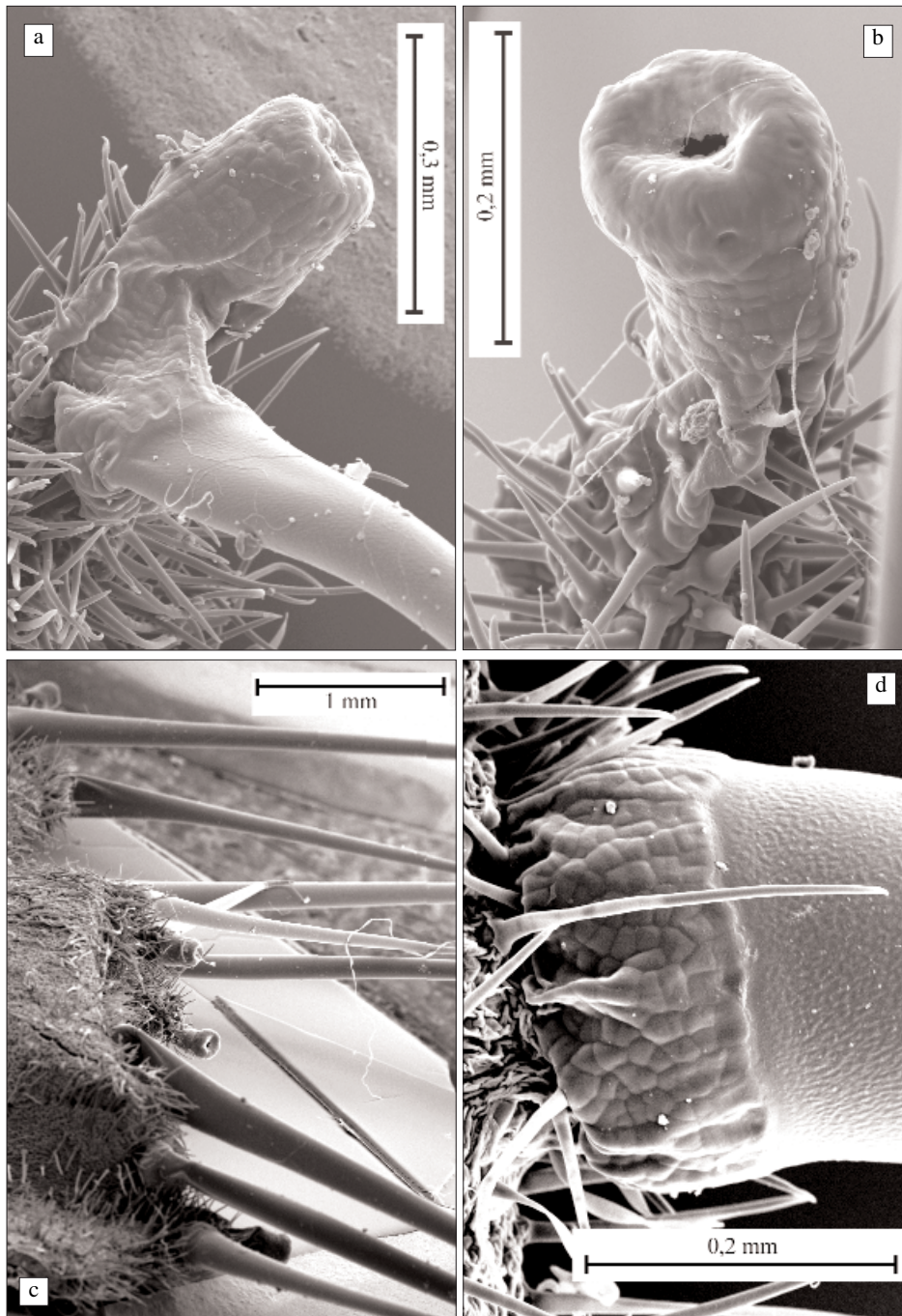


Plate V. *Cnidoscolus rupestris* Fern ndez Casas. A. Freire Fierro 1951 (SPF 86117, holotype). a-c) Glandular columns in leaf margin. d) Base of a big stinging hair (on the leaf margin).

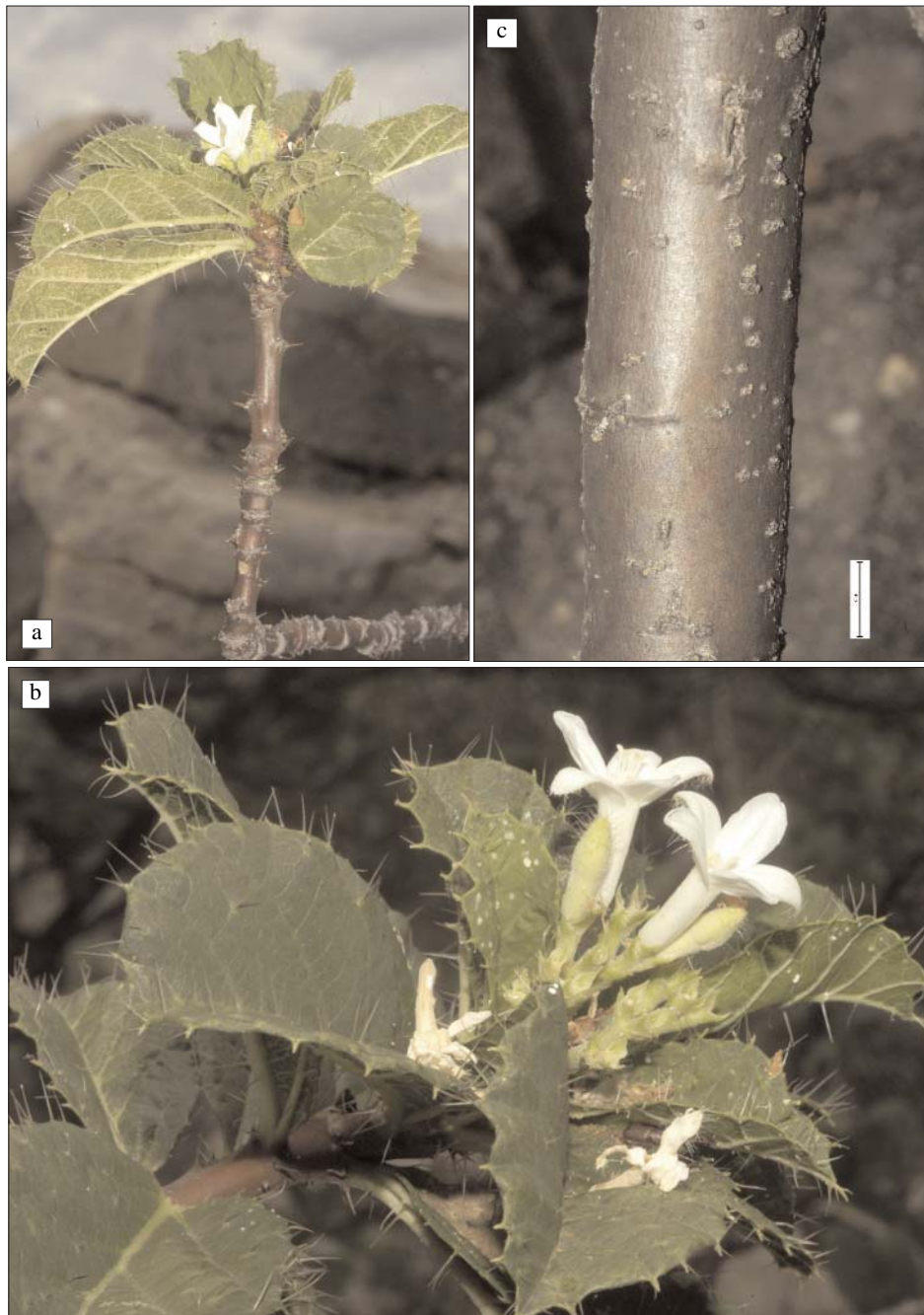


Plate VI. *Cnidoscolus rupestris* Fern ndez Casas. A. Ceballos Jim nez & F. J. Fern ndez Casas *Ff_2006-091*, 25-II-2006 (photographs). a) Photo n  DSC_0512. b) Photo n  DSC_0508. c) Photo n  DSC_0516. The line it means 1 cm in figures a and c, 1,5 cm in the figure b.

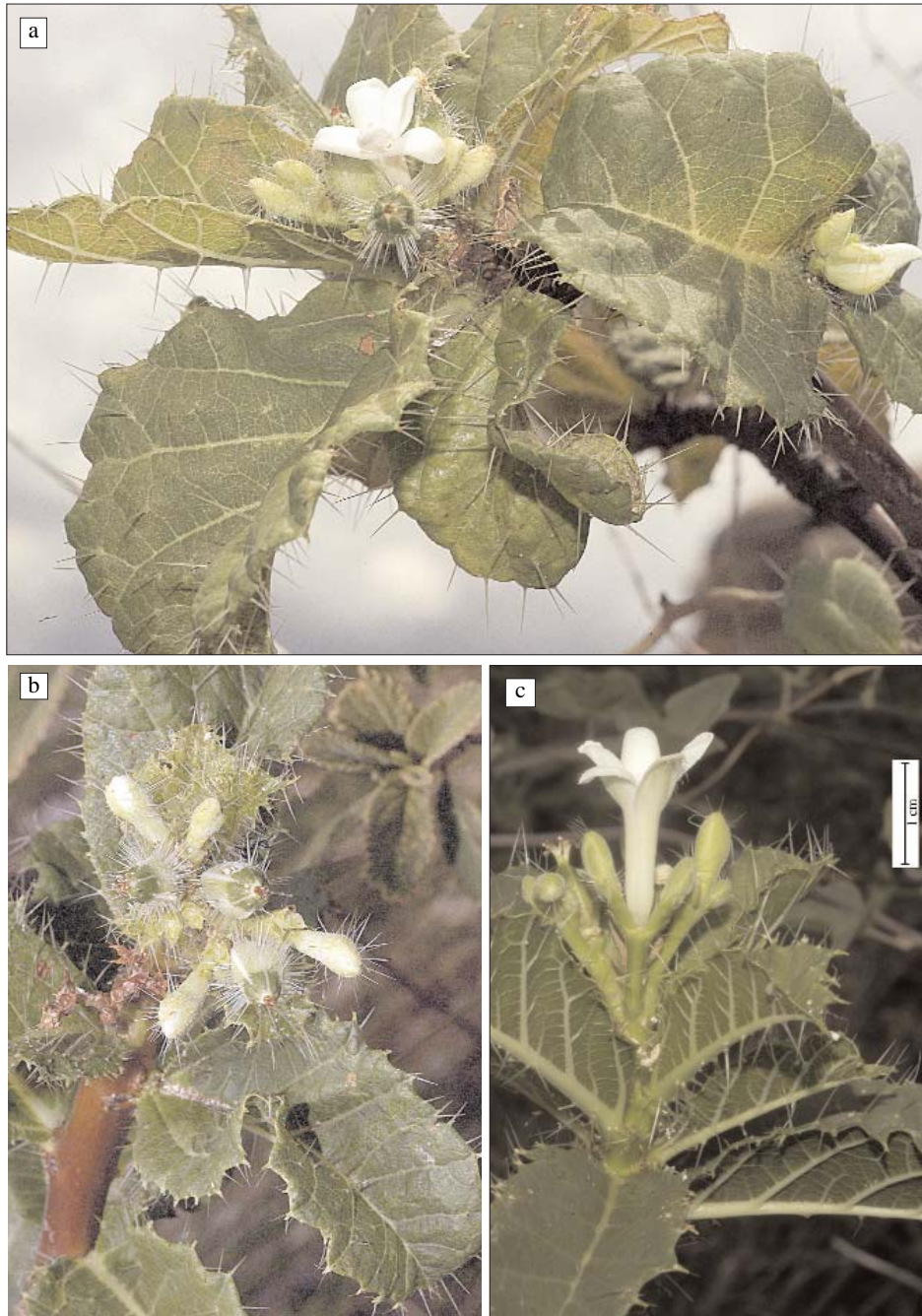


Plate VII. *Cnidoscolus rupestris* Fern ndez Casas. A. Ceballos Jim nez & F. J. Fern ndez Casas Ff_2006-092, 25-II-2006 (photographs). a) Photo n  DSC_0521. b) Photo n  DSC_0520. A. Ceballos Jim nez & F. J. Fern ndez Casas Ff_2006-091, 25-II-2006 (photographs). c) Photo n  DSC_0499.

minores.

FLORES MASCULI. *Pedunculus* nullus vel subnullus, id est flos sessilis. *Alabastra* claviformia, dense et minute albo pubescentes, præcipue sursum stimulosa, æstivatione quinquenciali; ad 3/7 in tubum stricte turbinatum connata. *Corola* alba, parum supra media longitudine in tubum cylindricum connata, hypocraterimorpha; petalorum pars libera patens, ad basim se invicem parum tegentes, modice cochleariformis. *Discus* annularis, cerinus, glaberrimus, glandulæ quinque coalitæ instructus. *Columna* staminalis omnino glabra, longitudinaliter striata. *Stamina* 20, quattuor verticillata. *Antheræ* inferiores ad 1,5 × 0,7-0,9 mm, superiores gradatim minores; supremæ exclusæ, reliqua inclusa, omniæ introrsæ, subbaifixæ; connectivum strictum. *Staminodia* quinque, apicalia, filiforme subulata, inter antheras supremas exstantia.

FLORES FEMINEI difficile observandas, harum fragmenta tantum observata fuerunt. *Pedunculus* nullus vel subnullus. *Caliptra* minima, parum conspicua, margine glabro, undulato. *Corola* ad basim 2-3 mm connata; petalorum pars libera 10-12 × 2-3 mm, linear spatulata, extus albobiliosa, intus margine lato piloso excepto glabra. *Discus* minimus, glabrus, annular cylindricus, longitudinaliter striatus, sessilis id est discopodio destituti. *Staminodia* 6-8? minutissima, <0,5 mm, subulata, quam discus læviora. *Ovarium* juvenile non vidimus, vide regmata. *Styli* tres, perbrevis, tota longitudine liberi, interdum furcati, extus arcuati. *Stigmata* non observata.

REGMA ovoideum, apice excepto setis urticantibus vestitum, horridum, minutissime hirtum (sub lente); styli remanentes coronatum; sub maturitate læte viride, in tertio distale viride fuscior, lineas sex longitudinales, exalbidas, percuso.

REGARDING THE ETYMOLOGY AND ORTHOEPY of the specific name

The specific name is formed from the Latin adjective *rupestris*, -e, meaning rock-dwelling, characteristic of rocks and cliffs. It is stressed on the penultimate syllable (paroxytone): rupéstris. According to the label of the type, the plant lives in stony grounds and steep crags. Our own field observations (Santo Inácio, 2006) corroborate this preference for rocky conditions.

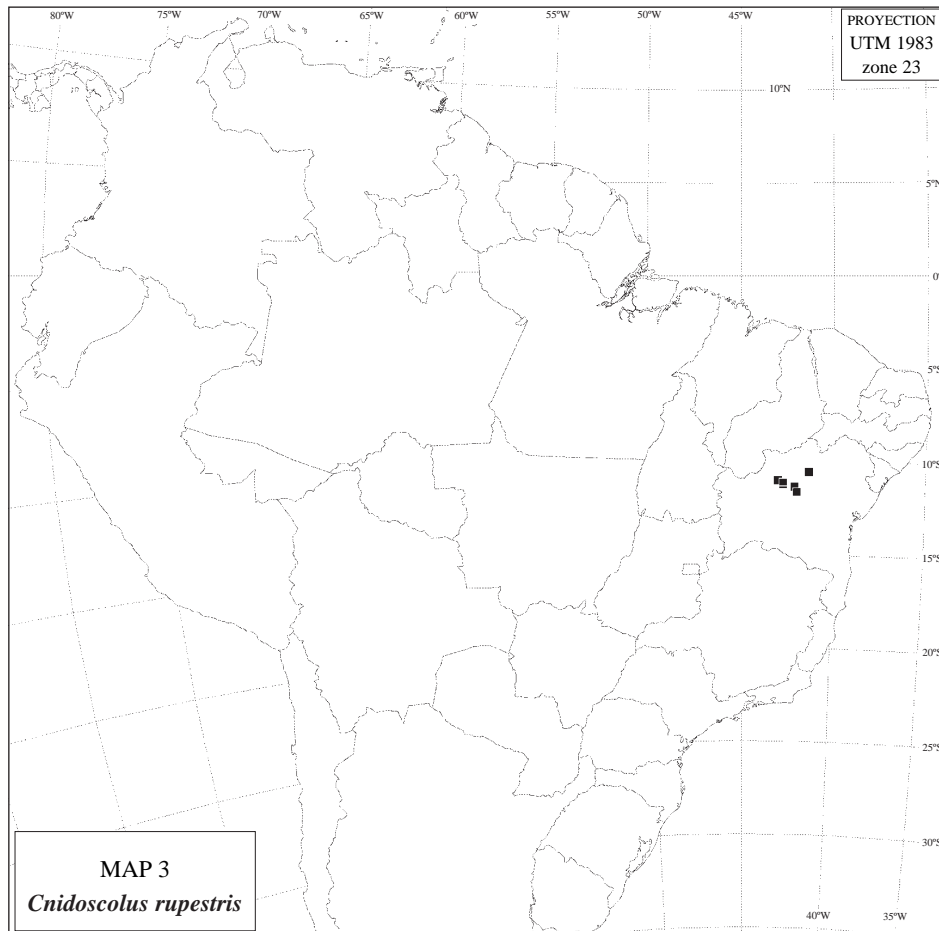
ENGLISH DESCRIPTION

According to the collectors' labels, it is a bush up to 3 m × 5 cm ø, with prickles, urticant; discolorous and membranaceous leaves; greenish flower buds and bracts, white petals.

INDUMENT. *Urticant bristles* big and medium sized frequent in the leaves, fruits and inflorescences. *Simple hairs* everywhere, very abundant on the back of the leaves.

BUSH 1-3 m, abundant white latex. *Branches* strongly aculeate, from can be seen in the pictures (plate vi and vii, pages 355 and 356 respectively), the *bark* in the juvenile plants is red, and gray in the older ones; regularly without leaves, except at their extremities. *Prickles* with elliptic, slightly compressed laterally, conical point, translucent and lacerating.

LEAVES more chartaceous than herbaceous, regularly grouped at the end of the branches. *Stipules* unknown, I saw none; I forgot them when studying the Bahian herbarium vouchers. *Petiole* short, 2-3 mm, moderately hirsute, almost cylindrical and lightly grooved on the face next to the lamina. *Summipetiolar glands* absent, there is not trace of them. *Lamina* oblong or elliptic, (2)3-4(5) × (1,5)2-3(4) cm, discolour (the two faces are unlike in colour), upper face green and with tiny white spots, without urticant bristles; the back has some urticating bristles along the main nerves, more or less whitish, slightly or very cobwebby pubescent; no part is pedate. *Middle radial veins* slightly raised or level with the face, prominent on the back, it is somewhat reddish and extends along the whole length of the lamina, ending in an apical tooth. 6-9 lateral nerves each side, more or less straight, forming an angle of 45° with the radial nerve, scarcely rami-



fied except at the ends, where they disappear; cheilodrome reaching the margin where they finally penetrate a glandular tooth, or almost disappear in the margin. *Tertiary nerves* netted. not at all flat, somewhat undulating, coarsely dentate; uneven ciliate, with large urticating bristles, slightly forward-leaning, with scattered glandular columns, cylindrical, long, ca. $1 \times 0,2$ mm, consisting of a hirtous hairy column, or unequally glabrescent in the distal part; the small gradually differentiated glandular head has a waxy shine, or dark and dull when it is more developed, spherical or depressed, with a diameter which slightly exceeds that of the column that supports it.

INFLORESCENCES terminal, few-flowered, 2-3 cm, shorter or almost equaling the length of the leaves; slightly hairy; with scarce large urticant bristles. *Axes* inferiorly glabrous, upward progressively and sparsely hirsute. *Bracts* triangular, glabrous or with one or two little hairs; the apex in occasions mucronate and glandular; margins with tiny white cilia, without keel, but with a darker area towards the longitudinal midway line; they embrace the facing axes at the nodes; the lower ones remain distinct, while the upper ones are welded by their ends. *Bracteoles* similar to the bracts but smaller,

frequently welding the facing pairs by their bases.

MALE FLOWERS. *Peduncle* non-existent or almost non-existent, the flower is set in. *Floral buds* club-shaped, with short, white dense hairiness, with scarce urticant bristles on the upper part, with quincuncial aestivation; connate 3/7 of their length in turbinate tube. *Corolla* immaculate white, salver-shaped, welded into a cylindrical tube up to slightly over half its length. *Petals* with their free part patent, slightly imbricate at the base, something spoon-shaped. *Disc* ring-shaped, glabrous, waxy, made up of five connate glands, not very differentiated. *Staminal column* glabrous all over, grooved lengthwise. *Stamens* 20, 4-verticillate. Lower *anthers* ca. $1.5 \times 0.7-0.9$ mm, the upper ones progressively smaller; the highest excluded, others included, all introrse, almost basifixed; relatively narrow connective. *Staminodes* five, apical, filiform subulate, they protrude from the anthers of the highest verticille.

FEMALE FLOWERS observed with difficulty, incomplete. *Peduncle* absent or almost absent; flowers set in. *Calyptra* barely distinguished, very little developed, with glabrous undulated margin. *Corolla* 2-3 mm connate at the base, forming a short wide tube; free part of the five petals $10-12 \times 2-3$ mm, hairy, spatulate or strap-shaped, villous on the outside and glabrous inside, except near their outer border, where they are also pubescent. *Disc* (observed under the regma) little developed, glabrous, ring-shaped cylindrical, grooved lengthwise, lacking discopode, that is to say, set in. *Staminodes* 6-8?, small, subulate, more brightly colored than the disc. *Ovary* not seen; see the morphology of the regma. *Staminodes* very small, of less than 0,5 mm, of a lighter color than the disc. *Styles* very brief, free their whole length, on occasion forked, outward-arching. *Stigmas* unknown.

REGMA ovoid, except the apex, completely clothed in urticant bristles, horrid minutely hirsute (under magnifying glass); ending with the three persistent styles; light green but darker in the upper third, with six delicate, longitudinal, whitish lines with a kind of spherical 30° spindles defined on their surface.

OBSERVATIONS

Very similar to *Cnidoscolus pubescens* Martius in Pohl and to *C. byssinus* Fernández Casas, cf. F. J. FERNÁNDEZ CASAS (2003), F. J. FERNÁNDEZ CASAS & J. M. PIZARRO DOMÍNGUEZ (2005). Observed in the field (visit to Santo Inácio, 25-II-2006) it appears to be exactly intermediate; its external morphology suggests that it is a hybrid of both species, which are indeed sympatric. In addition to its habit, it has an intermediate number of stamens, the leaf size and the pubescence on the back; the indument varies considerably; there are leaves –generally large–with slight cobwebby pubescence, whitish or yellowish, revealing the abaxial epidermis; others on the other hand –generally small– have on the back a layer of dense white tomentose that doesn't allow to see the abaxial epidermis, other on the other hand –regularly of small size– have on the back a layer of dense white tomentose that does not permit the abaxial epidermis to be seen.

It also appears to have its own characters, such as the glands of the leaves margin, the columnar glands described as having a half-cigarette shape. Many other characters of the reproductive system also appear to be different, but the observations have not been very extensive and it would therefore be advisable to wait until more and better materials are available.

We made no studies of floral biology, nor did we analyze the pollen fertility, as we were unable to collect any material without the relevant permission from the local authorities when we visited the area this year. However the populations thriving on the rocks near Santo Inácio seemed to be very healthy; the plant grew in abundance there and was blooming profusely, also for-

ming fruits which were juvenile at the time but appeared healthy (see our figures, a and b on plate vii, on page 355).

All the shrubs were bushes which were very ramified at the base and slightly ramified elsewhere; we saw no monopocic specimens nor any with a treelike appearance, as can frequently be seen in Martius' species, *Cnidoscolus pubescens*.

EXAMINED SPECIMENS

BRASIL, (05) BAHIA:

- 23LQH18** -10.99°, -043.03°; «estrada Xique-Xique - Vacarias, ca. 11°S, 043°W. Caatinga; lugar com muita pedra. Arbusto 2,5 m, urticante; cálice verde, corola branca. "Cansação"», A. Freire Fierro 1951, J. M. Martins, R. Moraes, P. L. da Rocha, M. Rodrigues, G. Sugliano & J. P. Yvert, 14-X-1990 (SPF 86117[+1], holo-; type *C. rupestris*).
- 23LQH46** -11.17°, -042.75°; Santo Inácio, São Inácio (ppl), «Santo Inácio, 11°07,231'S, 042°44,231'W, 1412 ft. Ad rupes calcareas præruptas. Frutex 1-2 m, rami aculeati; latex dives, albus; flores albi; fructus sex albolineatus», A. Ceballos Jiménez & F. J. Fernández Casas Ff_2006-091, 25-II-2006 (Photogrammæ tantum fecimus!).
- 23LQH47** -11.08°, -042.75°; Santo Inácio, São Inácio (ppl), 11°06'S, 042°44'W, «Santo Inácio. Arbusto ca. 1 m, latescente, urente; flôres alvas», I. Cordeiro, A. Furlan, N. L. de Menezes & J. R. Pirani, 01-XII-1980 (CFCR 331, non vidi; SPF 21962).
- 23LQH47** Santo Inácio, São Inácio (ppl), «Santo Inácio: 4,3 km in viam versus Xique-Xique ducentem, 11°06,095'S, 042°43,455'W, 1660 ft. In rupestribus calcareis. Frutex 0,8-1,5 m; latex profluens, albus; flores albi; fructus apiculatus, ex albo sex leneatum», A. Ceballos Jiménez & F. J. Fernández Casas Ff_2006-092, 25-II-2006 (Photogrammæ tantum fecimus!).
- 23LRH14** -11.35°, -042.11°; «(munic. Uibaí) Serra Azul, 11°20'10"S, 042°08'29"W, 600 m. Caatinga; solo muito pedregoso. Árvore ca. 3 m», D. R. Atkinson & al., PCD 2482, 17-III-1996 (ALCB 37416; HUEFS 63930). Folia magna.
- 23LRH21** -11.62°, -042.02°; «(munic. Irecê) Ibipeba: Mirorós, 11°38'S, 042°00'W. Arbusto 3 m; folhas membranáceas, discolores; flôres alvas», D. S. Almeida 16, 27-IX-2002 (ALCB 50118). Es algo especial, como si fuese tendente de *C. obtusifolius* a *C. byssinus*. Pilosissimus, folia minora; rami vetusti aculei validi præditi.
- 24LTP43** -10.54°, -041.33°; TP4339, «(munic. Delfino) Delfino: a 20 km na estrada para Mimoso de Minas, 10°29'31"S, 041°20'35"W, 826 m. Caatinga arbórea; solo muito pedregoso. Árvore ca. 3 m, ramos 5 cm ø; flôres com botões e sépalas verdes, corola alva», P. Gasson, A. M. Giuliatti, R. H. Harley & E. N. Lughadha, PCD 6131, 08-III-1997 (ALCB 37469; CEPEC 74516; HUEFS 28554; SP 359783; SPF 127063). Folia magna.

ACKNOWLEDGEMENTS

Miguel Jerez Luna took the electronic microphotographs for plates ii (page 348) and v (page 354). Ulpiano Emilio Souto Mandelos processed the digital photographs for plates i (page 347), iv (page 353), vi (page 355) and vii (page 356); he also made the three distributional maps (pages 344, 350, 358). Juan Castillo Gorroño drew plate iii (page 349).

LITERATURE CITED

- FERNÁNDEZ CASAS, F. J. (2003). *Cnidoscolorum* notulæ (*Euphorbiaceæ*), 10. *Fontqueria* **55**(16): 81-88.
- FERNÁNDEZ CASAS, F. J. & J. M. PIZARRO DOMÍNGUEZ (2001). Synopsis of *Cnidoscolus* series *Cnidoscolus* (*Euphorbiaceæ*), with description of a new species. *Fontqueria* **55**(8): 39-46.
- FERNÁNDEZ CASAS, F. J. & J. M. PIZARRO DOMÍNGUEZ (2005). *Cnidoscolorum* notulæ: *C. byssinus* Fdez. Casas. *Adumbr. Summæ Ed.* **10**: 1-8.