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Four new species of *Cissus* L. (Vitaceae) from Ecuador, Bolivia and French Guyana

JULIO ANTONIO LOMBARDI

ABSTRACT

LOMBARDI, J. A. (1996). Four new species of *Cissus* L. (Vitaceae) from Ecuador, Bolivia and French Guyana. *Candollea* 51: 365-371. In English, English and French abstracts.

Cissus flavifolia Lombardi, *C. fusifolia* Lombardi and *C. rubropilosa* Lombardi, new species of *Vitaceae* from Ecuador and Bolivia, are described. Besides descriptions and illustrations, comments on their probable relationships and distributions are presented. *Cissus descoingsii* Lombardi is proposed for a species from French Guyana previously described but published with an invalid name.

RÉSUMÉ

LOMBARDI, J. A. (1996). Quatre nouvelles espèces du genre *Cissus* L. (Vitaceae) d'Équateur, de Bolivie et de Guyane française. *Candollea* 51: 365-371. En anglais, résumés anglais et français.

Cissus flavifolia Lombardi, *C. fusifolia* Lombardi et *C. rubropilosa* Lombardi, nouvelles espèces de *Vitaceae* originaires d'Équateur et de Bolivie, sont décrites. Outre les descriptions et les illustrations, les relations de ces espèces sont commentées ainsi que leur distribution. *Cissus descoingsii* Lombardi est proposé pour une espèce de Guyane française déjà décrite mais publiée avec un nom invalide.

KEY-WORDS: *Cissus* – VITACEAE – Ecuador – Bolivia – French Guyana.

In the *Vitaceae* the genus *Cissus* L. is the largest, with approximately 350 species (MABBERLEY, 1987). Since the worldwide work by PLANCHON (1887), only one species from Bolivia has been described (HERZOG, 1921) and none from Ecuador. While performing a taxonomic survey of the genus *Cissus* in South America, two new species were found in Ecuador: *Cissus flavifolia* Lombardi and *C. fusifolia* Lombardi, and a new one in Bolivia: *C. rubropilosa* Lombardi, presented here. *Cissus descoingsii* Lombardi is proposed for *Cissus guyanensis* Descoings, *nomen invalidum*, a species originally described from French Guyana.

1. *Cissus flavifolia* Lombardi, *spec. nova* (Fig. 1)

Type: Ecuador, Napo: Puerto Francisco de Orellana (Coca), ca. 40 km SE of the town (Auca oil field), 300 m, 0°40'S, 76°52'W, 4 Nov 1976 (fl, fr), Balslev & Madsen 10590 (holotype, F; isotypes, S, U, US).

Frutex scandens, caule alato-anguloso, piloso. A Cisso nobili Kuhlmann et C. rubropilosa Lombardi simulans, sed foliis ternatis praeofoliantibus conduplicatis, siccando flavescentibus,

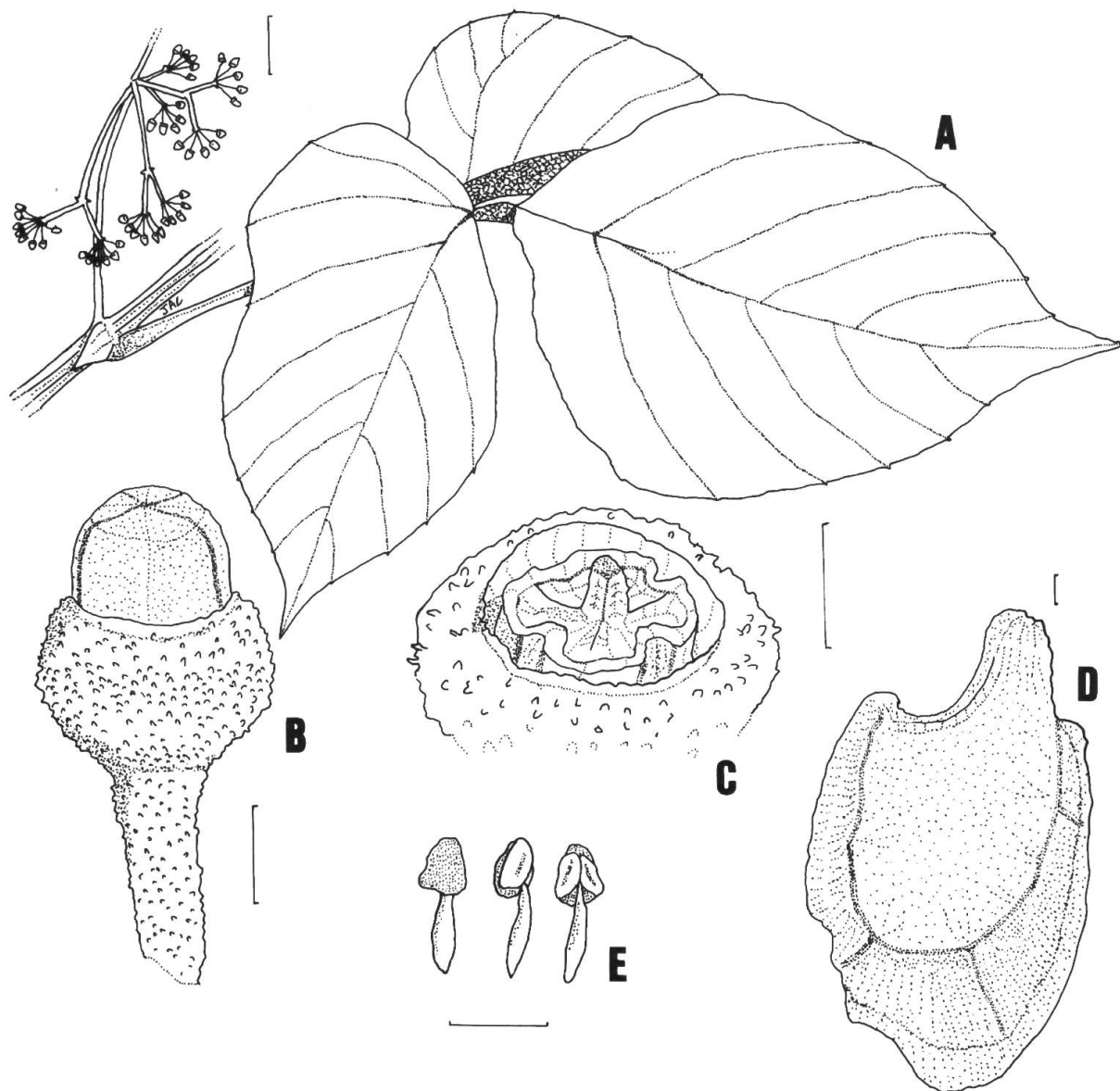


Fig. 1. – *Cissus flavifolia* Lombardi. **A.** reproductive branch and inflorescence; **B.** flower bud; **C.** nectariferous bud and pistil; **D.** seed; **E.** stamens, ventral, lateral and dorsal views. **A-C, E** from Balslev & Madsen 10590; **D** from Gentry & Jaramillo 41389. Scales: = 1 cm, = 1 mm

dorso nervis prominentibus, foliolis acuminatis, calyce urceolato, fructo 2.8 cm longo, 1.8 cm lato, epicarpo incrassato, seminibus subretangularibus circa 1.7 cm longa, 1.0 cm latis, ab eadem differt.

Liana, stems puberulent, winged to angular. Trichomes multicellular, not branched and no secretory ones mixed with secretory trichomes. Tendrils bifurcate, puberulent, with adhesive discs; scales ca. 0.2 cm long, triangular, puberulent, ciliate. Stipules 0.7-0.9 cm long, 0.5-0.7 cm wide, falcate, reflected, coriaceous, puberulent on both sides, ciliate, persistent. Petioles 1.4-13.5 cm long, canaliculate to winged, puberulent. Leaves blades ternately compound; central petioles 0.3-2.7 long, lateral nulls-0.8 cm long, puberulent; blades of central leaflets elliptic to ovate, 4.4-20.6 cm long, 3.3-14.8 cm wide, blades of lateral leaflets rhombic to elliptic, 3.2-17.7 cm long, 2.4-11.1 cm wide, central and lateral leaflets herbaceous, puberulent on both sides chiefly along the veins to canescent on abaxial side, veins prominent on abaxial side, conduplicate, immature drying yellowish and mature drying ochre, the base cuneate to rounded, the apex acuminate, the margin denticulate. Inflorescence flat-topped, puberulent; the peduncle 3.6-4.3 cm long; the bracts triangular, 0.3 cm long, diaphanous, puberulent, ciliate. Flowers greenish; pedicels 0.3-0.4 cm long, papillose, puberulent; calyx truncate, 0.1 cm long, 0.25 cm diameter, urceolate, fleshy, papillose, puberulent; corolla tetramerous, 0.1 cm long, 0.2 cm diameter, petals coherent, caducous, papillose, puberulent; stamens 4, connective deltate, granular, drying dark brown, anther dehiscence extrorse; disc apex concave, with 4 radials convergent ribs; the style conic, the stigma obscure. Fruit purple, botuliform, with sparse lenticels, thick-skinned, 2.8 cm long, 1.8 cm wide. Seed 1, subrectangular, 1.7 cm long, 1 cm wide, the hilum acute, the raphe prominent and transversely grooved, the sides smooth.

This species is named after its immature leaves which are yellowish in the exsiccatae.

C. flavifolia differs from other species with ternate leaves in winged to angular stems, characteristic leaves with prominent veins, a calyx urceolate, a big thick-skinned fruit and large seeds.

It appears most closely related to big fruited species as *C. nobilis* Kuhlmann, differing in being densely hairy and in the calyx urceolate, and *C. trigona* Willd. ex Schult. & Schult. f., which can be easily distinguished from it by obovate leaflets and a calyx not urceolate, all glabrous. *C. flavifolia* is also similar in the leaves aspect to *C. rubropilosa* Lombardi, differing in a bigger and thick-skinned fruit.

Paratypes. ECUADOR, Napo: 9-11 km S of Coca, on road to Auca oil field, 5 Nov 1974 (fl, fr), *Gentry 12490* (NY).

PERU, Huánuco: Prov. Pachitea, Dtto. Honoria, Bosque Nacional de Iparia, a lo largo del Río Pachitea, cerca del campamento Miel de Abeja (1 km arriba del pueblo de Tournavista a unos 20 km arriba de la confluencia con el Río Ucayali), 300-400 m, 29 Apr 1986 (fr), *Schunke-Vigo 2560* (F). **Loreto:** Prov. Requena, Río Tapiche, tributary of Río Ucaiali, ca. 1 hour by 40 H.P. motor above Requena, 8 Dec 1977 (fl), *Gentry & al. 21258* (F); Maynas, San Antonio, Río Itaya, 4°10'S, 73°20'W, 150 m, 13 Dec 1982 (fl, fr), *Vásquez & Jaramillo 3566* (F). **Ucayali:** Bosque Nacional von Humboldt, km 86 Pucallpa-Tingo María road, 300 m, 26 Mar 1977 (fr), *Gentry & al. 18687* (F); Prov. Coronel Portillo, Bosque Nacional von Humboldt, km 86 Pucallpa-Tingo María road, 270 m, 8°40'S, 75°00'W, 9 Feb 1981 (fr), *Gentry & al. 31148* (F); km 1 of carretera Marginal (in construction), S from km 86 of Pucallpa-Tingo María road, 270m, 8°43'S, 75°01'W, 1 Jun 1983 (fr), *Gentry & Jaramillo 41389* (F).

2. *Cissus rubropilosa* Lombardi, spec. nova

Type: Bolivia, Beni: Prov. Cercado, Casarabe, 51 km E of Trinidad on road to Ascensión de Guarayos, 14°50'S, 63°40'W, ca. 200 m, 14 Dec 1988 (fl), *Nee 37181* (holotype, NY).

Frutex scandens, caule alato, piloso, pilis longis, simplicibus, rufescentibus, foliis ternatis, senescentibus dorso argenteis. A Cisso flavifolia Lombardi simulans, sed fructibus 1.1-1.4 cm longis, 0.9-1.1 cm latis, epicarpo tenue differt.

Liana, young stems winged to angular, old stems with suberous and tortuous wings and sparse lenticels, sparse villous. Trichomes reddish, multicellular, and not branched, not secretory ones mixed with secretory trichomes. Tendrils bifurcate, with adhesive discs, sparse pubescent; scales ca. 0.2 cm long, triangular, pubescent, ciliate. Stipules 0.4-0.65 cm long, 0.2 cm wide, falcate, herbaceous, the base gibbous and pilose, ciliate, caducous. Petioles 1.3-5.5 cm long, canaliculate, sparse tomentose, and with sparse lenticels. Leaves blades ternately compound; central petiolules 0.1-0.5 cm long, lateral nulls-0.3 cm long, tomentose; blades of central leaflets elliptic, 6.1-14.7 cm long, 2.1-6.4 cm wide, blades of lateral leaflets subovate, 2.7-7.4 cm long, 1.45-2.7 cm wide, central and lateral leaflets herbaceous, sparse villous on the adaxial side, tomentose on the abaxial side, on both sides chiefly along the veins, getting silvery with time on the adaxial side, the base cuneate, the apex acute, the margin denticulate. Inflorescence flat-topped, tomentose; the peduncle 0.55-1 cm long; the bracts triangular, 0.2 cm long, sparse pubescent, ciliate. Flowers greenish; pedicels 0.15-0.25 cm long, sparse pubescent and pubescent-glandular; calyx truncate, 0.1 cm long, 0.2 cm diameter, fleshy, papillose in the apex, glabrous; corolla tetramerous, 0.1-0.2 cm long, 0.2 cm diameter, petals coherent, caducous, papillose in the apex, glabrous; stamens 4, connective deltate, granular, drying dark brown, anther dehiscence latrorse; disc apex concave and elevated around the filaments; the style conic, the stigma not apparent. Fruit purple, subspherical, with sparse lenticels, 1.1-1.4 cm long, 0.9-1.1 cm wide. Seed 1, sub-square, 0.9-1 cm long, 0.7-0.8 cm wide, the hilum acute, the apex emarginate, the raphe evident and transversely grooved, the sides slightly rugose.

This species is apparently restricted to low lands in Peru and Bolivia in borders of forests and perturbed areas.

Cissus rubropilosa differs from other South American ternate species in long and reddish trichomes, winged stems and leaves getting silvery with time on the adaxial side. Regarding this last aspect, *C. rubropilosa* is similar to *C. flavifolia* Lombardi, but differs in thin fruit epicarpe and smaller seeds.

Paratypes. PERU, **Madre de Dios:** Prov. Tambopata, Lago Tres Chimbadas, ca. 65-70 river km SSW of Puerto Maldonado, ca. 10-15 air km NW effluence Río La Torre (Río D'Orbigny)/Río Tambopata, 12°49'S, 69°17'W, ca. 260 m, 7 Jul 1980 (fr), *Barbour 5548* (F); *ibidem*, 12 Jun 1980 (fr), *Barbour 5698* (F); Parque Nacional del Manu, Estación Cocha Cashu, lake margin, 11°52'S, 71°22'W, 350 m, 12 Oct 1991 (fr), *Burnham 757* (US).

BOLIVIA, Beni: Yacumá, Estación Biológica Beni, 300 m del Río Curiraba, 250 m, 11 Sept 1987 (fr), *Moraes R. 888* (BHCB, LPB).

3. *Cissus fusifolia* Lombardi, *spec. nova* (Fig. 2).

Type: Ecuador, Pichincha: Santo Domingo bypass approximately 3 km S of Santo Domingo, 530 m, 8 Apr 1980 (fl), *Dodson & Gentry 10358* (holotype, F).

Frutex scandens, pilosus, pilis malpighiaceis, foliis simplicibus, foliis in ramis fertilibus ellipticis, et brevi petiolatis. A Cisso biformifolia Standl. simulans, sed foliis in ramis vegetatilibus ellipticis et brevi petiolatis, fructibus botuliformibus, circa 1.5 cm longis, 1 cm latis, seminibus 1,1 cm longis, 0.5 cm latis differt.

Liana, stems puberulent, with sparse lenticels, teretes. Trichomes malpighiaceous, appressed. Tendrils not branched, glabrous, adhesive discs not seen; scales not seen. Stipules 0.3-0.5 cm long, 0.2-0.3 cm wide, deltate, fleshy, glabrous, the apex falcate, ciliate, caducous. Petioles 0.4-2.75 cm long, canaliculate, tomentose to glabrous. Leaves blades simple and entire, elliptic, 5.2-19.1 cm long, 2.25-8.6 cm wide, chartaceous, on adaxial side glabrous, on abaxial side

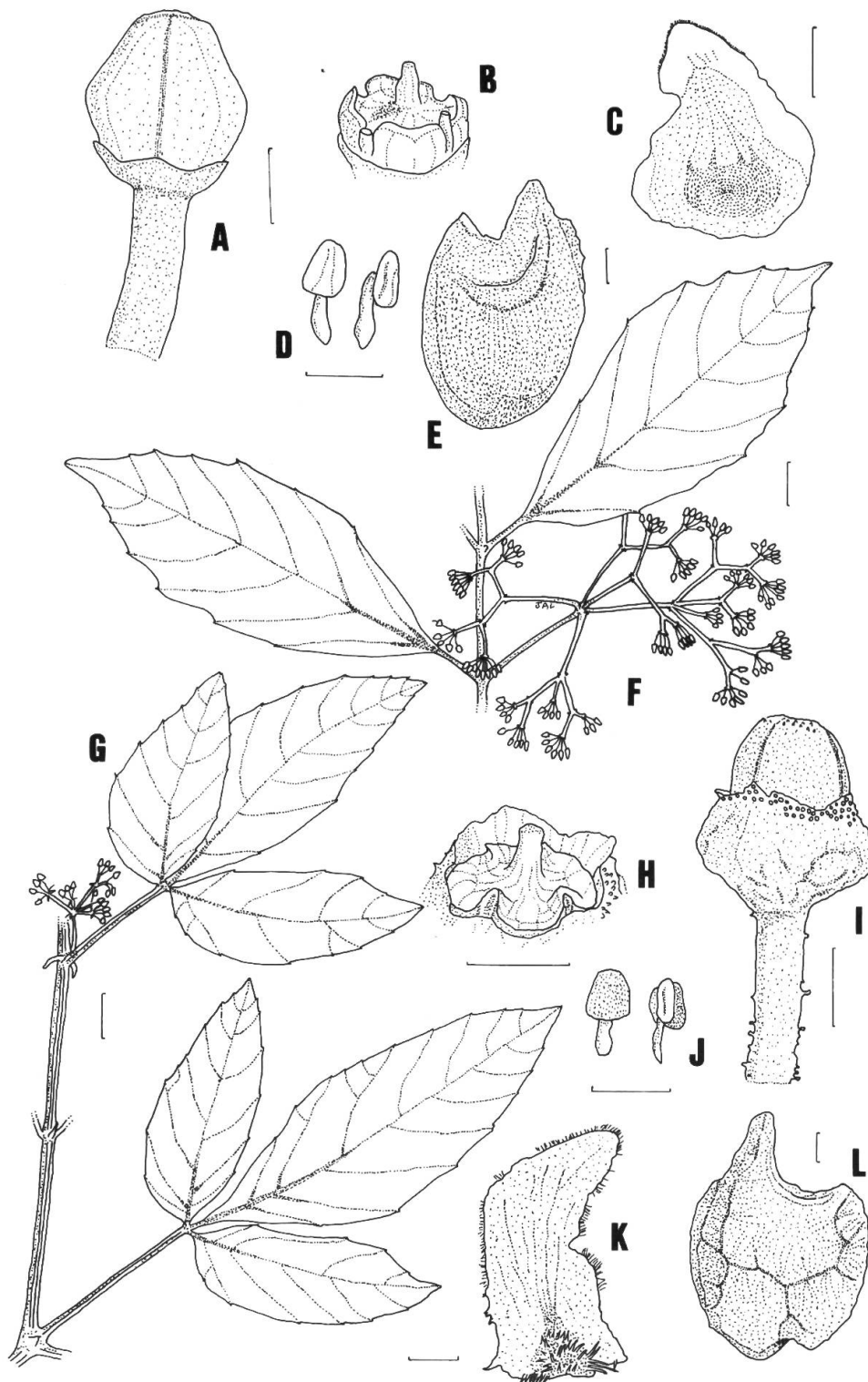


Fig. 2. – *Cissus fusifolia* Lombardi. A. flower bud; B. nectariferous bud and pistil; C. stipule; D. stamens, ventral and lateral views; E. seed; F. reproductive branch and inflorescence. *Cissus rubropilosa* Lombardi. G. reproductive branch and inflorescence; H. nectariferous disc and pistil; I. flower bud; J. stamens, ventral and lateral views; K. stipule; L. seed. A-B, D and F from Dodson & Gentry 10358; C from Fagerlind & Wibom 2480; E from Schunke-Vigo 2589; G-K from Nee 37181; L from Barbour 5548. Scales: = 1 cm, = 1 mm

tomentose, the base cuneate, the apex acuminate to caudate, the margin denticulate. Inflorescence flat-topped, tomentose to glabrous; the peduncle 0.9-2.35 cm long; the bracts deltate, 0.1 cm long, ciliate. Flowers greenish; pedicels 0.1-0.2 cm long, sericeous; calyx truncate, 0.05-0.1 cm long, 0.1-0.15 cm diameter, fleshy, glabrous; corolla tetramerous, 0.1-0.2 cm long, 0.1-0.2 cm diameter, petals coherent, caducous, glabrous; stamens 4, the base of filaments firmly included on the disc side, connective cuneiform, granular, drying clear yellow, anther dehiscence latrorse; disc side concave, apex convex; the style terete, the stigma obscure. Fruit purple, botuliform, smooth, 1.5 cm long, 1.0 cm wide. Seed 1, botuliform, 1.1 cm long, 0.5 cm wide, the hilum acute, the ventral raphe prominent, the dorsal raphe obscure, the sides slightly rugose.

This species is known from Colombia, Ecuador and Peru, and was named after its elliptic leaves.

C. fusifolia differs from other species with simple leaves in its short petioles, malpighiaceus hairs and a larger seed. The leaves of *C. fusifolia* are similar to reproductive shoot leaves of *C. biformifolia* Standl. from Central America, but that one is heterophyllous, with elliptic leaves in the reproductive shoots and cordate leaves in the vegetative shoots, and so easily distinguishable from *C. fusifolia*.

Paratypes. **COLOMBIA, Nariño:** municipio de La Espriella, hasta 5 km al W del Estación de CONIF (ca. 45 km al SE de Tumaco), 50-100 m, 6 Jun 1986 (fl, fr), *León et al. 1374* (U). **Valle:** costa del Pacífico, Río Yurumanguí, 5-50 m, 28 Jan-10 Feb 1944 (fl), *Cuatrecasas 15956* (F); costa del Pacífico, entre El Aguacate y Quebrada de la Yuca, 10-40 m, 8 Feb 1944 (fl), *Cuatrecasas 16095* (F).

ECUADOR, Cotopaxi: Río Guapara, ca. 20 km NW de El Corazon, ca. 250 m, 23 Jun 1967 (fl), *Sparre 17291* (S). **Esmeraldas:** Timbre, 25 Feb 1953 (fl), *Fagerlind & Wibom 2480* (S); El Timbre, near Esmeraldas, clearing between banana grove and virgin forest, 70-90 m, 6 Aug 1962 (fl, fr), *Játiva & Epling 427* (NY, S, US). **Los Ríos:** Río Palenque Biological Station, km 56 Quevedo-Santo Domingo road, 150-220m, 6 Mar 1974 (fl), *Dodson 5434* (US); Río Palenque Biological Station, km 56 Quevedo-Santo Domingo road, 150-220m, 6 Sept 1972 (fr), *Dodson & McMahon 5118* (US).

PERU, Huanuco: Prov. Pachitea, Dtto. Honoria, Bosque Nacional de Iparía, carretera Miel de Abeja, km 3, 300-400 m, 21 May 1968 (fr), *Schunke-Vigo 2589* (F, US). **Loreto:** Prov. Maynas, Río Güeppi, tributary of Río Putumayo, northern most tip of Peru on border with Ecuador, ca. 200 m, river-side between mouth and Puerto Peru (border post 8 km upriver), 13 May 1978 (fr), *Gentry & al. 21774* (F).

4. *Cissus descoingsii* Lombardi, *spec. nova*

≡ *Cissus guyanensis* Descoings in Bull. Soc. Bot. France, Lettres Bot. 138: 249. 1991, *nom. inval.*

Type: French Guyana. Montagne de Kaw, 13 May 1985 (fl), *Granville 7277* (holotype: U!; isotypes: B!, CAY, P, NY).

Latin diagnosis in DESCOINGS (1991: 249).

Cissus guyanensis Descoings, *nomen invalidum*, was described by DESCOINGS (1991) with a Latin diagnosis but without the specification of the Herbarium in which the type is conserved, in violation of the Article 37.5 of the International Code of Botanical Nomenclature (GREUTER & al., 1994). This name is therefore not validly published, and a new name is proposed.

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