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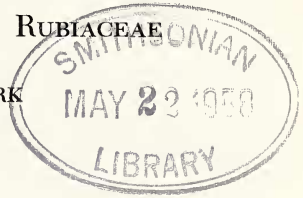
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THE MACHRIS BRAZILIAN EXPEDITION

BOTANY: PHANEROGAMAE,

EUPHORBIACEAE, LENTIBULARIACEAE, RUBIACEAE

By JULIAN A. STEYERMARK



CONTRIBUTIONS IN SCIENCE is a series of miscellaneous technical papers in the fields of Biology, Geology and Anthropology, published at irregular intervals by the Los Angeles County Museum. Issues are numbered separately and numbers run consecutively regardless of subject matter. Number 1 was issued January 23, 1957. The series is available to scientists and scientific institutions on an exchange basis. Copies may also be purchased at a nominal price.

The MACHRIS BRAZILIAN EXPEDITION from the Los Angeles County Museum was sponsored by Mr. and Mrs. Maurice A. Machris and Mrs. Maybell Machris Low. It was conducted under the auspices of the Museu Nacional do Brasil. Botanical and zoological collections were made from April through June, 1956, in the region of the headwaters of the Rio Tocantins in the state of Goiás. General accounts and itineraries are given in papers 1 and 2 of this series. Technical type specimens of new entities are deposited in the Museu Nacional in Rio de Janeiro.

HILDEGARDE HOWARD

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# THE MACHRIS BRAZILIAN EXPEDITION

BOTANY: PHANEROGAMAE,

EUPHORBIACEAE, LENTIBULARIACEAE, RUBIACEAE

By JULIAN A. STEYERMARK<sup>1</sup>

The following account continues the reporting of the plant collections obtained by Expedition botanist, E. Yale Dawson. The specimens are cited by his field collection numbers for which detailed locality data have been provided in the general account of the botany of the Expedition<sup>2</sup>. Briefly, however, specimens bearing numbers from 14133 to 14815 came from the Chapada dos Veadeiros, between São João da Aliança and Veadeiros, April 13-May 3, 1956. Those bearing numbers from 14816 to 15236 came from the region between Amaro Leite and Peixe, especially in the southern Serra Dourada, May 15-June 10, 1956.

The first set of specimens, including isotypes of the seven new species and one new form are deposited in the Los Angeles County Museum.

## EUPHORBIACEAE

*Caperonia stenophylla* M. Arg. 15143 Previously known only from Minas Gerais (Lagoa Santa, *Warming* 1545). The capsules were unknown at the time of the original description. The following description is based upon the present collection: capsula tricocca, 3 mm. alta 6-7 mm. lata tuberculata; seminibus subglobosis fuscis 2.5 mm. diametro foveolato-punctatis.

*Cnidoscolus cnicodendron* Griseb. 15092 *Jatropha vitifolia* Mill. var. *genuina* M. Arg.; Pax, (1910, p. 88). Pax divides *J. vitifolia* into several varieties of presently doubtful status. As shown by McVaugh (1944, p. 471), the correct name for this taxon is *Cnidoscolus cnicodendron* Griseb. The var. *genuina* (=var. *cnicodendron*) has been known previously from Goiás.

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<sup>2</sup>Dawson, E. Yale. 1957. The Machris Brazilian Expedition. Botany: General. Los Angeles Co. Mus. Contr. Sci. (2):1-20.

*Croton angustifrons* M. Arg. 14194 Previously known only from Minas Gerais.

***Croton douradensis* sp. nov.**

Figs. 1, 2

Stipules subulate, 2-4 mm. long, moderately appressed-pubescent with simple hairs; leaves petiolate, the petioles 6-25 mm. long, rather densely stellate-pubescent; leaf blades undivided or deeply 2-3-lobate, 4-5 cm. long, 2-4.5 cm. wide, lateral lobes smaller and narrower than the intermediate ones, 1-3 cm. long, 0.7-1.7 cm. wide, crenate, moderately appressed-pubescent above with simple hairs, gray green below with short stellate pubescence; racemes terminal, slender, 12-17 cm. long; rachis rather densely canescent; pistillate flowers: calyx lobes 6, unequal, one larger, the others elliptical-ovate, acute, 2.5-4 mm. long, 0.6-1.5 mm. wide, hispidulous on both sides; petals 5, erect, lanceolate, acute, 2 mm. long, 0.7-0.8 mm. wide, sparsely or moderately pubescent on both sides with ascending hairs; glands of the petals 20, minute, suborbicular, 4 at the base of each petal; styles 3, flabellately 8-divided from the middle; ovary pilose; staminate flowers: pedicels 5-7 mm. long; staminate receptacle densely pilose; calyx deeply 5-parted, divisions elliptical-oblong, obtusish, 2 mm. long, 1 mm. wide, pilose on both sides; petals 5, obtuse, 2 mm. long, 1 mm. wide; stamens 12-15; filaments glabrous.

Caules videntur saltem 0.5-metralis, superne herbacei; caulibus teretibus pilis stellatis moderatim juvenalibus densiuscule vestitis; stipulis subulato-linearibus 2-4 mm. longis pilis simplicibus moderatim adpresso-pubescentibus; foliis petiolatis, petiolis 6-25 mm. longis pilis stellatis plerumque densiuscule vestitis; laminis membranaceis indivisis vel profunde 2-3-lobatis, si indivisis ovatis cuspidato-acuminatis 4-5 cm. longis 2-4.5 cm. latis, si divisis laciniis lateralibus intermedia minoribus brevioribus angustioribusque, lobis lateralibus oblongo-lanceolatis 1-3 cm. longis 0.7-1.7 cm. latis, lobo intermedio vel lobo majore elliptico-ovato vel obovato 4.5-6 cm. longo 2.5-4 cm. lato, crenatis supra pilis simplicibus ad 0.8 mm. longis moderatim adpresso-pubescentibus subtus cinereo-viridibus indumento brevi stellari molli vestitis; racemis terminalibus gracilibus elongatis 12-17 cm. longis micranthis floribundis non comosis, i. e. bracteis flores masculos haud vel non excedentibus, inferne mixto-bisexualibus; rhachi angulosa densiuscule canescenti; bracteis triangulari-lanceolatis vel subulatis ad 2 mm. longis; floribus foemineis: calycis foeminei laciniis 6 inaequalibus, uno majore, elliptico-ovatis acutis 2.5-4 mm. longis 0.6-1.5 mm. latis utrinque hispidulis; petalis 5 erectis lanceolatis acutis cucullatis 2 mm. longis

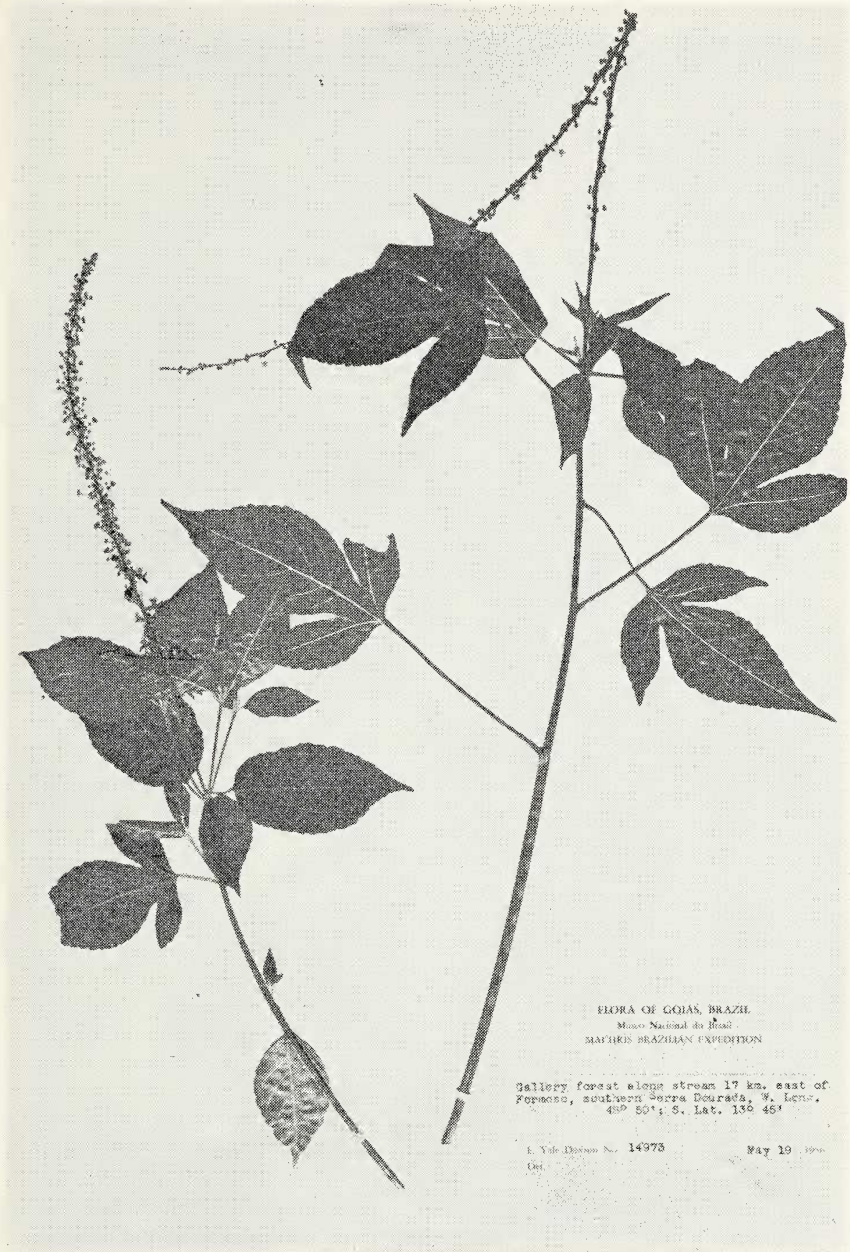


Fig. 1. *Croton douradensis* sp. nov. The holotype specimen, x 0.38

0.7-0.8 mm. latis, marginibus incurvatis, utrinque pilis adscendentibus parce vel moderatim vestitis; petalorum glandulis 20 minutis sub-orbicularibus, 4 basi intus cuiusque petali; stylis tribus e medio flabel-latim 8-divisis, ramis 2.6-3 mm. longis 0.5 mm. diam. canescentibus, cruribus tenuibus 2.7-2.8 mm. longis pilis adscendentibus hispidulis; ovario piloso; floribus masculis; pedicellis 5-7 mm. longis basin versus angustatis stellato-pubescentibus; receptaculo masculino dense piloso; calyce profunde 5-partito, laciniis (sepalis) elliptico-oblongis obtusi-usculis 2mm. longis 1mm. latis scariosis utrinque pilosis inferne remote ciliatis; petalis 5 membranaceo-scariosis obtusis 2 mm. longis 1 mm. latis; staminibus 12-15, filamentis glabris; capsulis ignotis.

TYPE: *Dawson* 14973 (holotype R, isotypes F, LAM), collected in gallery forest along stream 17 km. east of Formoso, region of the

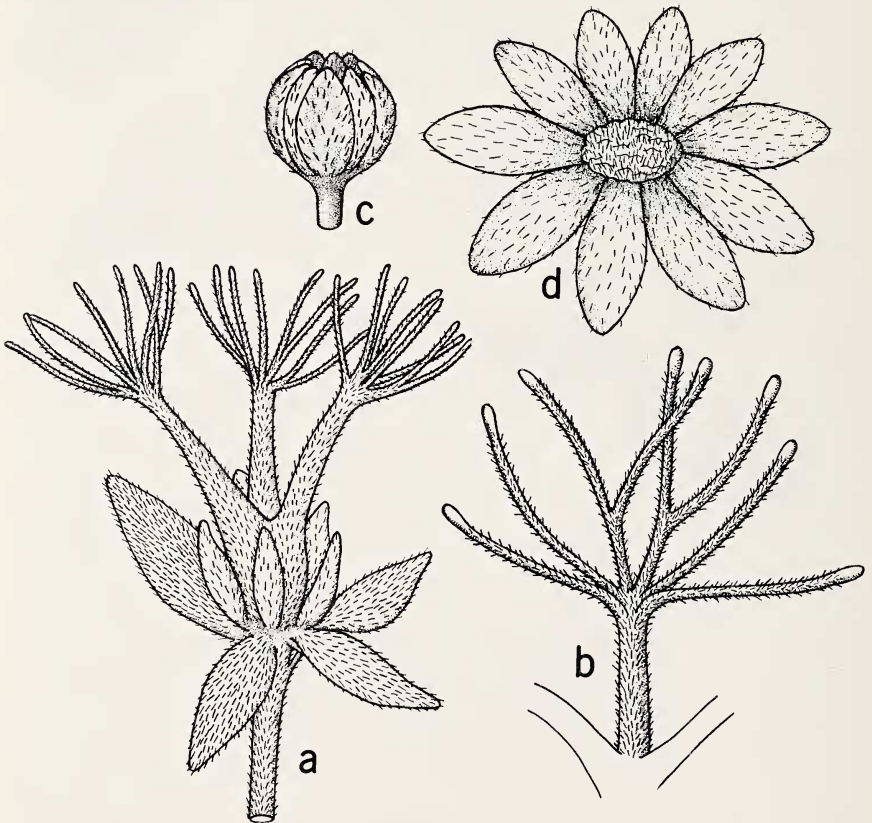


Fig. 2. *Croton douradensis* sp. nov. a. Pistillate flower,  $\times 6.6$ ; b. one of the style arms with branches,  $\times 8$ ; c. staminate flower in bud,  $\times 6.6$ ; d. staminate flower opened, showing receptacle,  $\times 10$ . All drawn from holotype.

southern Serra Dourada at W. Long. 48° 40', S. Lat. 13° 40', Goiás, Brazil, May 19, 1956.

This species, at first, might appear to be related to such species of section *Astraea* Baill. as *C. gardneri* M. Arg., but that section has glabrous staminate receptacles, and a 5-parted pistillate calyx. It may perhaps better be considered an anomalous member of section *Decalobium* M. Arg., which includes species having a pubescent staminate receptacle and pistillate flowers sometimes with an unequally 6-10-parted calyx. The present species is marked by the combination of dimorphous leaves, some simple, others 2-3-lobed, pubescent staminate receptacle, glabrous filaments, unequally 6-parted pistillate calyx with one division larger than the other five, 5 pistillate petals with 4 glands at the base of each petal, and 8-cleft divisions of each of the three styles.

*Croton gracilipes* Baill. 15030a The present collection has somewhat larger leaves than most collections examined, but agrees in all other essential characters of the species. The species has hitherto been known in Brazil from Minas Gerais and Matto Grosso, and from Paraguay.

***Croton inaequilobus* sp. nov.**

Figs. 3, 4

Leaves petiolate, petioles 3-6 mm. long; leaf blades ovate or ovate-oblong, obtuse, rounded at base, 1.5-3.5 cm. long, 1-2.5 cm. wide, irregularly simply or doubly crenate, stellate-pubescent above, densely stellate-tomentose below with whitish interrupted tomentum; racemes densely-flowered; pistillate flowers: calyx unequally 5-parted, one segment inconspicuous, narrowly lanceolate, acutish, 2-3 mm. long, 0.7-0.8 mm. wide, glabrous within, 3 lobes obovate-rounded, 4-4.5 mm. long, 3.5 mm. wide, entire, stellate-pubescent on both sides, a fifth segment larger, obovate, 5 mm. long, 3.5 mm. wide, entire, stellate-pubescent on both sides; styles 3, once divided, shortly dichotomously bifid; ovary obpyriform; staminate flowers: pedicels 1.5 mm. long; calyx deeply 5-parted, segments ovate, obtuse, 1.5-2 mm. long, 1.1-1.2 mm. wide, glabrous within, densely stellate-pubescent without; petals 5, spatulate-obovate, obtuse, 1.75 mm. long, 1 mm. wide, pilose on both sides; receptacle pilose; stamens 11; filaments glabrous.

Fruticulus saltem 2.5-4 dm. altus, ramis teretibus inferne fuscis vel nigrescentibus superne cum petiolis et inflorescentiis et pagina inferiore foliorum tomento stellari velutino ex argillaceo albicante densissime tectis; stipulis sub indumento fere omnino occultis; foliis petiolatis,

petiolis 3-6 mm. longis; laminis subcoriaceis supra cano-viridibus subtus argillaceo-albescentibus ovatis vel ovato-oblongis obtusis vel obtusiusculis basi rotundatis 1.5-3.5 cm. longis, 1-2.5 cm. latis plus mi-



FLORA OF GOIAS, BRAZIL.  
Museo Nacional do Brasil  
MACHRE BRAZILIAN EXPEDITION

Sandstone rocky area on west bank of stream  
and above, 34 km. south of Veadeiros, Chapada  
dos Veadeiros, approx. E. Long. 49° 30';  
S. Lat. 14° 30'

E. Yule Herbar. No. 14866

April 25, 1961

Det.

Fig. 3. *Croton inaequilobus* sp. nov. The holotype specimen, x 0.4.



nusve irregulariter simpliciter vel duplicato-crenatis penninerviis vel abbreviato-palminerviis, nervis lateralibus utroque 3-4 subtus paullo prominulis supra pilis stellatis brevibus dense vestitis, subtus indumento dense stellato-tomentoso magis albicante non interrupte obtectis; basi eglandulosis vel 1 vel 2, glandulis disciformibus; racemis evolutis densifloris 1.5-1.7 cm. longis, bracteis setaceis acuminatis extus dense stellato-tomentosis intus glabris 2.5-3.5 mm. longis 0.5 mm. latis; floribus foemineis: calyce inaequaliter 5-partito, una lacinia fere obsoleta anguste lanceolata acutiuscula 2-3 mm. longa 0.7-0.8 mm. lata intus glabra, tribus laciniis obovatis rotundatis 4-4.5 mm. longis 3.5 mm. latis integris utrinque stellato-pubescentibus, una lacinia majore obovata rotundata 5 mm. longa 3.5 mm. lata integra utrinque stellato-pubescenti; stylis 3 semel breviter dichotome bifidis, ramis 0.5 mm. longis cruribus 1.5 mm. longis stellato-pubescentibus praeter apices papillosos; ovario obpyriformi 4-5 mm. longo 3.5-4 mm. lato dense stellato-pubescenti; floribus masculis: pedicellis 1.5 mm. longis stellato-

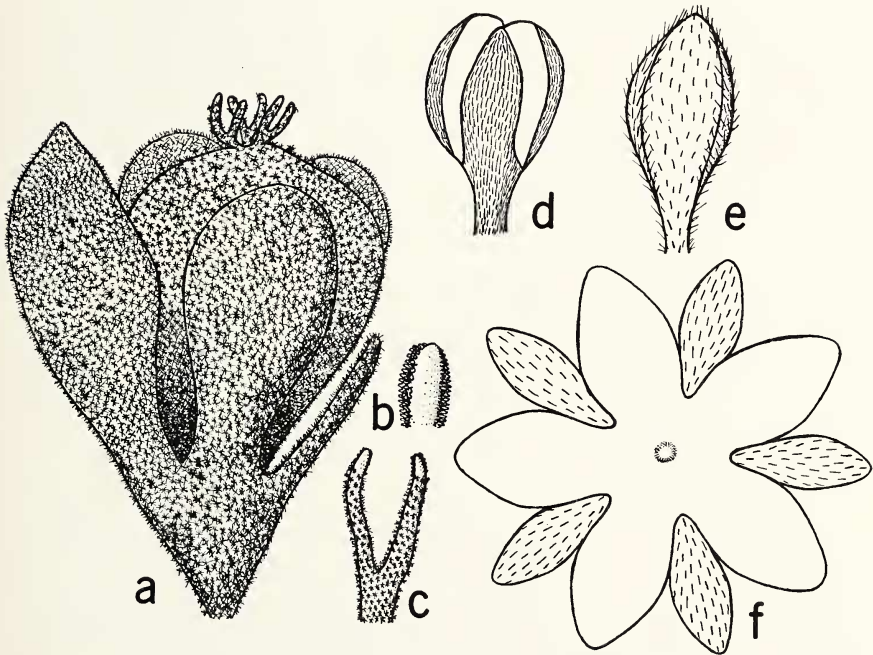


Fig. 4. *Croton inaequilobus* sp. nov. a. Pistillate flower, x 9; b. papillate margins of style tips, x 26; c. style branches, x 26; d. stamen, x 22.5; e. staminate flower in bud, x 11; f. staminate flower expanded, view from below, x 11.

pubescentibus; calyce profunde 5-partito, laciniis ovatis obtusis 1.5-2 mm. longis 1.1-1.2 mm. latis extus dense stellato-pubescentibus intus glabris; petalis 5 spatulato-obovatis obtusis 1.75 mm. longis 1 mm. latis marginibus involutis utrinque pilosis; receptaculo piloso; staminibus 11; antheris 0.9 mm. longis 0.8 mm. latis, filamentis glabris 2.5-2.6 mm. longis; capsulis stellato-tomentosis immaturis.

TYPE: *Dawson* 14685 (holotype R, isotypes F, LAM), collected in sandstone rocky area on west bank of stream and above, 14 km. south of Veadeiros, region of the Chapada dos Veadeiros at W. Long, 47° 30', S. Lat. 14° 20', Goiás, Brazil, April 25, 1956.

This is a very well-marked species, peculiarly characterized by the pistillate flowers having unequal, broadly rounded, obovate, subfoliaceous calyx lobes, and by the leaf blades having either one or two very small disk-shaped glands at their bases, or lacking glands entirely. It seems most closely related to *C. goyazensis* M. Arg. and *C. luzianus* M. Arg.

*Croton urucurana* Baill. 15093 A fairly widespread, somewhat variable species, distributed through much of Brazil, Paraguay, Argentina, and Bolivia. The species varies in the degree of indument on the lower surface of the leaf blades. The filaments in the present collection and in others studied are glabrous, and not "pilosis" as described and figured by Mueller Argoviensis (1873, p. 111, pl. 22). The stamens in the present collection are 13, instead of 17 as stated in *Flora Brasiliensis*.

*Dalechampia caperonioides* Baill. 14231; 14560 A species limited to southern Brazil, with several described varieties, whose relative merits are uncertain. Some of the leaves in *Dawson* 14231 measure up to 38 mm. broad, others only 18 mm. broad. The var. *rhomboidalis* M. Arg., to which most of the present collections may be relegated, has been collected previously in Goiás and Minas Gerais.

*Euphorbia coecorum* Mart. 14182; 14455; 14584 Previously known from Goiás, as well as from Bahia, Minas Gerais, São Paulo, and Matto Grosso. Also known from Paraguay and Bolivia.

*Euphorbia hirta* L. 14395 A weedy and widely distributed species, occurring from Florida and the West Indies to Mexico, Central America, and South America.

*Euphorbia hyssopifolia* L. 14394 A widely distributed species, occurring from the southern United States and the West Indies to Mexico, Central America, and temperate South America.

*Euphorbia machrisiae* sp. nov.

Figs. 5, 6

Stems erect or ascending, 12-14 cm. tall, pilose with spreading hairs to 0.7 mm. long; leaves opposite, short-petiolate, petioles 1-1.5 mm. long, pilose; lamina broadly ovate or suborbicular-oval, obtuse or rounded at the apex, strongly obliquely inequilateral at base, entire with thickened margins, 4-10 mm. long, 3-7 mm. wide, pubescent throughout with hairs 0.5-0.7 mm. long; stipules broadly deltoid, 0.6 mm. long, 0.6 mm. wide, lacerate in upper half with 3-5 lanceolate to deltoid, acute to acuminate lobes, the apex with short, erect, white, crowded hairs; cyathia solitary, terminal or in the uppermost axils; peduncles 1-1.5 mm. long, glabrous; involucre deeply campanulate, 0.5-0.7 mm. long, pubescent within, glabrous without; lobes lanceolate, entire, acute or acuminate, 0.5 mm. long, 0.2 mm. wide, fimbriate, densely pubescent within; glands 4, transversely oblong, 0.4-0.5 mm. long, 0.3-0.4 mm. wide, glabrous, verruculose; staminate flowers 18-21; ovary pilose; styles glabrous, 0.5 mm. long, bifid above; capsule pilose, 2.2-2.5 mm. long.

Radix annua; caulibus erectis vel adscendentibus 12-14 cm. altis inferne simplicibus superne ramosis gracilibus 0.8-1 mm. diam. pilosis, pilis crispis ad 0.7 mm. longis; internodiis inferioribus mediisque 8-17 mm. longis, nodis tumidis dense pubescentibus; foliis oppositis brevipetiolatis, petiolis vinaceis 1-1.5 mm. longis pilosis, laminis firme membranaceis supra olivaceo-viridibus subtus pallido-griseo-viridibus late ovatis vel suborbiculari-ovalibus apice obtusis vel rotundatis basi valde oblique inaequilateralibus integris marginibus incrassatis 4-10 mm. longis 3-7 mm. latis omnino pubescentibus pilis plerumque 0.5-0.7 mm. longis, costa media subtus prominente, venulis subtus prominulis creberrime irregulariter reticulatis; stipulis vinaceis late deltoideis ad 0.6 mm. longis basi ad 0.6 mm. latis, dimidia parte superiore lacerata in lacinas 3-5 lanceolatas vel deltoideas acutas vel acuminatas fissa, glabris praeter margines ciliatos pilos erectos albos rigidos instructos; cyathiis solitariis terminalibus vel in axillas foliorum supremorum; pedunculis vinaceis angulatis 1-1.5 mm. longis glabris; involucris profunde campanulatis obtuse angulatis 0.5-0.7 mm. altis 1.2 mm. diam. intus pubescentibus extus glabris; lobis lanceolatis integris acutis vel acuminatis 0.5 mm. longis 0.2 mm. latis fimbriatis intus dense pubescentibus glandulis excedentibus autem quam appendicibus brevioribus glandulis 4 ochroleucis transverse oblongis 0.4-0.5 mm. longis 0.3-0.4 mm. latis glabris verruculosis; floribus masculis 18-21; androphoris glabris 0.7-1.2 mm. longis; gynophoriis exsertis reflexis glabris; ovario trilobato piloso; stylis glabris 0.5 mm. longis superne bifidis, cruribus

paullo dilatatis; capsulis pilosis 2.2-2.5 mm. longis; seminibus (immaturis) vinaceis quadrangulari-oblongis 1.2 mm. longis 1 mm. latis, latere convexo paullo 3-4-sulcato.

TYPE: Dawson 14594 (holotype R, isotypes F, LAM), collected on sandstone outcrop 7 km. south of Veadeiros, region of the Chapada dos

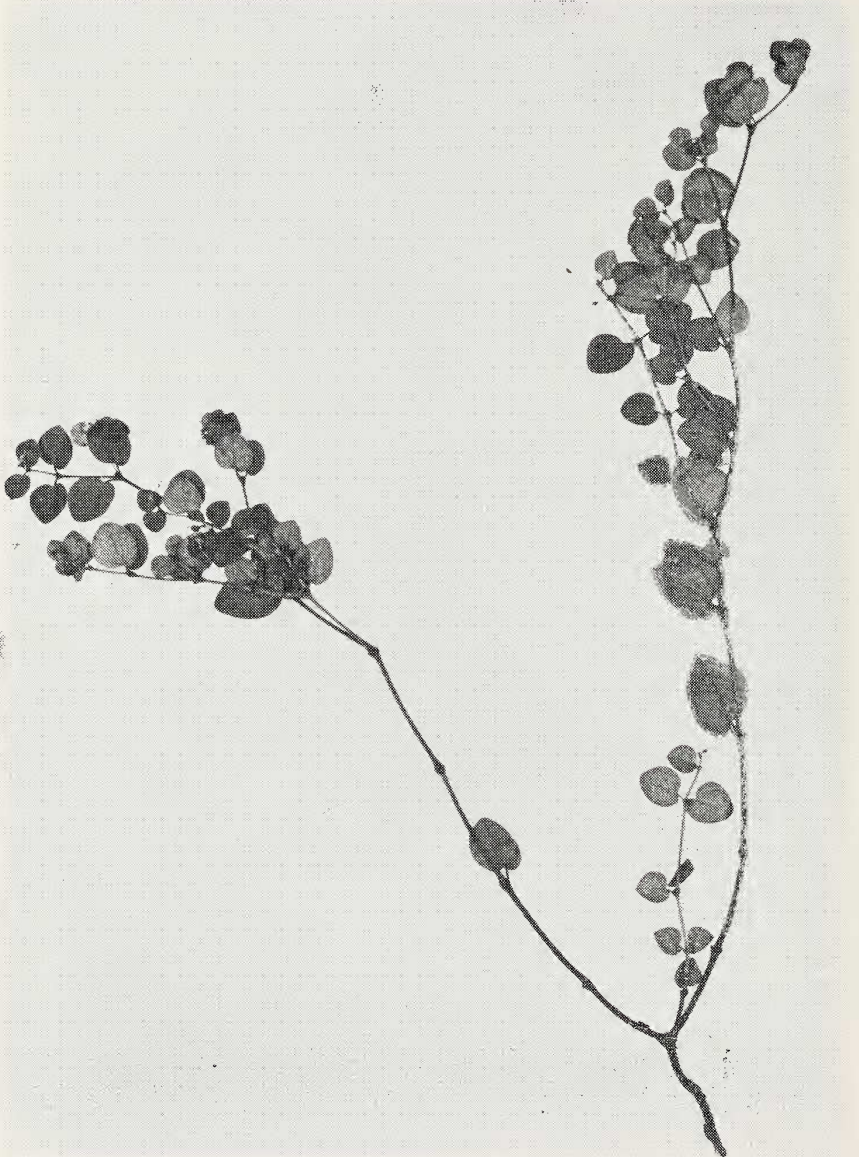


Fig. 5. *Euphorbia machrisiae* sp. nov. The holotype specimen, x 1.0.

Veadeiros at W. Long. 47° 30', S. Lat. 14° 15', Goiás, Brazil, April 24, 1956.

This species appears most closely related to *E. peruviana* Wheeler, from which it differs in the shorter styles, glabrous outer surface of involucre, long-pilose stems and leaf surfaces, more strongly inequilaterally based leaf-blades, shorter petioles, and more conspicuous stipules, which are deltoid instead of linear.

The species is named in honor of Mrs. Paquita Machris.

*Mabea longifolia* (Britton) Pax & K. Hoffm. 15041 This species has been known in Brazil hitherto from Matto Grosso. It is also found in Bolivia.

*Mabea* sp. 15104 In the absence of staminate flowers, the identity of this specimen is uncertain.

*Manihot violacea* (Pohl emend.) M. Arg. 15083 This species is known only from Goiás and Minas Gerais. Pax (1910, pp. 29-30) recognizes several varieties, which, however, at present, cannot be readily distinguished.

*Manihot* sp. 14149 In the absence of pistillate flowers, the identification of this collection must await future exploration.

***Phyllanthus dawsonii* sp. nov.**

Figs. 7, 8

*Phyllanthus ericoides* Glaziou, 1913, p. 613 (*nomen*); not *P. ericoides* Torrey, 1858, p. 193.

Dwarf ligneous plant, 3-4 dm. tall; stems glabrous; stipules subulate, 0.5 mm. long; leaves sessile, erect, spirally arranged, linear-lanceolate, acuminate, 5-7 mm. long, 1-1.25 mm. wide, glabrous; flowers monoecious, mostly solitary; staminate flowers: petals 5, subequal, elliptical-

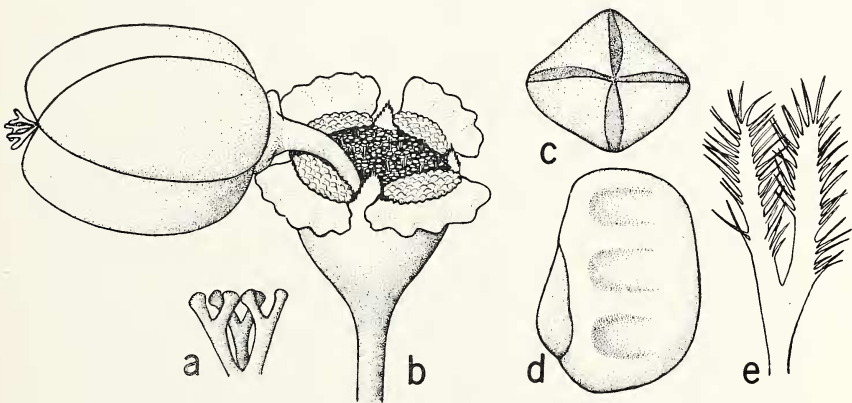


Fig. 6. *Euphorbia machrisiae* sp. nov. a. Styles and branches, x 30; b. pistillate flower, x 18; c. seed, end view, x 18; d. seed, lateral view, x 18; e. bracteole, x 36.

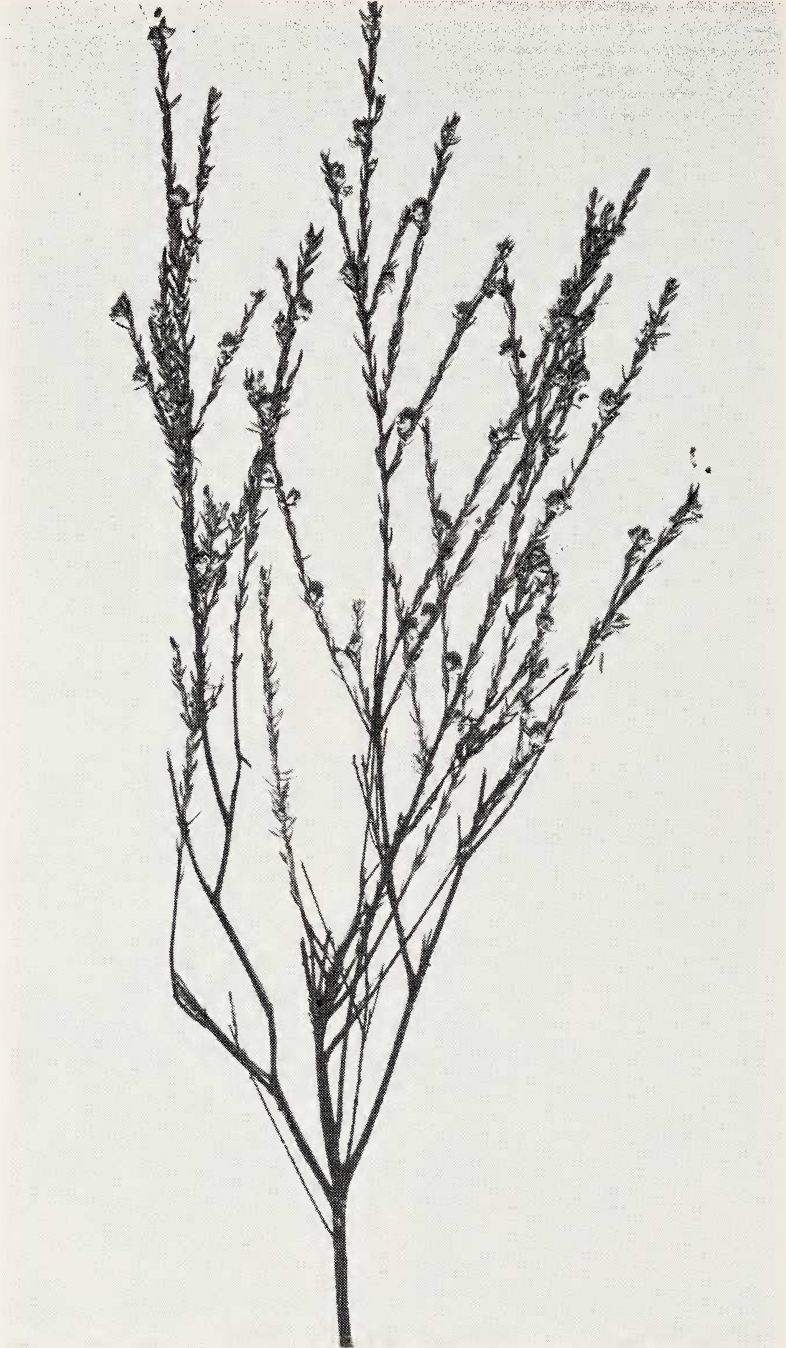


Fig. 7. *Phyllanthus dawsonii* sp. nov. The holotype specimen, x 0.5.

oblong, rounded at apex, 2 mm. long, 1.3-1.4 mm. wide; stamens 3, anthers orbicular, adnate to the apex of the staminal column; filaments monadelphous into a glabrous, erect column 0.8-1 mm. long; pistillate flowers: calyx 6-parted, divisions oblong, obtuse, 3-3.2 mm. long, 1.5 mm. wide, connate 0.75 mm. at the base; styles 3, bilobed above; stylar column 0.5-1 mm. long; seeds acutely trigonous, 2 mm. long, 1.5 mm. wide, prominently reticulate throughout.

Fruticulus 3-4 dm. altus; ramis ramulisque subteretibus 1-1.5 mm. diam. glabris erectis elongatis; internodiis saltem superioribus mediisque 1-2 mm. longis; stipulis rubescentibus subulatis 0.5 mm. longis; foliis pallido-viridibus sessilibus erectis rigidis subcoriaceis spiraliter dispositis lineari-lanceolatis acuminatis acriter cuspidatis basi obtusis 5-7 mm. longis 1-1.25 mm. latis glabris marginibus incrassatis subinvolutis, costa media tantum prominente nervis lateralibus nullis; floribus monoicis plerumque solitariis; pedicellis masculis anthesi 0.5 mm. longis; floribus masculis: petalis 5 subaequalibus elliptico-oblongis apice rotundatis 2 mm. longis 1.3-1.4 mm. latis; staminibus 3, antheris

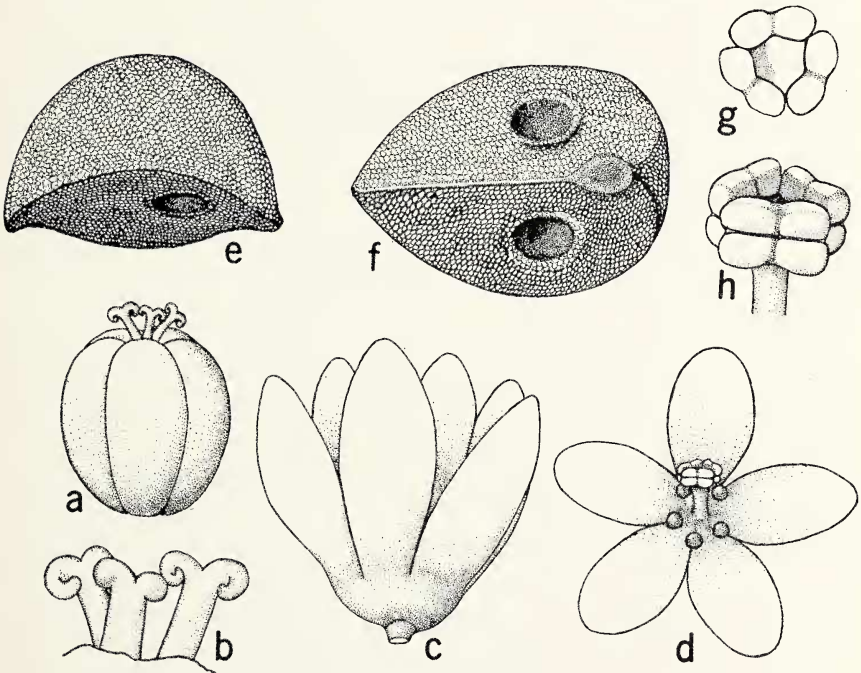


Fig. 8. *Phyllanthus dawsonii* sp. nov. a. Pistil, x 9; b styles and style branches, x 27; c. pistillate flower, x 6; d. staminate flower, x 9; e. seed, x 21; f. seed, x 21; g. stamens attached to column, lateral view, x 27; h. stamens and column, from above, x 27.

orbicularibus bilobatis transverse birimosi 0.5 mm. altis 0.5 mm. latis ad apicem columnae adnatis; filamentis in columnam monadelphis. columna erecta glabra 0.8-1 mm. longa; glandulis florum masculorum 5 liberis orbicularibus cum petalis alternis; floribus foemineis: calyce 6-partito, laciniis inferne 0.75 mm. connatis oblongis obtusis 3-3.2 mm. longis 1.5 mm. latis; stylis 3 semel dichotome divisis superne bilobatis, columna stylari 0.5-1 mm. longa 0.2 mm. diam., cruribus recurvatis; ovario 2.5 mm. alto 3 mm. diam.; seminibus fuscis acute trigonis 2 mm. longis 1.5 mm. latis sub lente per omnes partes prominente reticulatis.

*Type*: Dawson 14776 (holotype R, isotypes F, LAM), collected in wet spring area from among rocks on gentle slope 10 km. from Veadeiros on Cavalcante road, region of the Chapada dos Veadeiros at W. Long. 47° 30', S. Lat. 14° 00', Goiás, Brazil, May 1, 1956.

*PARATYPES*: Dawson 14593a (F, LAM), sandstone outcrop 7 km. south of Veadeiros, region of Chapada dos Veadeiros at W. Long. 47° 30', S. Lat. 14° 15', Goiás, April 24, 1956; Glaziou 22095 (B, BR, F, K, P), Serra da Baliza, dans le campo, Goyaz, Jan.-March.; Glaziou 22093, same locality (B, BR, K, P).

This very distinct species, with its ericoid spirally arranged foliage, has never been described, Glaziou having only named it *P. ericoides* with the brief comment "Frutescent, fl. blanchâtres." The collection of Dawson 14776, in the most satisfactory state of preservation, I have designated as holotype.

*Phyllanthus lathyroides* H.B.K. 14752; 15121 A polymorphic taxon of broad distribution, occurring from Mexico to South America. The present collection has three filaments, which are free and 0.5-1 mm. long, and staminate sepals 1.2-1.5 mm. long.

*Phyllanthus orbiculatus* L. C. Rich. 14488 A widespread South American species, distributed from the Guianas, Trinidad, Venezuela, and Colombia, southward to Brazil, Paraguay, Bolivia, and Peru. It has been collected previously from Goiás.

*Phyllanthus perpusillus* Baill. 15140 This species has hitherto been known only from Minas Gerais. Although Mueller Argoviensis (*Flora Brasiliensis* 11 (2): 55-56, 1873) describes the leaves as "lanceolatis acutis" in the general description of the species, and as "lanceolato-ellipticus, acutus vel subacutus" in the detailed section of the specific description, they are to be characterized as more nearly narrowly elliptic and obtuse or obtusish, instead of acute or acutish. This is borne out by a comparison of Dawson's collections with a photograph and fragment of the Pohl 2677 specimen preserved in the herbarium of the Chicago Natural History Museum.



*Phyllanthus websterianus* sp. nov.

Figs. 9, 10

Lateral branches elongate, divaricately spreading, 7-10 cm. long, 11-15-phyllous; internodes 1-1.5 cm. long; stipules triangular-lanceolate, subulate-acuminate, 0.8-1.5 mm. long; leaves petiolate, petioles 1.5-2.5 mm. long, glabrous: lamina glaucescent below, suborbicular or broadly oval, rounded-obtuse at base and apex, 6-15 mm. long, 5-12 mm. wide; flowers monoecious, mostly 3-4-fasciculate; staminate flowers: calyx 6-parted, divisions connate at base, 3 outer ones shorter, ovate, acute, 1-1.2 mm. long, 0.5-0.6 mm. wide, 3 inner ones ovate, obtuse, 1.5-1.7 mm. long, 1-2 mm. wide; stamens 3, anthers oblong, coherent at the apex, vertically dehiscent, somewhat inclined, 0.9 mm. long; filaments monadelphous into a column 0.8-0.9 mm. long; glands of the staminate flowers connate, 6-angled, undulate, rugose above; pistillate flowers: sepals 6, the outer ones ovate, obtuse or acute, 1.5 mm. long, 0.8-1 mm. wide, the 3 inner ones lanceolate, obtusish, 1 mm. long, 0.2-0.3 mm. wide; styles 3, dichotomously divided; seeds acutely trigonous, 1.2 mm. long, transversely striolate.

Fruticulus saltem 4 dm. altus; ramis ramulisque atrovinaceis subteretibus glabris, ramis 1.5-2 mm. diam., ramulis lateralibus elongatis divaricate patentibus tenuibus 7-10 cm. longis 0.5 mm. diam., 11-15-phyllis; internodiis 1-1.5 cm. longis; stipulis vinaceis triangulari-lanceolatis apice nigrescentibus subulato-acuminatis basi subauriculatis 0.8-1.5 mm. longis, margine scariosis; foliis petiolatis, petiolis gracilibus 1.5-2.5 mm. longis glabris; laminis firme membranaceis supra ut videtur olivaceo-viridibus subtus glaucescentibus suborbicularibus vel late ovalibus utrinque rotundato-obtusis apice minute mucronulatis 6-15 mm. longis 5-12 mm. latis, costis secundariis utrinque 5-6 omnino glabris; floribus monoicis plerumque 3-4-fasciculatis mediocriter pedicellatis; pedicellis masculis anthesi 3-3.8 mm. longis glabris; pedicellis foemineis anthesi 3.5-4 mm. longis; floribus masculis: calyce 6-partito, laciniis inferne connatis, 3 exterioribus brevioribus ovatis acutis 1-1.2 mm. longis 0.5-0.6 mm. latis, 3 interioribus ovatis obtusis 1.5-1.7 mm. longis 1.2 mm. latis marginibus involutis; staminibus 3, antheris late oblongis apicibus cohaerentibus verticaliter birimosi paullo inclinatis 0.9 mm. longis; filamentis in columnam monadelphis, columna 0.8-0.9 mm. longa; glandulis florum masculorum connatis 6-gonis undulatis supra rugulosis; floribus foemineis: sepalis 6, juvenalibus adscendentibus vel erectis vetustioribus patentibus vel descendentibus, 3 exterioribus ovatis obtusis vel acutis 1.5 mm. longis 0.8-1 mm. latis, 3 interioribus lanceolatis obtusiusculis 1 mm. longis 0.2-0.3 mm. latis; stylis 3 semel dichotome divisas inferne connatis, columna stylari 0.5-2.5 mm.



Fig. 9. *Phyllanthus websterianus* sp. nov. The holotype specimen, x 0.38.

longa 0.2-0.5 mm. diam., cruribus 0.2-0.5 mm. longis emarginatis; disco hypogyno urceolari integro 0.3 mm. alto; ovario 0.8 mm. longo; seminibus acute trigonis 1.2 mm. longis sub lente secus lineas longitrorsas transverse striolatis.

TYPE: *Dawson* 14918 (holotype R, isotypes F, G, LAM), collected on banks and margins of small stream running through hilly cerrado 20 km. east of Formoso, region of the southern Serra Dourado at W. Long. 48° 40', S. Lat. 13° 40', Goiás, Brazil, May 17, 1956.

PARATYPE: *Glaziou* 22090 (F, G), Paranauá, dans le campo, Goyaz, March-April, 1898.

I am indebted to Dr. Grady L. Webster for his verification of my conclusion that Dr. Dawson's collection no. 14918 represents an undescribed species. It is with great pleasure that I dedicate this very distinct species to Dr. Webster, whose recent monographic studies on the West Indian species of *Phyllanthus* show careful and precise work in this difficult group of Euphorbiaceae.

Dawson's collection is conspecific with *Glaziou* 22090, identified as *P. amoenus* M. Arg. While habitually similar, *P. websterianus* differs

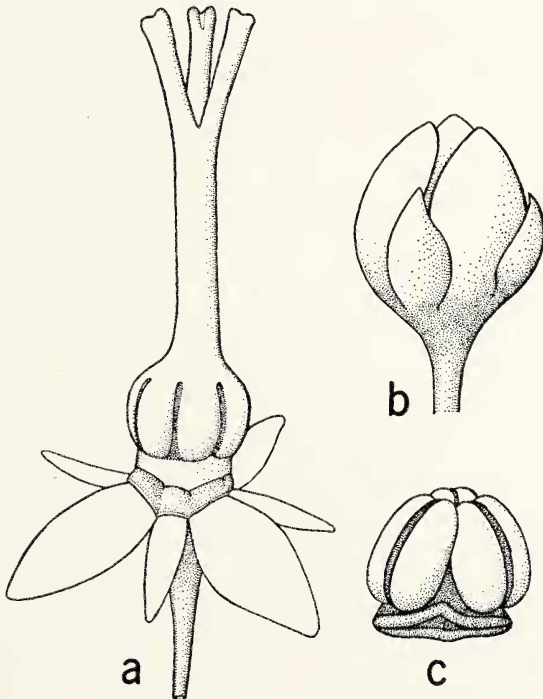


Fig. 10. *Phyllanthus websterianus* sp. nov. a. Pistillate flower, x 14; b. staminate flower, x 14; c. stamens in natural position, x 14.

from *P. amoenus* in the connate filaments, vertically dehiscent anthers, monoecious flowers and fewer leaves of the branchlets.

*Sebastiania bidentata* (Mart.) Pax 14540 This species is limited to southern Brazil. Several varieties have been recognized by Pax (1912, pp. 113-114). The present collection may be referred to *S. bidentata* var. *scoparia* (Mart.) M. Arg., hitherto known from Goiás, Minas Gerais, and Matto Grosso.

*Sebastiania hispida* (Mart.) Pax 14842; 14907 This species is an exceedingly polymorphic one, ranging from Brazil to Paraguay, Bolivia, and Argentina. *Dawson* 14907 may be referred to *S. hispida* var. *laeta* M. Arg., and *Dawson* 14842, a more narrow-leaved variation, to var. *occidentalis* M. Arg., as treated by Pax (1912, pp. 105-113). However, the taxonomic status of the numerous varieties, which he places under *S. hispida*, is quite uncertain at the present time.

*Tragia pohlii* M. Arg. 15122 This is a rare species, known only from Goiás, where it was collected by Pohl (1742, 350). At first, it was believed that Dawson's collection might represent a distinct species, as the racemes showed no glandular hairs intermixed with the hispid pubescence. However, an examination of isotype material (*Pohl* 1742) likewise reveals that most, if not all, of the racemes are without glandularity. Accordingly, the original description should be emended as follows: "racemi axillares vel terminales, ramis plerumque dense hispidulis, interdum glanduligeris (apud M. Arg., Pax et cetera)."

#### LENTIBULARIACEAE

*Utricularia cornuta* Michx. 14792 This collection has the long spurs characteristic of *U. cornuta* var. *cornuta*. This long-spurred variation is found in South America in the Guianas, Venezuela, and Brazil, but has not previously been found in Goiás.

*Utricularia dawsonii* sp. nov.

Figs. 11, 12

Plant 9-15 cm. high; radical leaves few, entire, spatulate-ligulate, rounded at the apex, short-petiolate, 3.5-4 mm. long; cauline scales few, broadly ovate, 0.6-0.8 mm. long, entire, basifixed; bracts 3-lobate, 1 mm. long, 1 mm. wide, median lobe ovate, acutish, lateral lobes ovate-lanceolate, acutish; flowers 1-2, pedicels 7-8 mm. long; upper calyx lobe oblong-ovate, rounded at apex, 2 mm. long, 1.5 mm. wide, entire; lower calyx lobe broadly oblong-ovate, rounded at apex, 1.8 mm. long, 1.5 mm. wide; corolla purple, 14-20 mm. long, upper lip broadly ovate, obtuse, 6 mm. long, 5 mm. wide; lower lip deeply 3-lobed, median lobe rhomboid-oblong, rounded at apex, 5 mm. long, 2.5 mm. wide, lateral lobes rhomboid-oblong, 5 mm. long, 3.5 mm. wide, obliquely

rounded at apex; spur subhorizontal, cylindrical-conic, acutish, 11 mm. long, 1.5 mm. wide.

Herba 9-15 cm. alta; foliis radicalibus paucis integris spatulato-lingulatis apice rotundatis brevipetiolatis 3.5-4 mm. longis; scapo tenui squamoso glabro; squamis paucis distantibus late ovatis obtusiusculis apicem versus constrictis 0.6-0.8 mm. longis integris basifixis; bracteis trilobatis 1 mm. longis 1 mm. latis, lobo medio ovato acutiusculo, lobis lateralibus ovato-lanceolatis acutiusculis; floribus 1-2, pedicellis 7-8 mm. longis; calycis lobo superiore late oblongo-ovato

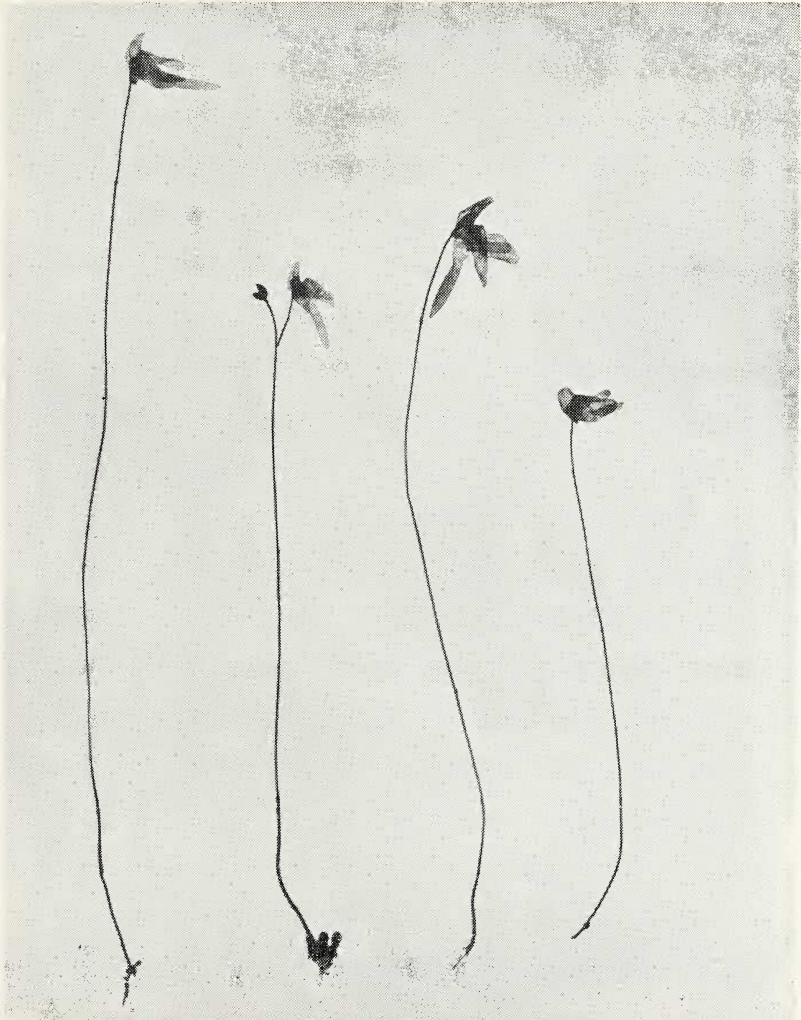


Fig. 11. *Utricularia dawsonii* sp. nov. Four plants from the type collection, x 1.0. The two center specimens are deposited as holotype.

apice rotundato 2 mm. longo 1.5 mm. lato integro valde naviculæ-formi, lobo inferiore late oblongo-ovato apice rotundato 1.8 mm. longo 1.5 mm. lato integro marginibus incurvatis; corolla ut videtur violacea 14-20 mm. longa, labio superiore lato ovato apice obtuso 6 mm. longo 5 mm. lato integro; labio inferiore profunde trilobato, lobo medio rhomboideo-oblongo apice rotundato 5 mm. longo 2.5 mm. lato supra medium sensim angustato, lobis lateralibus rhomboideo-oblongis non-nihil apice oblique rotundatis 5 mm. longis 3.5 mm. latis, a summo palato minute papillato prominente; calcare subhorizontali subrecto cylindrico-conico acutiusculo 11 mm. longo 1.5 mm. lato basi 3.5 mm. lato.

TYPE: *Dawson* 14770 (holotype R, isotypes F, LAM), collected in wet, spring area among some rocks on gentle slope 10 km. from Veadeiros on Cavalcante road, region of the Chapada dos Veadeiros at W. Long. 47° 30', S. Lat. 14° 00', Goiás, Brazil, May 1, 1956.

This species is related to *U. tridentata* Sylven, *U. bicolor* St. Hil., and *U. lindmanii* Sylven. It differs from *U. tridentata* in the more

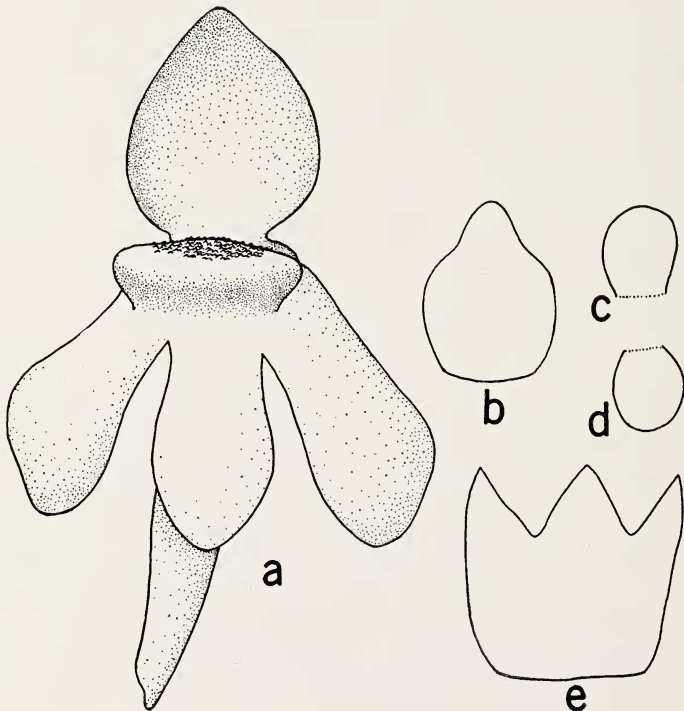


Fig. 12. *Utricularia dawsonii* sp. nov. a. Corolla, x 4.9; b. cauline scale, x 24.5; c. upper calyx lobe, x 5.6; d. lower calyx lobe, x 5.6; e. bract, x 28.

deeply lobed lower corolla lip, the broader upper corolla lip, and the narrower, smaller basal leaves. From *U. bicolor* it differs in the one- or two-flowered, instead of three to many-flowered scapes, the non-flexuous rachis, and the entire lower calyx lobe. From *U. lindmanii* it differs chiefly in the entire, not erose lower calyx lobe and the longer upper corolla lip.

*Utricularia hydrocarpa* Vahl 15142 This species has been known hitherto in Brazil from Minas Gerais. Otherwise, it is known from French Guiana, whence originated the type.

*Utricularia laciniata* St. Hil. 14784 This species has been known previously only from its original station, "Serra do Ibitipoca", in Brazil, where it was collected by St. Hilaire. The present collection agrees with the original description in having some of the cauline scales "ciliato-multipartitae" (Saint Hilaire et Girard 1839, p. 157), mostly 1-flowered scapes, lower lobe of the calyx somewhat bifid, corolla "dilutè violacea, palato lutea", spur somewhat shorter than the lower corolla lip, which is obscurely 3-lobed. The original description refers to the spur as "puberulum." The spurs in the present collection are papillate, perhaps thereby presenting a minutely puberulent aspect, but are not truly puberulous or puberulent.

This species was validly published in 1839. *Utricularia laciniata* Martius, ex Benjamin (1847, p. 251), a later homonym, is synonymous with *U. longeciliata* DC. For a discussion of the taxonomy of the latter species, see Steyermark (1953, p. 540).

*Utricularia subulata* L. forma *cleistogama* (Gray) Fern. 14479 The small-flowered form occurs throughout the range of this species.

#### RUBIACEAE

*Borreria angustifolia* Cham. & Schl. 14276; 14537 Known previously in Brazil from São Paulo and Minas Gerais. Also known from Paraguay.

*Borreria capitata* (R. & P.) DC. 14171; 14195 (in part) A widely distributed species of South America.

*Borreria centranthoides* Cham. & Schl. 14133 This species is common in Argentina, Paraguay, and Uruguay, and extends north into southeastern Brazil to Minas Gerais and Goiás. A previous Goiás collection is Gardner 3785.

*Borreria ocymoides* (Burm.) DC. 14195 (in part) A species widely distributed from Mexico into South America. Previously known from Goiás.

*Borreria poaya* DC. var. *nervosa* Schumann 14820 This variety, in which the stems, leaves, and calyces are prominently pubes-

cent, has been found previously in Goiás. *Borreria poaya* var. *poaya*, together with its other varieties, is known from Minas Gerais, Goiás, and São Paulo.

Many specimens labeled as *Diodia gymnocephala* (DC.) Schumann, and also distributed under an unpublished specific epithet of *Diodia* by Standley should be referred to *Borreria poaya* var. *nervosa* and other varieties of *B. poaya*.

*Borreria suaveolens* Mey. 14832 A widely distributed and variable species of tropical Mexico, Central and South America.

*Coccocypselum aureum* Cham. & Schl. 14473 This species has been known previously from Bahia and Minas Gerais.

*Declieuxia dasyphylla* K. Schumann ex Glaziou, emend. Steyermark.

*Declieuxia dasyphylla* K. Schumann ex Glaziou, 1909, p. 359 (nomen).

Dwarf ligneous plant, 1-1.7 dm. tall; stems erect, simple, glabrous; stipules decurrent, mostly hirtellous, 1-1.2 mm. long, subulate; leaves crowded, erect to ascending, subcoriaceous, pale green below, sessile, elliptic-oblong, obtuse at base and apex, 1.5-3 mm. long, 0.6-1.7 cm. wide, glabrous except minutely hispidulous-ciliolate toward the base, the margins revolute, lateral nerves obscure, veins obsolete; inflorescence terminal, cymose-paniculate; peduncles glabrous; flowers many, sessile; bracts conspicuous, foliaceous, exceeding the calyx, linear-ligulate, obtuse, 3-4.5 mm. long, glabrous; hypanthium glabrous; sepals minute, linear, obtuse, 0.7-0.8 mm. long, 0.1-0.2 mm. wide; corolla 7.5 mm. long, tube 5 mm. long, glabrous without, pilose within, lobes ovate, obtuse, 2.25 mm. long, 1.5 mm. wide; anthers oblong; filaments free.

Fruticulus 1-1.7 dm. altus, caulibus e caudice lignoso pluribus erectis vulgo vel plerumque simplicibus glabris striato-angulatis; internodiis foliis brevioribus; stipulis e basi late dilatatis subulatis 1-1.2 mm. longis rigidis erectis plerumque hirtellis decurrentibus; foliis creberrimis erectis vel erecto-adscendentibus subcoriaceis subtus pallido-viridibus sessilibus elliptico-oblongis utrinque obtusis 1.5-3 cm. longis 0.6-1.7 cm. latis glabris praeter basin versus minutissime hispidulo-ciliolatos, marginibus revolutis, penninerviis, nervis lateralibus obscuris utroque 3-4, venis obsoletis, costa media subtus prominente; inflorescentiis terminalibus cymoso-paniculatis 1-3 cm. altis 2-4 cm. latis, pedunculis glabris, floribus pluribus sessilibus plus minusve secundis, bracteis conspicuis foliaceis calycem superantibus lineari-ligulatis obtusiusculis 3-4.5 mm. longis 0.5-0.6 mm. latis glabris; hypanthio glabro latiore quam longo in anthesi 1.25 mm. alto 1.6 mm. lato, sepalis minutis linearibus obtusis 0.7-0.8 mm. longis 0.1-0.2 mm. latis; corolla 7.5 mm. longa, tubo



5 mm. longo sursum paullo sensim dilatato basi ipsa 1.25 mm. lato superne 2.5 mm. lato extus glabro intus piloso; lobis ovatis obtusis 2.25 mm. longis 1.5 mm. latis apice marginibus cucullato-incrassatis glabris; antheris oblongis 1 mm. longis 0.3-0.4 mm. latis; filamentis 1.8-1.9 mm. longis liberis; stigmatibus anguste oblongis 1 mm. longis papillosis; fructus coccis valde compressis 2.2 mm. longis 1.5 mm. latis.

TYPE: *Glaziou* 21502 (holotype F, isotypes B, BR, F, K, P) "entre Rio Tocantins et Os Porcos, Goyaz, Brazil, Janvier-Fevrier."

PARATYPE: *Dawson* 14163 (F, LAM), open grassland and cerrado border 20 km. north of São João da Aliança, region of the Chapada dos Veadeiros at W. Long. 47° 30', S. Lat. 14° 30', Goiás, April 13, 1956 (as to specimen with glabrous bracts and peduncles).

The species indicated as new in Glaziou's "Plantae Brasiliae centralis a Glaziou lectae" published in various fascicles (Bull. Soc. Bot. Fr. Mem. 3 a- 3 g: 1-661. 1905-1912) have been treated by a number of botanists as a catalogue of names or *nomina nuda* (Harms, 1924, p. 123; Cowan, 1957, pp. 16-17). In the present instance (K. Schumann ex Glaziou, 1909, p. 359), the only words, "Frutescent, fl. blanches" used in the publication of *Declieuxia dasyphylla* are insufficient for identification. Many botanists might construe such brevity as insufficiently detailed to constitute a description, and would therefore consider it a *nomen nudum*. Other botanists, however, might be inclined to accept such names as valid, arguing that a description can involve the mention of but a single word.

In order to assure the perpetuation of Schumann's name and to eliminate any future doubts as to its usage, I have provided the above detailed description of this species. This has seemed prudent, because 1) the name is widely distributed in herbaria, and 2) by various botanists might be construed as already validly published, although inadequately described.

Of the two sheets of *Declieuxia dasyphylla* preserved in the herbarium of Chicago Natural History Museum, one bears a leafy stem with an inflorescence, originally part of a specimen sent from the herbarium of the Muséum National d'Histoire Naturelle at Paris. The other sheet consists of a fragment and photograph of a specimen from the herbarium of the Botanical Garden of the Botanisches Museum at Berlin-Dahlem. I have indicated the latter sheet (fragment and photo from the Berlin-Dahlem herbarium) as the actual holotype. Both specimens have glabrous bracts and peduncles.

One of the specimens collected by Dawson has the bracts and peduncles glabrous, as in the material examined of *Glaziou* 21502, and

designated by me as holotypic and isotypic. The other Dawson specimen has the bracts and peduncles minutely hispidulous-ciliolate. As this character differs from typical *D. dasyphylla* as seen in the holotype, isotype, and paratype at the Chicago Natural History Museum herbarium, I am designating it as follows:

***Declieuxia dasyphylla* f. *ciliolata* f. nov.**

Peduncles and bracts minutely hispidulous-ciliolate.

A f. *dasyphylla* pedunculis bracteisque minute hispidulo-ciliolatis differt.

TYPE: Dawson 14163a (holotype R, isotypes F, LAM), open grassland and cerrado border 20 km. north of São João da Aliança, region of the Chapada dos Veadeiros at W. Long. 47° 30', S. Lat. 14° 30', Goiás, Brazil, April 13, 1956 (as to specimen with hispidulous-ciliolate bracts and peduncles).

*Declieuxia fruticosa* (Willd.) Kuntze 14993 A widespread species of Colombia, Venezuela, Brazil, and Paraguay.

*Declieuxia fruticosa* (Willd.) Kuntze 14265 This collection represents the extreme pubescent variation found in the species, which is synonymous with *D. chiococcoides* H.B.K. Mueller Argoviensis (1881, pp. 441-445) described a number of varieties of *D. chiococcoides*, varying in leaf shape, pubescence of stems and leaves, and glabry or pubescence of fruits. Until the variations of this group have been carefully restudied, it is not possible at present to assign a given varietal name to the present collection. Because of its lance-elliptical leaves, acute at the base, and pubescent fruits, the present collection would fall somewhere between *D. chiococcoides* var. *puberula* and var. *guyanensis* (= *D. fruticosa* var. *guyanensis* [M. Arg.] Standl.).

*Declieuxia oenanthoides* M. Arg. var. *stenophylla* M. Arg. 14725 The variety has been known previously from Goiás, Minas Gerais, and São Paulo. The species is a Brazilian one, limited to the few states mentioned above.

***Diodia angustata* sp. nov.**

Figs. 13, 14

Stems ascending, cinereous-hispidulous with crowded subfasciculate hairs up to 1.5 mm. long; middle internodes 3.5-5 cm. long; leaves subcoriaceous, narrowly lanceolate or linear-lanceolate, sessile, 2.5-6 cm. long, 2-8 cm. wide, acuminate, margins entire, strongly revolute, mostly glabrous except sometimes with a few, short, rigid hairs near the base, lateral nerves 4-5 on each side, prominent below; stipular sheaths 3-4 mm. long, densely hirtellous with the larger setae 3-7 mm. long; inflorescences mostly terminal, sometimes axillary, few-flowered; flowers



Fig. 13: *Diodia angustata* sp. nov. - The holotype specimen, x 1.0.

3-5; bracts prominent, broadly lanceolate, 5-7 mm. long; calyx 4-fid, 8-9.5 mm. long, lobes equal, lanceolate, 4.5-6 mm. long, 0.8-1 mm. wide; hypanthium turbinate, 4 mm. long, hispidulous without; corolla infundibuliform, 9-9.5 mm. long, tube 4.5-5 mm. long, hirsute within at the base, lobes 4, oblong-ovate, acute, 4.5 mm. long, 2.5 mm. wide, hirsute without, glabrous within; stamens 4, shorter than the corolla lobes; filaments glabrous, 3 mm. long; stigma capitate-globose, subbilobate.

Herbacea perennis basi lignescens caulibus adscendentibus superne parce ramosis saltem ad 2 dm. longis 1-2 mm. diam. cinereo-hispidulis pilis subfasciculatis confertis ad 1.5 mm. longis praeditis post delapsum praesertim inferne epidermidis cortice fusco obtectis; ramis alternis vel oppositis inaequilongis; internodiis mediis 3.5-5 cm. longis; foliis subcoriaceis angustate lanceolatis vel lineari-lanceolatis sessilibus 2.5-6 cm. longis 2-8 mm. latis acuminatis mucronatis basin versus valde angustatis marginibus valde revolutis integris utrinque plerumque glabris interdum basin versus utroque pilis brevibus rigidis praeditis, nervis lateralibus valde adscendentibus utroque 4-5 supra valde sulcatis subtus prominentibus; vaginis stipularibus 3-4 mm. longis dense hirtellis, setis plurimis majoribus 3-7 mm. longis ciliatis instructis; inflorescentiis plerumque terminalibus interdum axillaribus paucifloris, floribus 3-5; bracteis prominentibus late lanceolatis 5-7 mm. longis setoso-mucronatis hispidulis; calyce 8-9.5 mm. longo 4-fido, lobis aequilongis lanceolatis 4.5-6 mm. longis 0.8-1 mm. latis hypanthio longioribus acuminatis apice setoso-mucronatis, setis 0.5 mm. longis, extus intusque hispidulis; hypanthio turbinato 4 mm. longo apice 3.5 mm. lato extus hispidulo; corolla infundibuliformi 9-9.5 mm. longa, tubo 4.5-5 mm. longo basi intus hirsuto, lobis 4 oblongo-ovatis acutis 4.5 mm. longis 2.5 mm. latis extus hirsutulis intus glabris; staminibus 4 lobis corollae brevioribus, antheris oblongis 2.5 mm. longis 0.8 mm. latis; filamentis glabris 3 mm. longis 0.5 mm. latis; stylo glabro 8 mm. longo; stigmatibus capitato-globosis subbilobatis 0.5 mm. diam.; seminibus ignotis.

TYPE: *Dawson* 14672 (holotype R, isotypes F, LAM, US), collected on grassy hillslope near canyon bottom in sandstone area 14 km. south of Veadeiros, region of the Chapada dos Veadeiros at W. Long. 47° 30', S. Lat. 14° 15', Goiás, Brazil, April 24, 1956.

This species appears to be most closely related to *D. radula* Cham. & Schl., from which it differs in the narrower and more nearly glabrous leaves, mostly terminal inflorescences, prominent bracts, hairs on the stem in close tufts or fascicles, and the longer calyx lobes.

I am indebted to Dr. Lyman B. Smith, Curator, Division of Phane-

rogans, United States National Museum, for his courtesy in comparing this collection with critical material in the herbarium of that institution, and for his discriminating comments.

*Diodia teres* Walt. 14193 A widespread species, extending from tropical America northward to the United States.

*Guettarda viburnoides* Cham. & Schl. 14432 This species has been collected previously from Goiás, as well as from Minas Gerais, Bahia, São Paulo, Rio de Janeiro, Maranhão, Paraná, Matto Grosso, and Ceará, and in Paraguay.

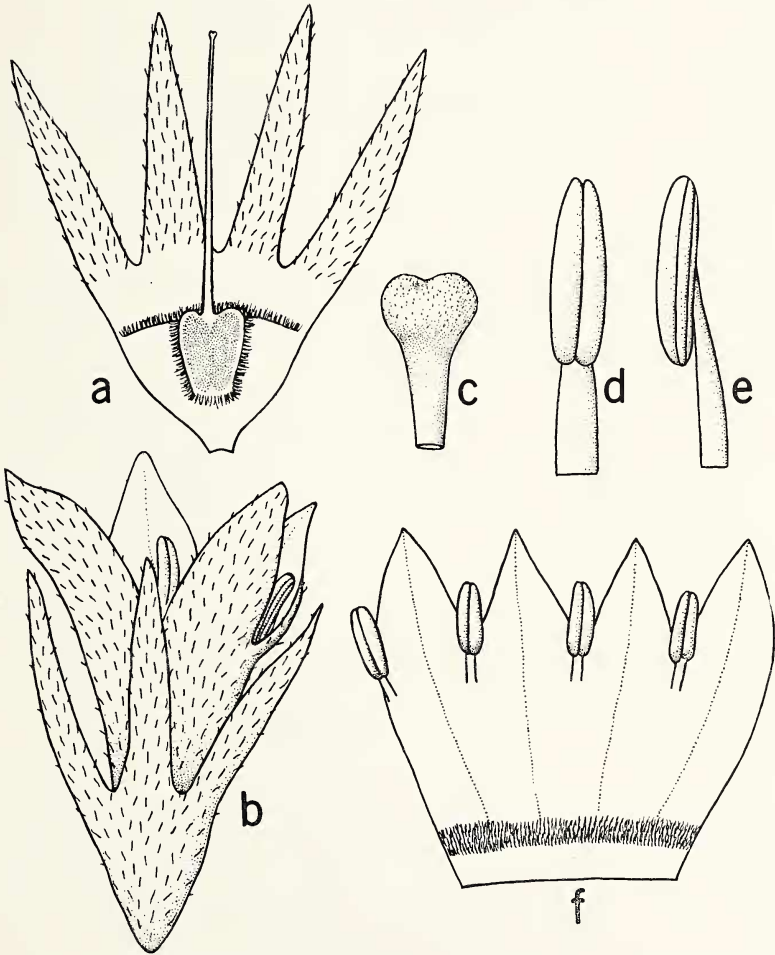


Fig. 14. *Diodia angustata* sp. nov. a. calyx opened, showing interior of hypanthium and pistil, x 6. b. flower in position with calyx and corolla, x 5; c. stigma and top of style, x 25; d., e. stamen, x 10; f. corolla opened from within, x 5.

*Manettia cordifolia* Mart. 15043; 15075 A widely distributed species occurring from Peru to Argentina.

*Mitracarpus recurvatus* Standley 14583 Previously known only from the holotype collection (*Glaziou* 21511 from "Goyaz (?)" in Kew Herb.), the present collection is the first good flowering material known. The original material, Standley noted (1931, p. 385), is in a condition "so far past flowering that it is difficult to determine satisfactorily the characters of the inflorescence." For this reason, the following discrepancies may be stated as occurring between the measurements given in the original description and those taken from the Dawson collection: the sepals (calyx lobes) in *Dawson* 14583 are 2.5 mm. instead of 1-1.5 mm. long; the corolla tube in *Dawson* 14583 measures 3-4 mm. instead of "fere" 2 mm. long; the corolla lobes of the *Dawson* collection are 1.5 mm. instead of 0.7 mm. long and are elliptic-oblong. These floral differences are, doubtless, based upon the more poorly preserved state of the flowers in the holotype collection.

*Palicourea rigida* H. B. K. 15054 A widely distributed species in South America, previously known from Goiás.

*Psychotria barbiflora* DC. 14569 A fairly widely distributed species in Brazil. Also known from British Guiana, Venezuela, and Colombia.

*Psychotria formosa* Cham. & Schl. 14753 A Brazilian species, previously known from Goiás. Also known from Pará and Minas Gerais. It is said to be economically important because of its toxicity to cattle.

*Psychotria trichophora* M. Arg. 14472 This species is known only from Goiás. The original collection (*Pohl* 2053) was taken along the Rio Maranhão.

*Psychotria xanthophylla* M. Arg. 14151 A Brazilian species known from Goiás, Minas Gerais, and São Paulo.

*Psyllocarpus laricoides* Mart. & Zucc. 14619 This species is common in Minas Gerais. This is the first record from Goiás. It has also been collected in Brazil in Bahia and Rio de Janeiro.

*Relbunium noxium* (St. Hil.) K. Schum. 14249 The holotype was collected in Minas Gerais. This is the first record from Goiás. The species is distributed from Peru and Bolivia to Brazil and Uruguay.

*Tocoyena formosa* Schumann 14191 A fairly widely distributed species in Brazil; also ranging north to British Guiana and Surinam, and south and west to Paraguay and Bolivia.

*Ucriana longifolia* Spreng. 14843 A monotypic genus, previously known from Goiás. It is confined to a sector of Brazil from Maranhão south to Rio de Janeiro and west to Matto Grosso.

## LITERATURE CITED

- Benjamin, L.  
1847. Utricularieae, in, Martius, *Flora Brasiliensis* 10:234-255, pls. 20-22.
- Cowan, R. S.  
1957. The Machris Brazilian Expedition. Botany: Phanerogamae, Leguminosae. Los Angeles Co. Mus. Contr. Sci. (16):1-24, 7 figs.
- Glaziou, A. F.  
1905-12. *Plantae Brasiliae centralis a Glaziou lectae*. Bull. Soc. Bot. Fr., Mem. 3a-g:1-661.
- Harms, H.  
1924. Leguminosae Americanae novae VII. Fedde Repert. nov. spec. reg. veg. 20:123-136.
- McVaugh, R.  
1944. The genus *Cnidocolus*: generic limits and intrageneric groups. Bull. Torrey Bot. Club 71(5):457-474.
- Mueller, J. (*Argoviensis*)  
1873. Euphorbiaceae, in, Martius, *Flora Brasiliensis* 11(2):1-292, pls. 1-42.  
1881. Rubiaceae, in, Martius, *Flora Brasiliensis* 6(5):1-470, pls. 1-66.
- Pax, F.  
1910. Euphorbiaceae—Jatrophae, in, *Das Pflanzenreich* IV. 147(2):1-148.  
1912. Euphorbiaceae—Hippomaneae, in, *Das Pflanzenreich* IV. 147(5):1-319.
- Saint Hilaire, A. et F. de Girard  
1839. Monographie des Primulacées et des Lentibulariées des Brésil . . . Ann. Sci. Nat. ii, 11:149-169.
- Standley, P. C.  
1931. Studies of American plants—V. Field Mus. Nat. Hist. Publ., Bot. Ser. 8(5):293-398.
- Steyermark, J. A.  
1953. Contributions to the flora of Venezuela. Ericaceae through Compositae. Fieldiana: Botany 28(3):449-678, figs. 95-144.
- Torrey, J.  
1858. Botany of the boundary, pp. 29-270, pls. 1-66, in, Emory, Report of the U.S. and Mexican Boundary Survey, vol. 2. Washington.