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PODANDROGYNE BREVIPEDUNCULATA (CAPPARIDACEAE), A NEW SPECIES FROM ECUADOR

*Theodore S. Cochrane**

Podandrogyne Ducke (Capparidaceae), distributed in tropical, mostly montane, regions of Central and Andean South America, is a small, evolutionarily advanced member of the Cleomoideae. The history of the genus, presented by Woodson (Ann. Missouri Bot. Gard. 35: 139-146. 1948), need not be reviewed here. Since his time no additional taxa have been formally proposed. However, current studies toward a revision of *Podandrogyne* indicate that there are at least seven additional undescribed species, one of which is described below.

Podandrogyne brevipedunculata Cochrane, sp. nov. (Plates 9 & 10).

Herba suffruticosa subcarnosa 0.3-2 m alta, admodum omnino glabra. Folia digita, foliolis 3-5; lamina elliptica vel anguste elliptica, media 8-26 cm longis, 3-9 cm latis, textura tenue membranacea, aspectu glabra sed subtus in venis microscopice papillosis-puberulis. Inflorescentiae corymbosae maximae brevae pedunculo 3-18 mm longo elatae, rachide dense multiflora ad 26 mm longa. Calyce campanulato 3.4-6.6 (10) mm longo, lobis deltoideis acutis 0.5-2.4 (4) mm longis. Petala spathulata 9.6-15.1 mm longa, prope medium in ungues tenuia 4.3-8.1 mm longos constrictae. Flores masculini cum androgynophoris manifestis exsertis. Nectarium late depressum-obovoideum, lobis quatuor partim liberis. Siliquae tenuissime cylindraceae, 7.6-18.3 cm longae, 3-5 mm crassae.

Erect, usually slender suffruticose herbs 3-20 dm tall; stems simple or few-branched, somewhat succulent, glabrous, like the petioles and midveins green or often suffused with dull dark red-violet. Leaves 3-5-foliolate; petioles 2-21 cm long, glabrous or very minutely glandular-papillate; leaflets elliptic to narrowly elliptic, long-acuminate, cuneate at base, the central blades 8-26 cm long, 3-9 cm wide, 2-3.3 times longer than wide, thinly membranous, glabrous above, the veins beneath glabrate to densely and very minutely papillate-puberulent. Racemes pronouncedly corymbiform, densely several- to many-flowered, short and strict, 1.3-3.5 cm long; floriferous portion (rachis) to 3.4 cm long, the lower sterile portion (peduncle) often stout, 0.3-1.8 cm long. Pedicels 8-17 mm long, glabrous or minutely papillate. Bracts 1-5, unifoliolate or the lowermost 3-foliolate, irregularly deciduous and the inflorescence often appearing ebracteate in fruit; blades mostly oblong-elliptic, varying from elliptic to narrowly ovate-oblong or if highly reduced lanceolate, acuminate to attenuate, rounded to cuneate at base, 0.5-14 cm long, 0.2-6 cm wide; petioles 0.3-4.6 cm long. Calyx campanulate, pale green, 3.4-6.6 mm long, very rarely to 10 mm long (*Sparre 15236*, a robust succulent plant); sepals united for (51) 59.5-85.5% of their length, the lobes deltoid to triangular, broadly to narrowly acute, 0.5-2.4 mm long,

Plate 9. *Podandrogyne brevipedunculata.* Figures A, B and C drawn to same scale. A, flowering branch (leaves from *Asplund 5534*, S; inflorescence from *Gentry 9507*, WIS); B, cauline leaf with comparatively narrow leaflets and inset enlargement to show undersurface detail (*Mexia 8443*, UC); C, fruiting inflorescence (*Sparre 17222*, S) and inset enlargement to show detail of receptacle and androgynophore with portions of pedicel (above) and gynophore (below) (*Gentry 9507*, WIS); D, seed (*Knight 1116*, WIS).

*University of Wisconsin, Madison, Wisconsin 53706.

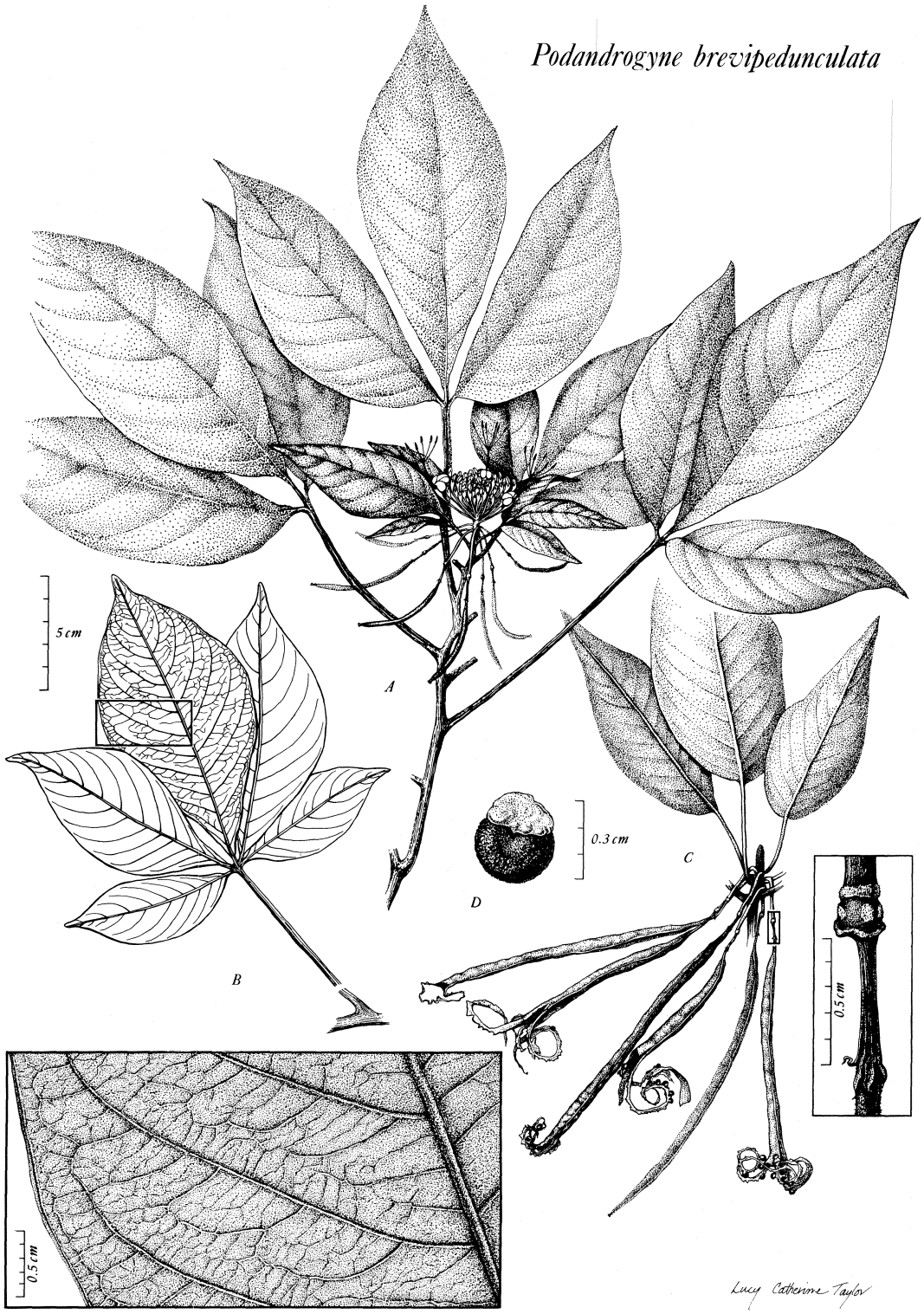
Podandrogyne brevipedunculata
5 cm
A
B
0.3 cm
C
D
0.5 cm
0.5 cm
Lucy Catherine Taylor

Plate 9

1.3-2 mm wide. Petals subequal in size and shape, spatulate and strongly unguiculate, 9.6-15.1 mm long, 2-3.6 mm wide, pink, scarlet or orange, drying to pale carmine or nearly white; blade oblong (adaxial petals) to oblong-elliptic or rarely oblong-ovate (abaxial pair), rounded, contracted to a slender claw 4.3-8.1 mm long. Nectary a somewhat fleshy gland, 1.2-2 mm high, 1.6-3 mm in diameter, broadly ellipsoid to broadly depressed-obovoid or transverse-oblongoid, obcordate at the apex, with 4 lobes, these alternating with the petals and shallowly concave on top. Stamens exserted, ascending to erect, the filaments 8-20 mm long, green; anthers 2.5-3.3 mm long; androgynophore 10-17 mm long, exserted ca. 6-12 mm beyond the reflexed petals. Ovary narrowly oblong-cylindric to cylindric, 8-17 mm long, (0.6) 0.9-1.5 mm in diameter, glabrous; stigma capitellate, inconspicuously bilobed, 1.2-2.1 mm in diameter, sessile or subsessile; gynophore 1-6.5 mm long; androgynophore 5-10 mm long. Mature fruits cylindric, very slender, more or less turgid and smooth when fresh, regularly torulose or only slightly so when dry, short-attenuate at apex, accuminate at base, 8-18 cm long, 3-5 mm thick; valves finely longitudinally reticulate-striate, yellow-green, glabrous; stigma 0.8-2.5 mm in diameter, subsessile, the style slender, 0.2-1.6 mm long; gynophore (2.5) 4-8 (10) mm long, glabrous; androgynophore (2) 4-12 mm long; pedicel 12-23 mm long, strongly deflexed. Seeds suborbicular to very broadly obovoid-reniform, usually strongly beveled, 2.8-3.6 mm long, 2.5-2.8 (3) mm wide, 1.6-2.2 mm thick, black, transverse-rugulose; radicular claw bearing at its tip a prominent fleshy white aril.

TYPE: *ECUADOR:* ESMERALDAS: Parroquia de Concepción, El Sajado on Río Santiago, clearing, 60 m; herb to 1 m high, flowers scarlet; 15 Dec. 1936 (fl, v y fr), *Mexia 8443* (HOLOTYPE: UC! ISOTYPES: BM! F! G! GB! GH! MO! NY! U! UC! US!: photograph of holotype, WIS!).

DISTRIBUTION: This species is known only from Ecuador, where it is common in the lowland (tropical) rain forest at elevations from 60-1280 m.

ADDITIONAL MATERIAL EXAMINED: *ECUADOR: sine loc.*, 1860 (y fr, fr), *Fraser s.n.* (BM, G; fragment of G sheet, WIS); 17 Nov. 1962 (fl, fr), *Gonzales 95* (MO). COTOPAXI: Río Guapara, ca. 20 km northwest of El Corazón, 21 June 1967 (fl, fr), *Sparre 17222* (S-2 sheets). EL ORO: vic. of Moro Moro, ca. 34 km west of Portovelo, 7 Oct. 1944 (fl, fr), *Camp E-610* (NY; fragment, WIS); Zaruma-Santa Rosa Road, between Piñas and El Placer, 6 May 1974 (fl, y fr), *Harling & Andersson 14342* (GB, WIS); along Sambotambo [Zambotambo] Trail and Río Moro Moro Headwaters, south to Buenaventura and Portovelo, 29 Aug. 1943 (fl, y fr), *Steyermark 54230* (F). ESMERALDAS: Santo Domingo-Quinidé Highway, km 170-175, 2 Sept. 1949 (fl, v y fr), *Acosta Solís 13663* (F); Parroquia de Concepción, El Sajado on Río Santiago, 15 Dec. 1936 (bud, fl, y fr, fr) *Mexia 8444* (BM, F, G, GB, GH, MO, NY, U, UC, US-TOPOTYPES). IMBABURA: Lita, 28 April 1949 (fl,) *Acosta Solís 12291* (F). LOS RÍOS: Cerro Mombe, Hacienda Clementina on Río Pita, 29 March 1939 (fl), *Asplund 5534* (S); Río Palenque Biological Station, Quevedo-Santo Domingo de los Colorados Highway, km 56, 4 Oct. 1972 (as "4/10/72") (fl, y fr), *Dodson & McMahon 4346* (QCA, Río Palenque Biological Station, SEL, US, WIS); same location, 3 Sept. 1972 (fr), *Dodson &*

Plate 10. *Podandrogyne brevipedunculata.* A, staminate flower dissection to show nectary (*Dodson & Thien 1166,* WIS); B, pistillate flower in abaxial view (*Mexia 8444,* F); C, series of buds and flower to show aestivation (*Sparre 18462,* S); D, lateral (left) and upper (right) petals (*Dodson & Thien 1166,* WIS); E, floral diagrams of staminate (above) and pistillate (below) flowers (bract, sepals and petals in outline, nectary tissue stippled, vestigial parts black.

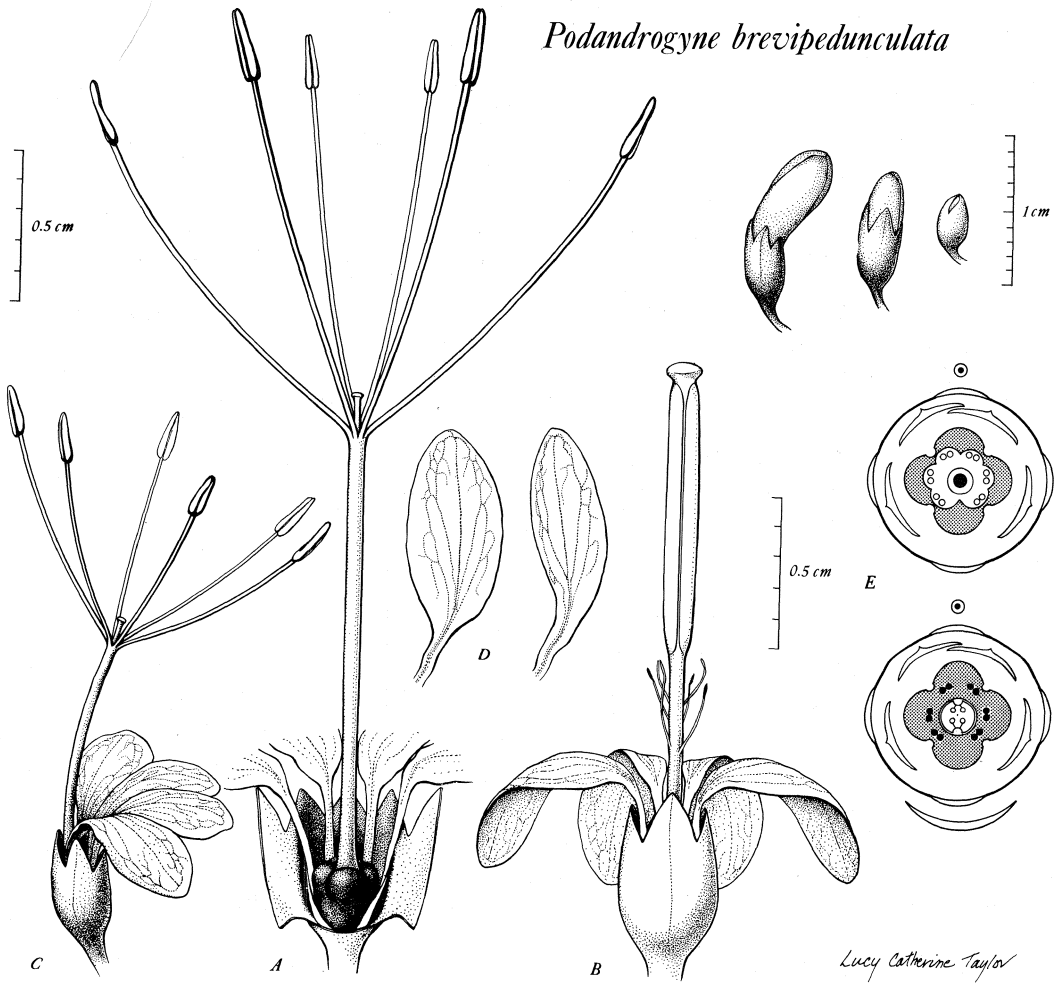

Plate 10

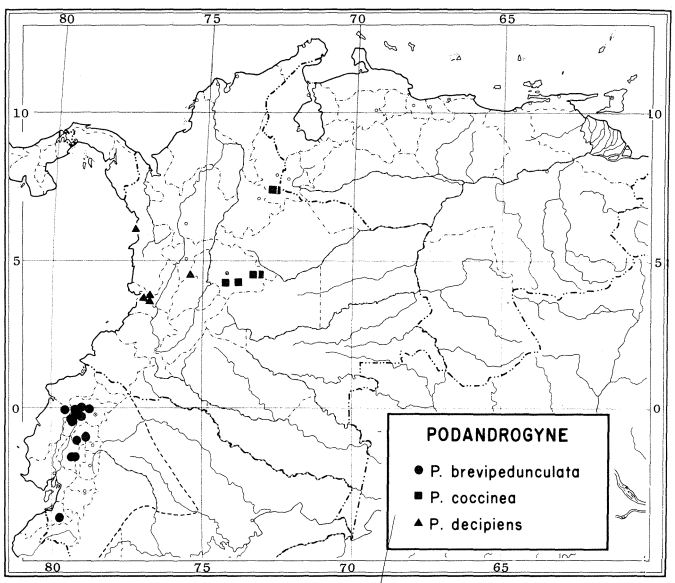

Figure 1. Map showing distributions of South American species of the *Podandrogyne coccinea* group.

McMahon 5055 (SEL); same location, 15 Dec. 1971 (ster), *Dodson & Vriese 4283* (SEL, US, WIS); same location, 2 Feb. 1974 (fl, y fr), *Gentry 9507* (MO, SEL, WIS); same location, 22 Feb. 1974 (fl, v y fr), *Gentry 10111* (MO, WIS-2 sheets). PICHINCHA: Mindo, 26 June [18]76 (fl), *André 3374* (fragment of K sheet, WIS); 20 km west of Santo Domingo de los Colorados, 1 Nov. 1961 (as "1.11.61") (fl, fr), *Cazalet & Pennington 5241* (NY, UC, US); Río Baba, 28 km south of Santo Domingo, 3 Nov. 1961 (fl), *Dodson & Thien 1166* (WIS-3 sheets); San Carlos de los Colorados, 30 Nov. 1952 (fl), *Fagerlind & Wibom 1626* (S-2 sheets); Santo Domingo de los Colorados, 1 Dec. 1952 (as "1/12 1952") (fl, v y fr), *Fagerlind & Wibom 1663* (S); vic. Santo Domingo de los Colorados, San Pablo, 14 March 1959 (fl), *Harling 4463* (S); (the following specimen was seen by Iltis: Río Toachi near Santo Domingo, 4 Aug. 1962 (fl), *Játiva & Epling 389*); Indios Colorados near San Miguel, 5 Aug. 1962 (fl, v y fr), *Játiva & Epling 409* (NY); vic. Santo Domingo, near El Esfuerzo, 15 Aug. 1965 (fr), *Knight 1116* (WIS-2 sheets); Río Pilatón, Sept. 1891 (y fr), *Sodiro 66* (B-2 sheets; photographs, GH, NY, US, WIS; fragment, WIS); Santo Domingo-Esmeraldas Road, Rancho Brahman, ca. 10 km northwest of Santo Domingo, 31 March 1967 (fl, v y fr), *Sparre 15236* (S); Aloag-Santo Domingo Road, Toachi, Río Pilatón-Río Toachi confluence, 9 Sept. 1967 (fl, fr), *Sparre 18462* (S).

Podandrogyne brevipedunculata has been known to botanists for more than a century, but customarily specimens have been determined as *Podandrogyne coccinea* (Bentham) Woodson *(Gynandropsis coccinea* Bentham). Actually *P. brevipedunculata* strongly resembles *P. decipiens* (Tr. & Pl.) Woodson, and its floral morphology indicates that the two are more closely related to each other than either is to *P. coccinea.* All three species occupy separate geographical areas (Figure 1).

Both *Podandrogyne brevipedunculata* and *P. decipiens* are often more succulent plants than *P. coccinea* and are essentially glabrous. Both have very short inflorescences, conspicuously small, highly connate sepals, clawed petals, and small, concentric disks. These features are well illustrated in Plates 9 and 10. *Podandrogyne decipiens* differs in its simple leaves, included androgynophores and short filaments, the latter barely or not at all exceeding the petals. In *P. brevipedunculata* the leaves are multifoliolate and the flowers smaller in some respects than those of *P. decipiens.* The filaments are exserted on the long, stiffly spreading-ascending androgynophore, which protrudes sideways from between the petal claws and results in a relatively zygomorphic flower. In their shape the mature fruits appear to be longer and more slenderly cylindric than those of *P. decipiens.*

ACKNOWLEDGMENT

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