

*Spigeliarum* notulæ  
(*Strychnaceæ*), 33-35

Francisco Javier FERNÁNDEZ CASAS

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## *Spigeliarum notulæ (Euphorbiaceæ), 33-35*

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**Keywords.** Systematics, Chorology, New Species; *Spigelia* Linnaeus, subgen. *Spigelia* autonymous, sect. *Graciles* Progel in A. W. Eichler & I. Urban (*Spigeliaceæ*); South America: Brazil (Amazonas), Colombia (Chocó, Vaupés).

**Abstract.** Three new species are described in this paper, under *Spigelia* Linnaeus, subgen. *Spigelia* autonymous, sect. *Graciles* Progel in A. W. Eichler & I. Urban (*Spigeliaceæ*): *S. chocoënsis* Fernández Casas, from Colombia (Chocó); *S. Schultesii* Fernández Casas, from Colombia (Vaupés); and *S. megapotamica* Fernández Casas, from Brazil (Amazonas).

**Zusammenfassung.** Drei neuen Arten werden beschrieben in *Spigelia* Linnaeus, Untergattung *Spigelia*, Sektion *Graciles* Progel in A. W. Eichler & I. Urban (*Spigeliaceæ*): *S. chocoënsis* Fernández Casas, aus Colombia (Chocó); *S. Schultesii* Fernández Casas, aus Colombia (Vaupés); und *S. megapotamica* Fernández Casas, aus Brasil (Amazonas).

**Resumé.** Trois nouvelles espèces sont proposées dans le genre *Spigelia* Linnaeus, subgen. *Spigelia* autonyme, sect. *Graciles* Progel in A. W. Eichler & I. Urban (*Spigeliaceæ*): *S. chocoënsis* Fernández Casas, de la Colombie (Chocó); *S. Schultesii* Fernández Casas, de la Colombie (Vaupés); et *S. megapotamica* Fernández Casas, du Brésil (Amazonas).

**Resumo.** Descrevem-se tres espécies novas no gênero *Spigelia* Linnaeus, subgênero *Spigelia* autônomo, seção *Graciles* Progel in A. W. Eichler & I. Urban (*Spigeliaceæ*): *S. chocoënsis* Fernández Casas, da Colômbia (Chocó); *S. Schultesii* Fernández Casas, da Colômbia (Vaupés); e *S. megapotamica* Fernández Casas, do Brasil (Amazonas).

**Resumen.** Se describen tres especies nuevas en el género *Spigelia* Linnaeus, subgénero *Spigelia* autónimo, sección *Graciles* Progel in A. W. Eichler & I. Urban (*Spigeliaceæ*): *S. chocoënsis* Fernández Casas, de Colombia (Chocó); *S. Schultesii* Fernández Casas, de Colombia (Vaupés); y *S. megapotamica* Fernández Casas, de Brasil (Amazonas).

It is continued here our heterogeneous publications series dealing with the genus *Spigelia* Linnaeus (*Spigeliaceæ*), section *Graciles* Progel in A. W. Eichler & I. Urban, which has been published in this magazine from 2001, see the previous article, F. J. FERNÁNDEZ CASAS (2008).

We describe now three new species that we believe endemic from South America. *Spigelia chocoënsis* it seems endemic in the Columbian pacific, department of Chocó. The two others are Amazonian, *S. Schultesii* in the Colombian Vaupés; *S. megapotamica* in the Brazilian Amazonas state.

33 ***Spigelia chocoënsis* Fernández Casas, *Fontqueria* 55(66): 531-536, n° 33 (20-x-2008), **spec. nov.****

TYPUS: *R. Bernal González 1013* (MO 3414667, holo-)

– Subgen. *Spigelia*, sect. I.IV *Graciles* Progel in A. W. Eichler & I. Urban, Fl. bras. 6(1): col. 257, sect. iii (1868)

ICONOGR.: laminæ nostræ i, ii, pagellæ 533, 534.

DISTR. GEOGR.: **America meridionalis**: Colombia (Chocó), cf. tabula 1, pagella 536.

**ABREVIATA DIAGNOSIS** vel character essentialis

A *Spigelia guianensis* (= *S. humilis*) proxima, sed differt foliis breviter petiolatis lanceolatis base cuneatis uni-nervatis (penninervis), haud sessilis breviter ovato lanceolatis base rotundato subamplexicaulibus 1-3-nervatis (palmatinervis); metastylis longioribus discrepat quoque.

**MAIN DIAGNOSTIC FEATURES** or diagnostic characters

Next to *Spigelia guianensis* (= *S. humilis*), it differs by its leaves briefly petiolate, cuneate in the base, one-nerved; and not sessile, briefly ovate lanceolate, rounded in the base, almost stem-clasping, 1-3-nerved (palpately nerved); the metastyle considerably longer also disagrees.

**DESCRIPTIO** ex typo, *R. Bernal González 1013* (COL 240042; MO 3414667, holo-)

Sicut collectorum schedulæ planta herbacea, humilis vel robusta, usque 30 cm; flores albi apice roseo.

*Herbacea* usque ad 30 cm, infirma vel modice robusta, hemicryptophyta, admodum glabra vel fere glabra. *Rhizomata* brevia, ad 1,5 mm ø, horizontalia vel ascendentia, ad nodos radicania, caules prodeuntia. *Caules* ascendenti erecti, quadrangulari, sursum parum ramificati, admodum glabri. *Rami* pauci, apicali, recti. Internodia quam folias multo breviora, admodum glabra.

FOLIA omnia opposita, glaberrima (nonnulla ad basim pilis exhibet, verisimiliter alienis), breviter petiolata; primo visu uninervia. *Petiolus* 3-4(5) mm, supra canaliculatus. *Stipulæ* virides, membranaceæ, transverse anguste triangulares, obtusissimæ, glabræ. *Limbus* usque 4,5 cm × 7 mm, anguste lanceolatus vel anguste ellipticus, acutus, cuneatus, planus, tantum marginibus revolutis. *Nervus medius (longitudinalis)* bene notatus, supra canaliculatus, strictus, reliquo limbo fuscior; subtus prominens, lætior, reliquo limbo lætior. *Nervi transversales (secundarii)* pauci, supra inconspicui, subtus plus minusve notati, 30° prorsum parum arcuati, distaliter margines subparalleli, tandem evanidi vel nonnunquam brochydromi. *Margo* lævis, revolutus.

INFLORESCENTIÆ paucifloræ, secundæ, 1-6 floriferi, 15-20(-35) mm pedunculatæ, præcipue terminales sed nonnullis brevioribus in supremis axillis ortæ, ægre inter folias supremas exstantes. *Axis* præcipue bicostatus. *Bracteæ* inconspicuæ, dorso virides, margo lætiores, ad sepalos simillimæ sed minores, usque 1,5 × 0,5 mm.

FLORES secundi, sessili subsessilisve, evoluti 2,5-4 mm inter se distantes. *Pedunculus* nullus vel usque 0,5 mm. *Calyx* viridis, gamosepalus; sepalia ad basim breviter connata, anguste triangularia, glabra, læte viridia, florendi tempore usque 2,5 × 0,5-0,6 mm; dorsum subcarinatum; apice sæpe arcuatum; margo strictus, hyalino albicans. *Corolla* usque 17 mm, bis infundibuliformis, inferne stricte infundibuliformis secus 10 mm, superne reliqua latior turbinata atque ut videtur plicata, inter "infundibula" duo superposita parum dilatata; lobi (petalorum pars libera) triangulari, acuti, ad 2 × 2 mm, conspicue trinervati. *Filamenta* quinque, ad tubum corolæ usque 9-12 mm adtana. Antheræ ad 1,5-2 mm, sagittatæ, dorsifixæ, inclusæ.

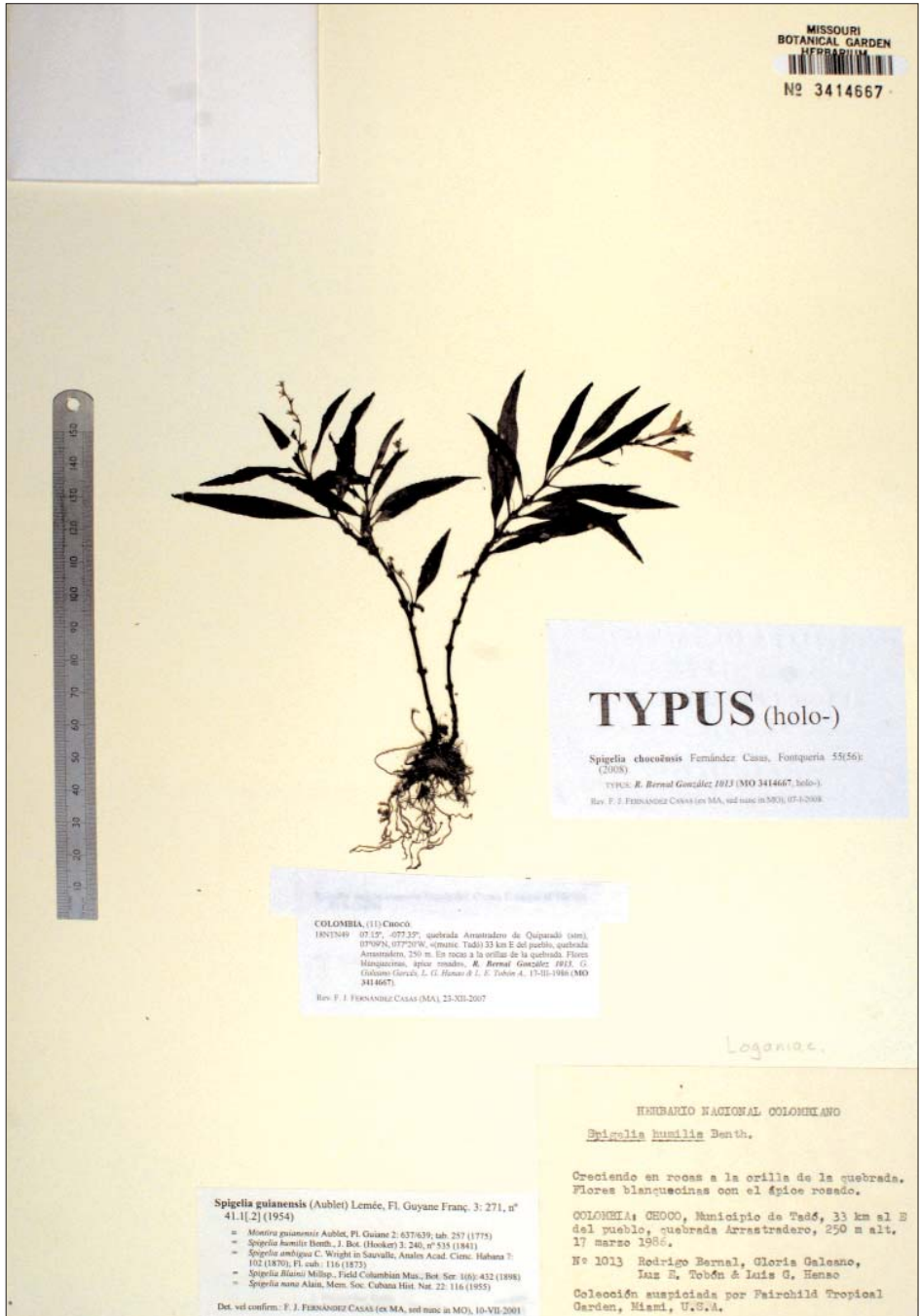
CAPSULA usque 2,1 × 3,9 × 1,8 mm, quam sepalos longioris, albo lutea; loculi subsphærici, glaberrimi. *Metastylus* elongatus, usque 2,5-3,5(-4,5) mm, apice parum dilatatum, parum flexuosus. *Carpoatlas* ad 2 × 1,2-1,3 mm, ligneus, albicans; *apophyses* obtusæ, subplanæ; *carina longitudinalis* nulla necque picta; *crista transversa* obtusa; *foramen* elliptico biscrobiculatum.

**DESCRIPTION** of the type collection, *R. Bernal González 1013* (COL 240042; MO 3414667)

According to the label of the collectors it have whitish flowers with pink apex.

Herbaceous up to 30 cm, delicate or moderately healthy, hemicryptophyte, quite glabrous or nearly so. *Rhizomes* short, c. 1,5 mm ø, horizontal or rising, rooting in the knots, and also originate erect stems. *Stems* erect rising, quadrangular, upward a little branching, thoroughly glabrous. *Branches* little numerous, mainly apicals, rising erects. *Internodes* considerably shorter than the leaves, thoroughly glabrous. *Nodes* conspicuously dilatated.

LEAVES rather located at the end of the branches, all opposite, quite glabrous (some ones show



MISSOURI  
BOTANICAL GARDEN  
HERBARIUM  
No 3414667

**TYPUS** (holo-)  
*Spigelia chocoënsis* Fernández Casas, Fontqueria 55(56):  
 (2008)  
 TYPUS: R. Bernal González 1013 (MO 3414667, holotype)  
 Rev. F. J. FERNÁNDEZ CASAS (ex MA, not trace in MO), 07-1-2008

COLOMBIA, (11) Cauca  
 18°17'N 77°12'W, quebrada Armentales de Quipnaki (sede),  
 07°09'N, 077°20'W, «municipio Tadó» 33 km E del pueblo, quebrada  
 Armentales, 250 m. En tocos a la orilla de la quebrada. Flores  
 blanquecinas, ápice rosado. R. Bernal González 1013. G.  
 Galeano (curator), L. G. Henao & L. E. Tobón A. 17-III-1996 (MO  
 3414667)  
 Rev. F. J. FERNÁNDEZ CASAS (MA), 23-XII-2007

Loganiac.

HERBARIUM NACIONAL COLOMBIANO  
*Spigelia humilis* Benth.  
 Creciendo en rocas a la orilla de la quebrada.  
 Flores blanquecinas con el ápice rosado.  
 COLOMBIA, CAUCA, Municipio de Tadó, 33 km al E  
 del pueblo, quebrada Armentales, 250 m alt.  
 17 marzo 1986.  
 No 1013 Rodrigo Bernal, Gloria Galeano,  
 Luz E. Tobón & Luis G. Henao  
 Colección auspiciada por Fairchild Tropical  
 Garden, Miami, U.S.A.

*Spigelia guianensis* (Aubllet) Lemée, Fl. Guyane Franç. 3: 271, n°  
 41.1[2] (1954)  
 = *Mitostema guianensis* Aublet, Fl. Guiane 2: 637-639, tab. 257 (1775)  
 = *Spigelia humilis* Benth., J. Bot. (Hooker) 3: 240, n° 535 (1841)  
 = *Spigelia ambigua* C. Wright in Sawvulle, Anales Acad. Cienc. Habana 7:  
 102 (1870). Fl. cuba. 116 (1873)  
 = *Spigelia blanda* Millsp., Field Columbian Mus., Bot. Ser. 1(6): 432 (1898)  
 = *Spigelia nana* Alan., Mem. Soc. Cubana Hist. Nat. 22: 116 (1935)  
 Det. vel confirm.: F. J. FERNÁNDEZ CASAS (ex MA, not trace in MO), 10-VII-2008

PLATE I. *Spigelia chocoënsis* Fernández Casas, R. Bernal González 1013 (MO 3414667, holotype).

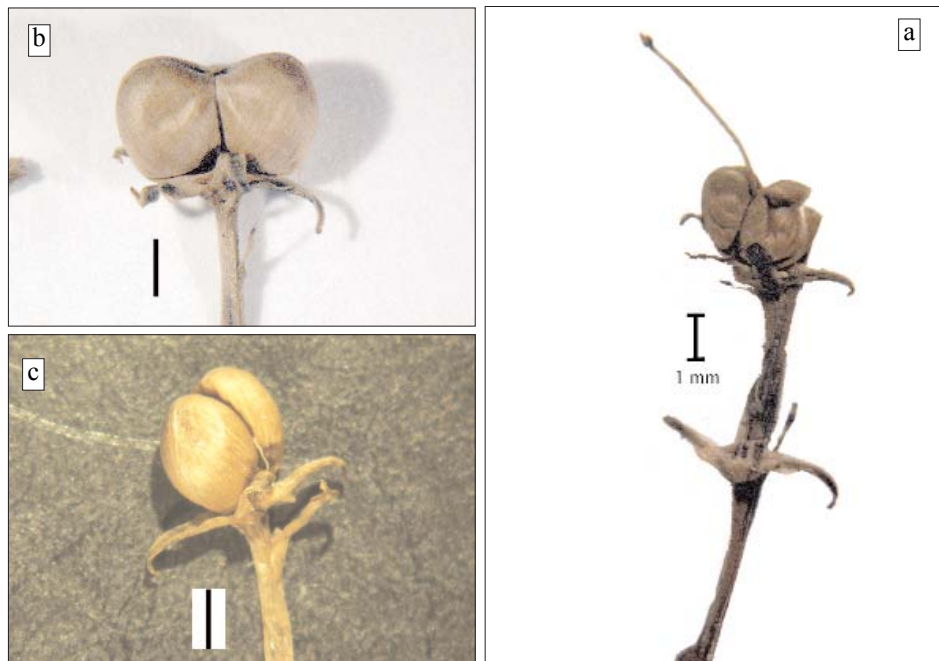
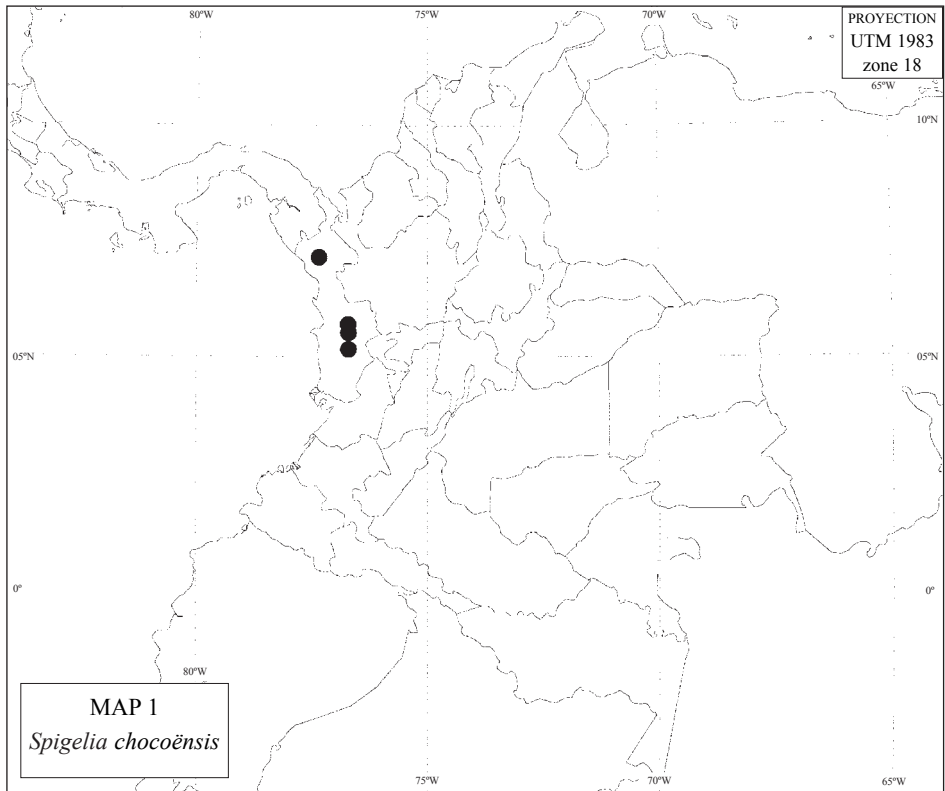


PLATE II. *Spigelia chocoënsis* Fernández Casas, R. Bernal González 1013 (MO 3414667, holotype). a-c) Quite ripe capsules. Black stroke= 1 mm.

a few hairs just in the base, but perhaps they will be strange to the own plant, perhaps fungi?), briefly petiolate; observed superficially they are uninerved. *Stipules* green, membranous, triangular, very obtuse, glabrous. *Petiole* 3-4(5) mm, canaliculate on the upper part, prominent by the back. *Limb* a so much discoloured, more obscure by the upper part than by the back, until 4.5 cm  $\times$  7 mm, narrowly lanceolate or narrowly elliptical, acute, cuneate, flat, only in the margin slightly revolute. *Middle nerve* (longitudinal) conspicuous, by the upper face canaliculate, narrow, more obscure than the rest of the limb; the prominent back, broader, also more obscure than the rest of the limb. *Transverse nerves* (secondary ones) few, on the upper face hardly noticeable, on the back are let to see better, born inclined 30° toward before, arched, forward are made almost parallel to the margins, sometimes are blurred or are solved brochydodrome. *Margin* smooth, something revolute.

INFLORESCENCES few flowered, one sided, with (1-) 2-5 (- 6) flowers, 15-20(- 35) mm pedunculate, mainly terminal, but also are seen some smaller at the upper axils, that hardly project between the surrounding leaves. *Axes* throughout its length by two prominent ribs; the previous flowering shafts stay sometimes colourless in axiles, below the apical ones. *Bracts* inconspicuous, green in the back, clearer in its margins, similar to the sepals but smaller, until 1,5  $\times$  0,5 mm.

FLOWERS one sided, sesile or almost sessile, in full anthesis, distant mutually 2,5-4 mm. *Peduncle* absent or until 0,5 mm. *Calyx* green, gamosepalous; sepals near its base briefly connated, narrowly triangular, glabrous, green clear, in flowering time 2,5  $\times$  0,5-0,6 mm; back almost carinate; apex many times arcuate; narrow margin, whitish hyaline. *Corolla* until 17 mm, two times infundibuliform; down it begins cylindrical and soon it is made narrowly infundibuliform during some 10 mm in total; the part that remains on top it is broader, turbinate and apparently with five longitudinal folder; justly between the two infundibuliform parts seems that there is a mild but sharp expansion: petals (the free part) triangular, acute, c. 2  $\times$  2 mm, conspicuously trineviate. *Filaments* five, connated to the corolla tube during 9-12 mm. *Anthers* c. 1,5-2 mm, sagittate, dorsifixe, enclosed.



CAPSULE until  $2,1 \times 3,9 \times 1,8$  mm, longer than the sepals, brown clear or yellowish; *locules* subspherical, quite glabrous. *Metastyle* lengthened, until 2,5-3,5(- 4,5) mm, with the apex a enlarged so much, slightly flexuose; the apical expansion is not sharp, but fusiform, as of double length that width. *Carpoatlas* c.  $2 \times 1,2-1,3$  mm, of woody aspect, whitish, concave; *foramen* elliptical or with two underhand circles, frequently septate; *apophysis* obtuse, almost flat; *longitudinal keel* absent, or mildly drawn, in any case without relief; *transverse comb* obtuse.

**DESCRIPTION** from J. A. EWAN (1947: 294-295, n° 1, as *S. humilis*)

Low, inconspicuous annual, 7-12 cm high, arising from a cluster or thin fibrous roots, the stems slender, simple or branching from the base, distinctly quadrangular with faint wings on the angles, puberulent to subglabrous, leaf blades lanceolate to oblanceolate or lancolate oblong, spreading, instrictly opposite more or less decussate pairs, all small, those of principal leaves 20-28  $\times$  5-6 mm, la little fleshy, glabrous on both surfaces, subsessile; flowers solitary or in reduced 2- or 3-flowered spikes, inconspicuous, the calyx lobes subulate, subequal glabrous, 1,5-2,0 mm, spreading or recurved in fruit, the corolla white, narrow salverform, 1-1,8 mm, the lobes short-triangular, barely acute, more or less imbricate; stamens included; capsule smooth, the cocci rounded, 2,0-2,5 mm; immature seeds 0,5 mm, minutely echinate.

**DESCRIPTIO** ex J. Cuatrecasas Arumí 24120 (COL 240043, sinistra; NY s/n; US 2320469)

Sicut collectorum schedulæ; planta herbacea, robusta, 20-30 cm; corolla alba.

CAULES tetragono subalati; *internodia* quam folia dimidia longitudine, glabra.

FOLIA omnia opposita, quam internodios longiora, apices versum disposita, majora submedia longitudine partis foliacei. *Stipulæ* late rhombicæ vel trullatæ, herbacæ vel submembranosæ, inter se connexæ lineas interpetiolares formantes. *Petiolus* 2,5-3,5 mm, glabrus, adaxialiter canaliculatus. *Limbus* oblongo lanceolatus, basi apiceque acutus, 2-4 cm  $\times$  3-10 mm, penninervia, brochidodroma, cuneata, apice acuto, glabra, in petiolo sensim attenuata. *Nervus medius* (lon-



gitudinalis) conspicuus, adaxialiter parum canaliculatus, abaxialiter prominens. *Nervi secundarii* alterni, 4-6 unoquoque latere, arcuato ascendenti, 40°-50° prorsum proni, primum modice curvati demum recti ad marginem subparalleli, denique contiguo connati (brochidocromi). *Margo* inconspicuus (amplificatus sub lente 10 × vidimus).

INFLORESCENTIÆ hornotinæ terminales, 5-7 floriferæ, 2,5-3 cm pedunculatæ; illarum vetustarum nudi axes axillari persistentes; *flores basales* corollis delapsis 6-7 mm inter se semotæ; *flores supremi* corollis præditis propinquo; *rhachis* anguloso subalatus. *Bracteæ* lanceolatæ, herbacæ, ad petalos simillimæ sed paulo minores.

FLORES. *Petiolus* 0,51-1 mm, glabrus vel hirtus. *Sepala* ad 2-2,2 × 0,8 mm, viridia, albomarginata, secus dorsum carinata; in fructu apicibus vix recurvatis; sub carpoatlante post fructum dehiscientiam modice crescentia. *Corolla* alba, infundibuliformis, ad 18 mm. *Petala* trinervia, triangular ovata, ad 2 × 1,6 mm. *Antheræ* 1,1-1,2 mm.

CAPSULA lævis; loculi subsphærici. *Metastylus* 4-4,5 mm. *Carpoatlas* 1,6-2 × 1-1,2 mm, modice concavus, figura oblongo elliptica; *foramen* fere circulare; *apophyses* rotundatæ; *carina longitudinalis* nulla vel tantum ad basem iuxta foraminem picta; *crista transversa* denticulos duos laterales obtusos mites reducta.

SEMINA nigra, fere lævia, modice bullata.

HABITAT. Secundum collectorum schedulæ crescit in rupibus secus margines fluviarum, inter 70 et 250 m.

#### REGARDING THE ETYMOLOGY AND ORTHOEPY of the specific name

The specific name is formed with the name of the Colombian department Chocó, adding a Latin adjectival suffix “-ensis” indicating origin; it means therefore “from Chocó”. The name is proparoxytone, stressed on the antepenultimate syllable, cho-co-én-sis. Chocó has a uncertain origin; it is documented from 1540 that the Spaniards called thus to the Emberá ethnical groups inhabitants on the high San Juan river.

#### EXAMINED SPECIMENS and bibliographic references

##### COLOMBIA, (11) Chocó:

- 18NTN49** 07.15°, -077.35°; quebrada Arrastradero de Quiparadó (stm), 07°09'N, 077°20'W, «(munic. Tadó) 33 km E del pueblo, quebrada Arrastradero, 250 m. En rocas a la orillas de la quebrada. Flores blanquecinas, ápice rosado», *R. Bernal González 1013*, *G. Galeano Garcés, L. G. Henao & L. E. Tobón A.*, 17-III-1986 (COL 240042; MO 3414667, holo-; typus *S. chocoënsis*).
- 18NUL17** 05.16°, -076.71°; Istmina (ppl), 05°09'32"N, 076°41'30"W, «Istmina: cerros de la Mojarra. Rocas junto a la quebrada. Hierba pequeña; flores blanquecinas», *J. L. Fernández Alonso 8606*, *E. Rico Hernández & M. Velayos Rodríguez*, 07-XII-1990 (MA 485680).
- 18NUM11** 05.52°, -076.71°; Yuto (ppl), 05°32'N, 076°38'W, «Yuto: above Yuto, río Atrato, 70 m. Rocky margins of the river. Robust herb, 20-30 cm; corolla white», *J. Cuatrecasas Arumí 24120 & M. Llano*, 02-IV-1958 (COL 240043, sinistra; NY s/n; US 2320469); H. H. HURLEY (1967: 58, n° 13, "42120", ut *S. humilis*).
- 18NUM13** 05.70°, -076.72°; Quibdó (ppl), 05°42'N, 076°40'W, «Quibdó: E, río Tutunendó», *W. A. Archer 2186*, sine datum (US, non vidi), *J. A. Ewan* (1947: 295, n° 1, ut *S. humilis*); H. H. HURLEY (1967: 58, n° 13, ut *S. humilis*).

##### 34 *Spigelia Schultesii* Fernández Casas, *Fontqueria* 55(66): 536-541, n° 34 (20-x-2008), **spec. nov.**

TYPUS: *R. E. Schultes 17447* (US 217912; US 2730419; US 2730420)

- Subgen. *Spigelia*, sect. I.IV *Graciles* Progel in A. W. Eichler & I. Urban, *Fl. bras.* 6(1): col. 257, sect. iii (1868)

ICONOGR.: laminæ nostræ iii, iv, pagellæ 539, 540.

NOMINA VERNACULA. "ma-shee-e-be-ya" (makuna); "ö-leé-fshan" (maku).

DISTR. GEOGR.: **America meridionalis**: Colombia (Vaupés), cf. tabula 2, pagella 538.

#### ABREVIATA DIAGNOSIS vel character essentialis

Habitu cum *Spigelia guianensis* (= *S. humilis*) aliquo modo congruens, sed plantis altioribus usque 50 cm, inflorescentiæ floris numerosioribus, pedunculis usque 2 cm



longis, differt.

**MAIN DIAGNOSTIC FEATURES** or diagnostic characters

Habit with *Spigelia guianensis* (= *S. humilis*) in some way agreeing, but it differs being taller plants, until 50 cm, inflorescence with greater number of flowers, and peduncles until 2 cm long.

**DESCRIPTIO** ex typo, *R. E. Schultes 17447* (US 217912; US 2730419; US 2730420)

Sicut collectorum schedulæ planta herbacea; flores albi.

Herbacea, ut videtur perennans, usque 65 cm, nodis caulinares hirtulis excepti omnino glabra. *Caules* erecti e basi rhizomatosa decumbenti, ad basim radicanti, sursum parum flexuosi, subquadrangulares vel vix alati; *alæ* strictæ tota longitudine plus minusve æquantes; inferne simplici, superne parum ramificati. *Internodia* quam folias breviora, suprema et infima breviora, media longiora.

**FOLIA** omnia opposita, lanceolata, acuta, sursum gradatim majores, suprema majoria, usque 8 × 2 cm, ad basim cuneata, in petiolum fere nullum attenuata. *Stipulæ* late triangulares vel triangulares, amplexicaules, membranosæ, faccile delapsæ, hirta scabridæ. *Petiolum* parum conspicuus si adsunt. *Nervus longitudinalis* (principalis, medius) supra æquans vel modice depressus, subtus prominentis, ad basim præcipue parum striatus. *Nervi secundari* pauci. *Margo* tenuis, revolutus, apicem versus præcipue antrose echinulatus; *echinulis* apicem versus densioribus.

**INFLORESCENTIÆ** præcipue terminales 1(-2) vel subterminales (1), 9-12(-20) mm pedunculatæ, rectæ vel parum flexuosæ, (3-) 6-10 (-12) floriferæ. *Bracteæ* herbaceæ, stricte triangulares, usque 2 mm, ad sepalos simillimæ sed minores.

**FLORES** secundi, sessili. *Corolla* alba, usque 17 × 5 mm, inferne tubulosa, superne gradatim infundibuliformis; *lobi* (corollæ partes liberi) triangulari, ad 2 × 2 mm. *Sepala* viridia, 2,5-2,8 mm, quam capsula breviora, lanceolata, acuta, glabra, ad apicem minute papilloso albo dentata, ecarinata, obtuso rotundata, ad basim dilatata, membranacea, 0,5 mm connata; in sicco canaliculata, extus ecarinata; quoque sepalum intus ad basim glandulæ binæ ostendit; *glandulæ* breviter digitatæ, ad 0,25 mm, apice sæpe atrato. *Antheræ* inclusæ, insertæ, ad 2 mm, albæ. *Stigma* villosum.

**CAPSULA** usque 4 × 5 mm, profunde biloba, apice minutissime papillosum excepto lævis, castanea. *Lobi* divergenti; disepimentus albus, in medio membranaceus tenuisque, supra iuxta stylum gradatim incrassatus, ad basim vis in callo incrassatus; callus oblongus, ad 1 × 0,6 × 0,3 mm. *Metastylus* elongatus, 2-2,5 mm, viridis, rectus, subtragonus?, apice abrupte dilatatus. *Carpocaulis* rhombicus, subplanus, 3,5 × 2 mm, albus, lignosus, extus sub lente faveolatus; carina longitudinalis inconspicua, nisi picta; crista transversa notata; foramen oblongum; apophyses triangulares, acutæ. *Granatum* pentagono-dodecahedricum, subsphæricum, 12-seminatum.

**SEMINA** polyhedrica, echinulata; *testa* atrorubra vel castanea, *echinulis* apice albicantibus, cara externa sæpe pentagonalis, convexa; *pleuræ* planæ. *Hilum* fundo scrobiculo situm est.

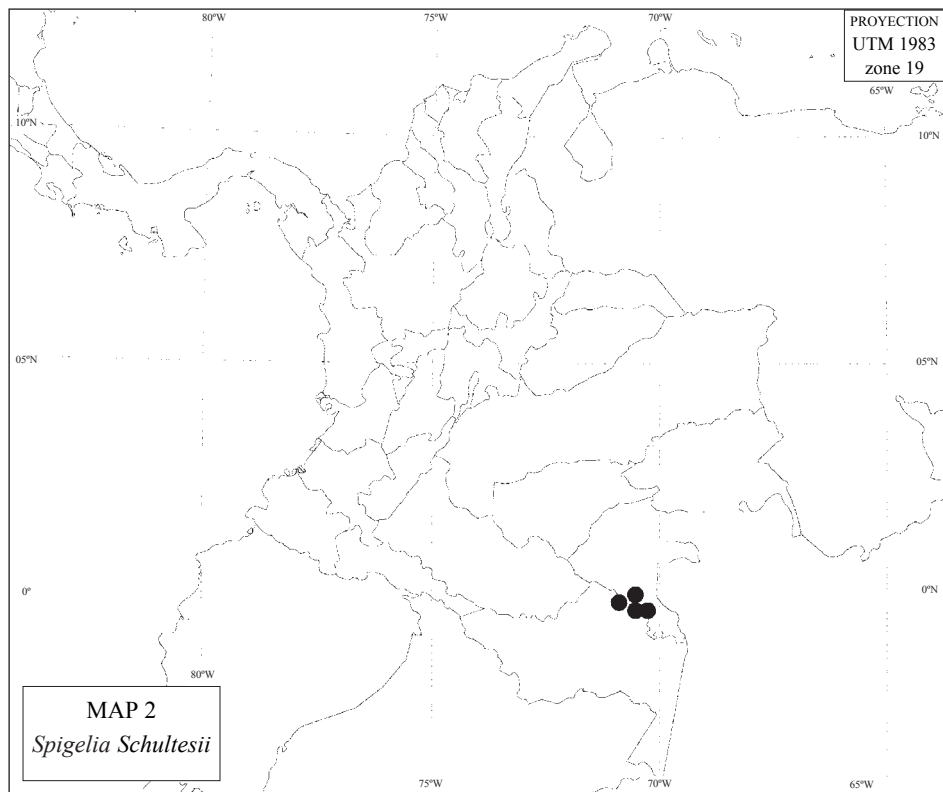
**HABITAT.** Sicut collectorum schedulæ in rupibus quartziticis crescit, ad ripas fluminas, 700-800 hexapedem.

**DESCRIPTION** of the type collection, *R. E. Schultes 17447* (US 217912; US 2730419; US 2730420)

According to the collectors' labels is an herbaceous plant, with white flowers.

Herbaceous, apparently perennial until 65 cm, except in nodes who are hirtule quite glabrous. Erect stems that born of the decumbent horizontal rhizomes bases, rooting at the base, upward some flexuous, four angled or a little winged; narrow wings of width more or less equal throughout all its length; less branching in the lower part, little branching up. Internodes shorter than the corresponding leaves.

**LEAVES** all opposite, lanceolate, acute, upward greater, but those which embrace the inflorescence return to be small, until 8 × 2 cm, lanceolate or ovate lanceolate, cuneate, attenuated in a almost non-existent petiole, it reach the maximum width toward the basal third of its length. *Stipules* broad triangular or triangular, amplexicaul, membranous, caducous, hirta scabride.



*Petiole* little notorious, if is that arrives to have it. *Longitudinal nerve* (the middle or principal) at same level with the limb surface, or well scarcely depressed, by the prominent back and, above all in the base, slightly rifling lengthwise. *Secondary nerves* (longitudinal) scarce in number, generally one to each side of the main nerve, born separated from the base to limb and surpass the mean length to limb rect and clean-looking, in the apical third are made less clear and solve brochydromous with the nerviation secondary, run to mean distance between the central nerve and the margin of the limb; sometimes there is other two, external, more weak, that is perceived conspicuous until 1/3-1/2 of the limb length. *Margin* thin, revolute, antrose equinulate; *echinules* denser toward the apex.

**INFLORESCENCE** 1(-2), terminal or subterminal (1), 9-12(-20) mm pedunculate, erect or little flexuose, with (3-) 6-10 (-12) flowers; the distance between flowers at flowering time is of 4-5 mm. *Bracts* herbaceous, narrowly triangular, until 2 mm, very similar to sepals, but smaller.

**FLOWERS** one sided, sessile. *Corolla* white, of up to 17 × 5 mm, tubulose cylindrical in its lower part, upward gradually infundibuliform; lobes (free part of the petals) triangular, c. 2 × 2 mm. *Sepals* green, 2,5-2,8 mm, shorter than the capsule, lanceolate, acute, glabrous, white denticulate at apex, diminutamente papillose, ecarinate, obtuse rotundate, dilatated near the base, membranous, 0,5 mm connate; in dry canaliculate, but externally without keel; each sepal carries about the base, by within, a pair of glands; each gland measures 0,25 mm and it is briefly fingered, frequently are darkened in the apex. *Anthers* included, inserted, c. 2 mm, white.

**CAPSULE** until 4 × 5 mm, chestnut, profoundly bilobate, except in the apex covered with very short papilles quite smooth, longer than the sepals. *Hemilocules* conspicuously divergent; the four lateral hemilocules lateral in which the capsule is decomposed, each one have one two swollen zones, the rest of its surface (as a spherical sector, almost an eighth of the all spherical surface) has the same thickness; the first swollen zone is found justly where it born the style, in the apical center of conjunction of the four hemilocules; the second is better defined, it is found in the radial



PLATE III. *Spigelia Schultesii* Fernández Casas, R. E. Schultes 17447 (US 2730419, holotype).

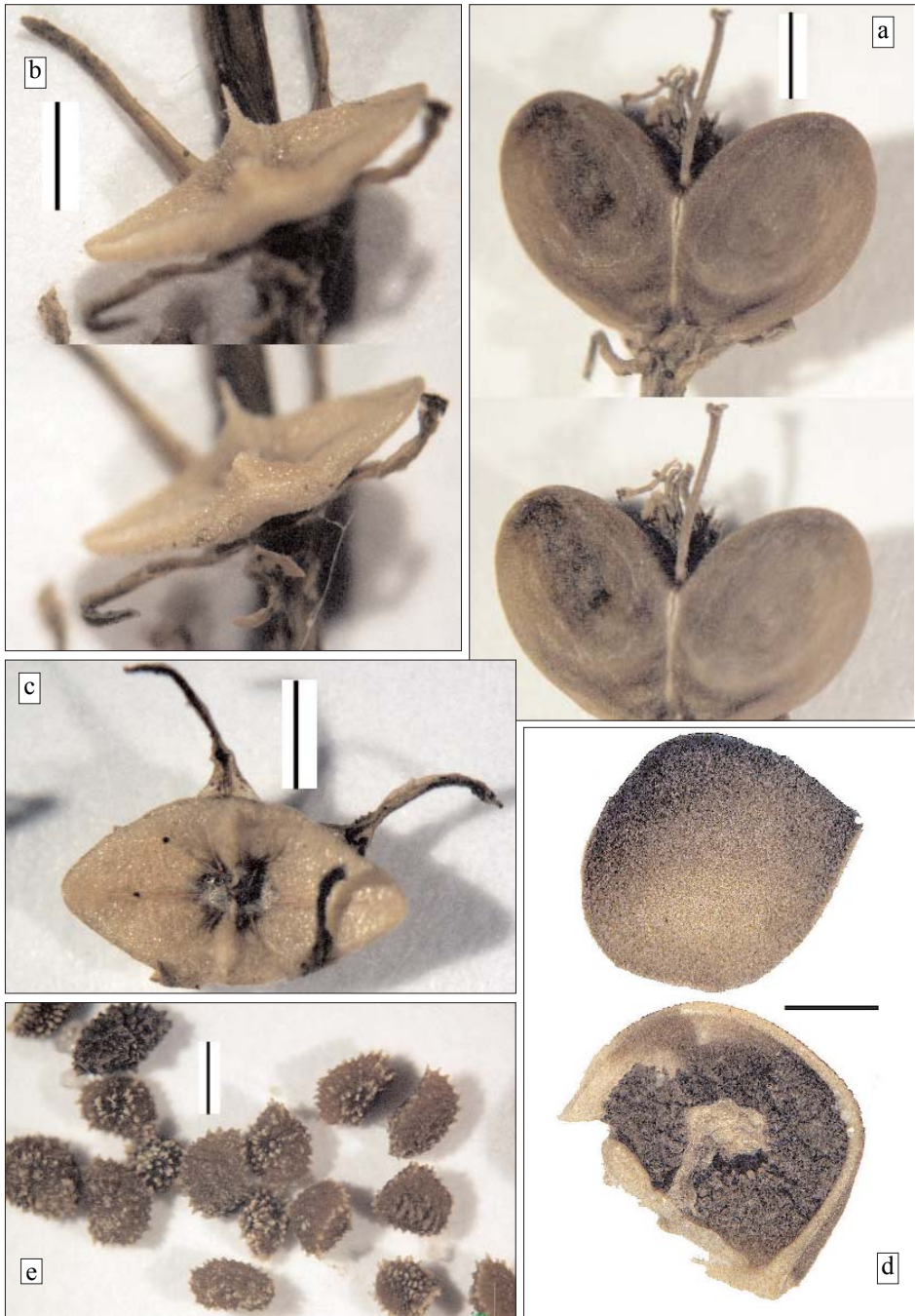


PLATE IV. *Spigelia Schultesii* Fernández Casas, a) Capsule. b, c) Carpoatlas. d) Granatule and fruit coat. e) Seeds. R. E. Schultes 17150 (COL 240531; US 2730423). Black stroke= 1 mm.



plane over the partition walls; the partition walls are white in the membranous and tenuous center, together to the style, gradually swollen and toward the base it produce the swollen callus; the callus is placed vertical when the fruit is found closed, it is put over the carpoatlas and probably it works in the opening mechanism of the explosive capsule dehiscence, it is oblong, c.  $1 \times 0.6 \times 0.3$  mm. *Metastyle* lengthened 2-2,5 mm, green, right, subtetragone, with abrupte dilatated apex and flat at the top. *Carpoatlas* rhombic, almost flat or mildly concave,  $3,5 \times 2$  mm, white, woody, outwardly faveolate (see with lens at great increase); *foramen* oblong; *apophysis* triangular, acute or subobtuse; *longitudinal keel* inconspicuous, not even is drawn; *transverse crest* notorious, developed. *Granatule* pentagonal dodecahedric, subspheric, provided ordinarily of twelve seeds.

SEEDS polyhedrics, equinulate; *testa* chestnut or obscure red; *echinules* whitish in the apex; external face frequently pentagonal, convex; *pleuras* flat; *hilum* disposed in the fund of a depression.

HABITAT. According with the collectors' labels, grows on quartzites, near the large or small river banks, c. 700-800 ft.

#### REGARDING THE ETYMOLOGY AND ORTHOEPY of the specific name

The specific name celebrates its collector Richard Evans SCHULTES (1915-2001). The name is proparoxytone, stressed on the antepenultimate syllable, shul-té-sij.

The six known collections were collected by him; the all are very rich vouchers, excellent material.

#### OBSERVATIONS

The fact of that possess two vernacular names, in the Maku and Makuna languages, suggests us that has some known usefulness by the indigenous.

I have let the words "maku" and "makuna" such as were in the label. The Makuna or "water people", also know as taiwano, are a people inhabiting the Vaupés and speaking the Eastern Tucano language. The language Maku is spoken in the Colombian and Brazilian Amazon, it belongs to the the linguistic family Puinave-Maku.

#### EXAMINED SPECIMENS

##### COLOMBIA, (30) VAUPÉS:

- 19LCD97** -00.27°, -070.89°; «caño Teemeña: río Pirapaná (tributary of río Apaporis), 00°15'00"25'S, 070°50'/070°30'W. Herb; flowers white», *I. Cabrera Rodríguez & R. E. Schultes 17317*, 09-IX-1952 (COL, non vidi; US 2730421).
- 19LCD97 «caño Teemeña: río Pirapaná (tributary of río Apaporis), 00°15'00"25'S, 070°30'W. Herb; flowers white», *I. Cabrera Rodríguez & R. E. Schultes 17447*, 10-IX-1952 (COL, non vidi; US 217912; US 2730419; US 2730420).
- 19MCV35** -00.45°, -070.53°; «caño Teemeña: río Ricapuyá (tributary of río Apaporis below mouth of río Pirapaná), 00°25'S, 070°30'W, ad 700 ft. Herb; flowers white. "mashee-e-be-ya" (makuna); "ö-leé-fshan" (maku)», *I. Cabrera Rodríguez & R. E. Schultes 17649*, 25/26-IX-1952 (COL, non vidi; US 217965; US 2730418, holo.; US 2730422; typus *S. Schultesii*).
- 19MCV39** -00.09°, -070.53°; «raudal Yayacopi (La Playa): and vicinity, río Apaporis, 00°05'S, 070°30'W, ad 800 ft. Quartzite base», *I. Cabrera Rodríguez & R. E. Schultes 15350*, 15-II-1952 (COL, non vidi; US 2730424).
- 19MCV39 «raudal Yayacopi (La Playa): and vicinity, río Apaporis, 00°05'S, 070°30'W, ad 800 ft. Quartzite base», *I. Cabrera Rodríguez & R. E. Schultes 16220*, 15-IV-1952 (COL, non vidi; US 2730417).
- 19MCV65** -00.45°, -070.26°; Río Pirapaná (stm), 00°26'S, 070°15'W, «caño Oo-moó-ña: río Pirapaná. Herb; flowers white», *I. Cabrera Rodríguez & R. E. Schultes 17150*, 03-IX-1952 (COL 240531; US 2730423).

##### 35 *Spigelia megapotamica* Fernández Casas, *Fontqueria* **55**(66): 541-546, n° 35 (20-x-2008), **spec. nov.**

TYPUS: *B. Maguire 60116* (MO 3283872, holo.-; NY s/n).

- Subgen. *Spigelia*, sect. I.IV *Graciles* Progel in A. W. Eichler & I. Urban, *Fl. bras.* 6(1): col. 257, sect. iii (1868)

ICONOGR.: *laminæ nostræ* v, vi, *pagellæ* 543, 544.

DISTR. GEOGR.: **America meridionalis**: Brasil (Amazonas), cf. tabula 3, pagella 545.

**ABREVIATA DIAGNOSIS** vel character essentialis

Ab *Spigelia guianensis* (= *S. humilis*) aliquo modo proxima, sed foliis secus margines lævibus, nec prorsus dentatis primo visu differt. A *S. rondoniensis* metastylis petiolisque brevioribus discrepat etiamnum.

**MAIN DIAGNOSTIC FEATURES** or diagnostic characters

Species in some way related with *Spigelia guianensis* (= *S. humilis*), it differs at first by its leaves with non forward dentate, smooth margin. From *S. rondoniensis* differs by its metastyle and petiole shorter.

**DESCRIPTIO** ex holotypo, *B. Maguire 60116* (MO 3283872)

Sicut collectorum schedulæ planta herbacea, humilis vel robusta, 12-30 cm; flores albi, albi purpureo lineati, albi apice roseum, rosei vel lavandulacei.

*Herbacea* usque ad 30 cm, infirma vel modice robusta, hemicryptophyta. *Rhizomata* brevia, ad 1,5 mm ø, horizontalia vel ascendentia, radicania, caules prodeuntia. *Caules* ascendenti erecti, quadrangulari, sursum parum ramificati, nodi excepti admodum glabri. *Rami* pauci, apicali, erecti, modice alati vel conspicue quadrangulari, nodis exceptis admodum glabri. *Internodia* quam folia breviora, rare subæquilonga, modice papilloso puberula.

**FOLIA** omnia opposita, basis pilosiuscula excepta glaberrima, sessilia vel brevissime petiolata; primo visu trinervia. *Petiolus* nullus vel brevissimus si adest. *Stipulæ* facille delapsæ?, papilloso pilosæ, interdum ad lineam reductæ, interdum nullæ. *Limbus* 3-4 cm × 2,5-3,5 mm, anguste lanceolatus vel anguste ellipticus, acutus, cuneatus, planus, tantum marginibus revolutis. *Nervus medius* (longitudinalis) bene notatus, supra æquans, subtus prominens, reliquo limbo lætior. *Nervi secundarii* duo, basalis, ad medio paralleli sed parum notati, dimidium foliarum longitudine parum superanti. *Margo* lævis, stricte revolutus.

**INFLORESCENTIÆ** paucifloræ, secundæ, (1)3-6(8) floriferi, 3-10 mm pedunculatæ, præcipue terminales sed nonnullis brevioribus in supremis axillis ortæ, ægre inter folias supremas exstantes. *Axis* præcipue bicostatus, costæ alteræ duæ parum conspicuæ. *Bracteæ* inconspicuæ, dorso virides, margo lætiores, ad sepalos simillimæ sed minores, vel parum maiores, usque 1,5-3,5 × 0,5-1,3 mm.

**FLORES** secundi, sessili subsessilisve, evoluti 5-10 mm inter se distantes. *Pedunculus* nullus vestigialisve. *Calyx* viridis, gamosepalus; sepala ad basim breviter connata, anguste triangularia, glabra, læte viridia, usque 2,5(3) × 0,5-0,6(0,8) mm; dorsum subcarinatum; margo strictus, hyalino albicans. *Corolla* usque 20 mm, infundibuliformis, sursum gradatim dilatata; lobi (petalorum pars libera) ad 5 mm (difficile observanda). *Filamenta* quinque, ad tubum corollæ adnata; pars libera <1 mm, lateraliter compressa, apice curvata. *Antheræ* 1,5-1,7 × 0,5 mm, sagittatæ, basifixæ, in tubo corollæ inclusæ. *Ovarium* piriforme, glabrum, ut videtur lateraliter compressum. *Stylus* cylindricus, ad 14 mm (stigma inclusum). *Stigma* papillosum, ad basim parum dilatatum, ad 2,5-3 mm, lateraliter compressum, inter antheras exstante.

**CAPSULA** ad 3 × 4,5 × 2 mm. *Loculi* subsphærici. *Pericarpium* glabrum, læve. *Metastylus* usque 2,3-2,5 mm, cylindricus, viridis, apice dilatatus. *Carpoatlas* ad 3 × 1,3-1,5 mm, lignosus, albicans; *apophyses* rotuntatæ, subplanæ; *carina longitudinalis* nulla, aliquando picta; *crista transversa* efecta, acuta; *foramen* ellipticum. *Granatula* octoseminata (dua tantum vidimus).

**SEMINA** variabilia, formæ truncato pyramidales quam cuneato sphæricas frequentiores. *Testa* omnino verrucosa; *pleuræ* quam dorsum verrucosioræ, cellulis plus minusve isodiametricis.

**HABITAT.** Sicut collectorum schedulæ, in rupibus et ad ripas humiditas magnis fluminibus amazoniensis crescit.

**DESCRIPTIO** of the type collection, *B. Maguire 60116* (MO 3283872)



PLATE V. *Spigelia megalotamica* Fernández Casas, B. Maguire 60116 (MO 3283872, holotype).



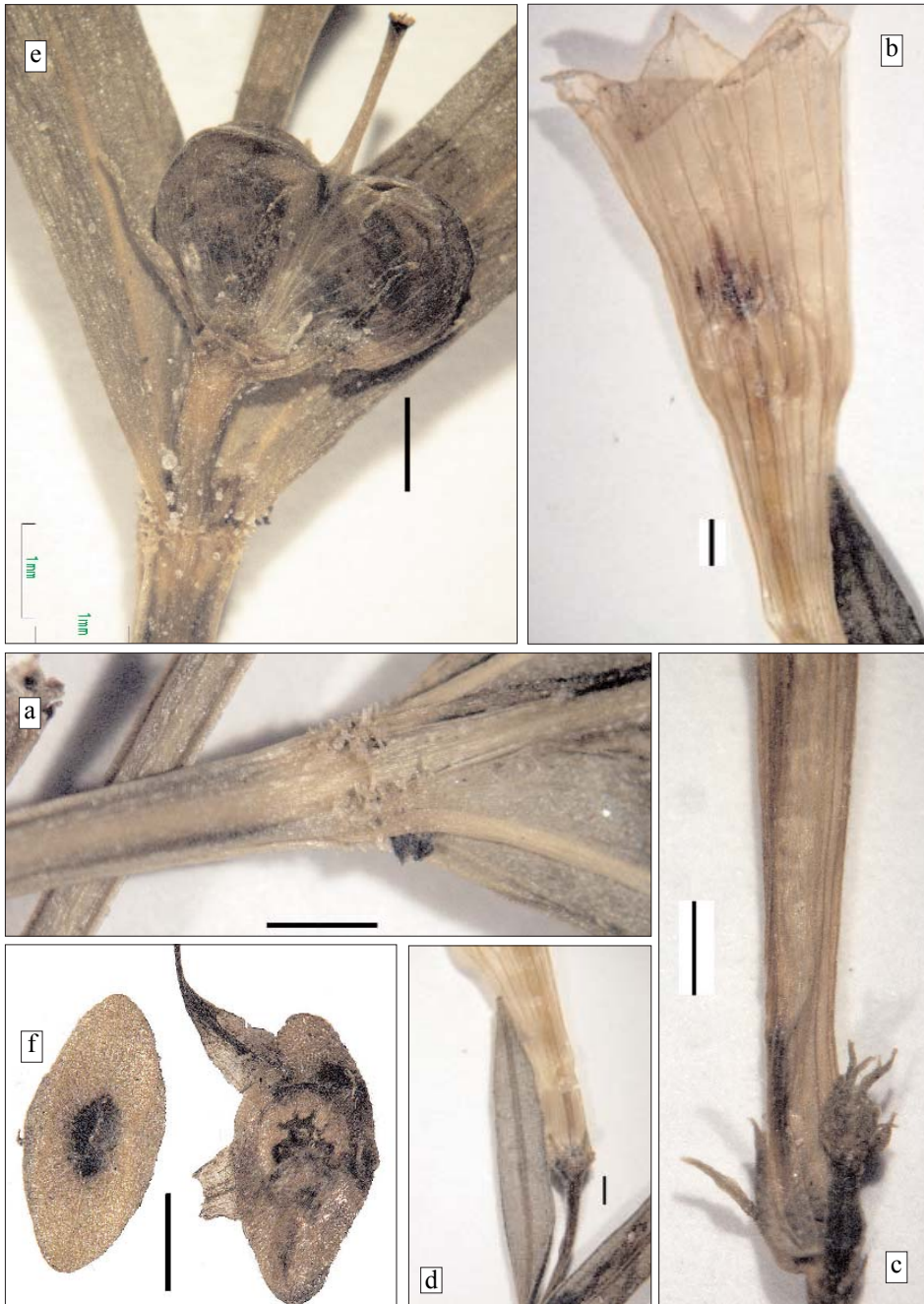
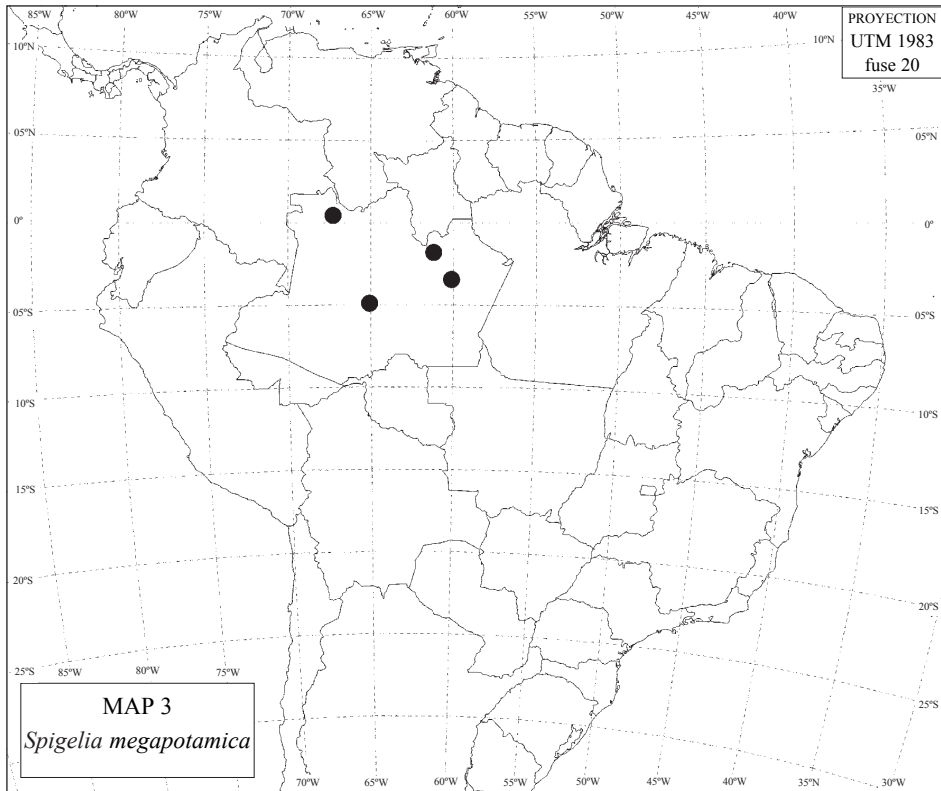


PLATE V. *Spigelia megapotamica* Fernández Casas. a) Abaxial base leaf. b-d) Flower. e) Ripe fruit with metastyle. f) Carpoatlas. a-d) *B. Maguire 60116* (MO 3283872, holotype). e, f) *N. Tomas da Silva 60986* (MO 3283899; NY s/n). Black stroke= 1 mm.



According to the labels of the collectors is a herbaceous plant, humble or healthy, 12-30 cm; white flowers, white and with purple lines, white and with the pink apex, or pink, or of lavender color.

Herb up to 30 cm, delicate or moderately healthy, hemicriptophyte. *Rhizomes* short, c. 1,5 mm  $\phi$ , horizontal or rising, issuing roots and stems by its nodes. *Stems* rising erect, quadrangular, few branching upper; unless in the knots, thoroughly glabrous. *Branches* scarce, apicals, erects, moderately winged or conspicuously four-angled; the same as the stems thoroughly glabrous, except in the nodes. *Internodes* shorter than the corresponding leaves, rarely evening them in length, discreetly papillose puberule.

*LEAVES* all opposite, quite glabrous unless by the base that it is short pilose, sittings or very briefly petiolate; to first sight trinervate. *Petiole* absent or extremely short if is that exists. *Stipules* very caducous?, papillate pilose, sometimes they reduced to a simple interpetiolar line, sometimes non-existent or more or less inconspicuous. *Limb* 3-4 cm  $\times$  2,5-3,5 mm, narrowly lanceolate or narrowly elliptical, acute, cuneate, flat, alone in the margins a little revolute. *Middle nerve* (longitudinal) notorious, it does not project by the aspect, by the prominent back, clearer than the rest of the limbo. *Secondary nerves* two, base parallel to the middle nerve but less notorious, hardly exceed half of the length to limb. *Margin* smooth, very narrowly revolute.

*INFLORESCENCES* few flowered, one sided, with (1)3-6(8) flowers, pedunculate 3-10 mm, mainly terminals but sometimes they are another shorter in the axillas of the upper leaves, hardly show by between the leaves. *Axis* with it all length traveled by two longitudinal ribs, with two other ribs less apparent. *Bracts* inconspicuous, green on back, with clearest margins, very similar to the sepals, but a little greater, until, 5-3,5  $\times$  0,5-1,3 mm.

*FLOWERS* one sided, sessile or subsessile during anthesis, be far mutually 5-10 mm. *Peduncle* void or vestigial. *Calyx* green gamosepalous; *sepals* briefly connated for its base, narrowly trian-

gular, glabrous, green clear, until  $2,5(3) \times 0,5-0,6(0,8)$  mm; *back* subcarinate; *margin* narrow, whitish hyaline. *Corolla* until 20 mm funnel shaped, gradually widened upward; lobes (free part of the petals) c. 5 mm (difficult to observe, very tenuous). *Filaments* five, adnates to the corolla tube; free part <1 mm, sideways compressed, recurvate in the apex. *Anthers* 1,5-1,7  $\times$  0,5 mm, sagittate, basixed, foundlings in the corolla tube. *Ovary* pear shaped, glabrous, seems a little laterally compressed. *Style* cylindrical, c. 14 mm (including the stigma). *Stigma* papillose, a little delayed in the base, c. 2,5-3 mm, compressed sideways, it projects between the anthers.

**CAPSULE** c.  $3 \times 4,5 \times 2$  mm. *Locules* subsferics. *Pericarp* glabrous, smooth. *Metastyle* up to 2,3-2,5 mm, cylindrical, green, widened at apex. *Carpoatlas* ca.  $3 \times 1,3-1,5$  mm, woody, whitish; *apóffisis* redondeadas, casi planas; *quilla* longitudinal nula, a veces dibujada; *cresta* transversa desarrollada, aguda; *foramen* elíptico. *Grandtulo* con ocho semillas (dos únicas observaciones).

**SEEDS** variable, with pyramidal truncated forms more times that cuneate spherical. *Testa* anywhere verrucose. *Pleuris* wartier than the back, with cells approximately isodiametrical.

**HABITAT.** According to the collectors it grows on rocks and in riverside moist places, along the big Amazonian rivers.

#### REGARDING THE ETYMOLOGY AND ORTHOEPY of the specific name

*Megapotamica* is a Latin adjective (female singular, to agreeing with *Spigelia*) of Greek origin, composed with the adjective μέγαç-, megálon, meaning big or great, and the substantive ποτάμοç, meaning river; it say therefore "from the big rivers", attired from its habitat. The name is proparoxytone, stressed on the antepenultimate syllable, me-ga-po-tá-mi-ca.

#### EXAMINED SPECIMENS and bibliographic references

##### BRASIL, (04) AMAZONAS:

- 19NFA95** 00.45°, -067.29°; Rio Cauabury, Cabury (stm), 00°31'N, 067°16'W, «between Cachoeiras Jacamin and Manajós, along rio Caburi. Flowers pale lavender», *B. Maguire 60116*, *C. K. Maguire & J. A. Steyermark*, 06-XI-1965 (MO 3283872, holo-; NY s/n; typus *S. megapotamica*).
- 20MKV76** -04.89°, -065.07°; 04°52'S, 065°02'W, KE75, «Tapuruquára. Rocky island in river; on rocky beach. Herb 12 cm; corolla white, the lobes with two vertical purplish lines», *P. J. M. Maas, O. P. Monteiro, G. T. Prance 15701, J. Ferreira Ramos & D. B. Woolcott*, 19-X-1971 (A, non vidi; C, non vidi; COL, non vidi; F 1863775; G, non vidi; INPA, non vidi; K, loan H43/95: 8; K, loan 2004/1260: 147; M, non vidi; MG, non vidi; MICH, non vidi; MO 2988501; NY s/n; P, non vidi; R s/n; S s/n; U, non vidi; US 2864161; VEN, non vidi).
- 20MQD00** -01.81°, -061.20°; rio Camanaú (stm), 01°48'S, 061°12'W, «Camanaú: above, rio Negro. Rocky island. Herb 20 cm; corolla white with two vertical purple lines on each corolla lobe», *P. J. M. Maas, O. P. Monteiro, G. T. Prance 16025, J. Ferreira Ramos & D. B. Woolcott*, 02-XI-1971 (A, non vidi; C, non vidi; COL, non vidi; F 1863774; G, non vidi; INPA, non vidi; K, non vidi; K, loan 2004/1260: 148; M, non vidi; MG, non vidi; MICH, non vidi; MO 3041500; NY s/n; P, non vidi; R s/n; S s/n; U 81988; US 2864164; VEN, non vidi).
- 20MRB22** -03.44°, -060.12°; Igarapé do Jacamin (stm), 03°25'29"S, 060°03'42"W, «between Cachoeiras Manajós and Tomaz, along rio Cauaburi. Moist places along margin of rio. Calyx and stamens rose», *N. Tomas da Silva 60986 & U. Brazão*, 05-II-1966 (MO 3283899; NY s/n).

#### ACKNOWLEDGEMENTS

To the curators and other responsible personnel of the herbaria COL, F, K, MA, MO, NY, R, S, U, US, who lent me their material or facilitated my visits. Ulpiano Emilio Souto Mandelos has processed the digital photographs of the plates i-vi, and he made the three distributional maps.

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