

# NOTES ON CENTRAL AND SOUTH AMERICAN *CISSUS* (VITACEAE)<sup>1</sup>

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## ABSTRACT

*Cissus allenii* Croat and *Cissus neei* Croat are described as new. *Cissus allenii* differs from *C. microcarpa* Vahl, to which it may be most closely related, in being puberulent whereas *C. microcarpa* has a combination of crisped-villous and appressed T-shaped pubescence. *Cissus neei* is distinguished from other unifoliolate species in Panama by its thick glabrous leaves, greenish flowers, and glabrous inflorescence. It is perhaps most closely related to *Cissus brevipes* Morton & Standley, but that species differs in having thinner, conspicuously toothed leaves. The following new distributional reports are made: *Cissus brevipes* in Panama, *C. ulmifolia* (Baker) Planchon in Ecuador and Panama, *C. martiniana* Woodson & Seibert in Mexico, *C. biformifolia* Standley in Colombia, and *C. pseudosicyoides* Croat in Ecuador.

Since the Vitaceae was completed for the *Flora of Panama* (Elias, 1968), several species have been found to be new to the flora. One of these was the subject of an earlier report (Croat, 1973). This report concerns four additional species new to Panama, two being newly described. Thus five additional species have been collected in Panama since the treatment for the Vitaceae was completed.

### ***Cissus allenii* Croat, sp. nov.**

Frutex scandens; folius trifoliolatus; lamina ovata-elliptica, 7–11 cm longa, 2.5–5.5 cm lata. Flores pallide virelli, circa 2 mm longi. Fructus immaturi, obovati, circa 4 mm longi, lenticellis.

Slender *lianas*; stems puberulous when young, weakly viscidulous, glabrescent, terete, becoming sparsely lenticellate. *Leaves* trifoliolate; leaflets gradually acuminate at the apex, sharply serrate throughout most of their length, the upper surface glabrous except hirtellous on the midrib, the lower surface hirtellous on the principal veins; terminal leaflet oblong-elliptic, obtuse to acute at the base, 7.5–12 cm long, 3.5–5.0 cm wide, the major lateral veins 6–8 pairs, gradually arcuate to the margin, the reticulate venation obscure; lateral leaflets similar except slightly shorter, inequilateral at the base, acute on the inner margin, obtuse or rounded on the outer margin, their petiolules 4–8 mm long. *Inflorescences* ca. 15 cm long, the branches and pedicels puberulent; pedicels ca. 3 mm long. *Flowers* with the calyces bowl shaped, 2.0–2.5 mm wide, glandular; petals narrowly deltoid, 1.5 mm wide, glabrous. *Fruits* obovoid, ca. 4 mm long (immature), conspicuously lenticellate.

**TYPE:** PANAMA. PROVINCE OF COCLÉ: Foothills of Cerro Pilón near El Valle, ca. 900 m, *Duke & Correa 14714* (MO-1910853, holotype).

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Other collections seen: COSTA RICA. PUNTARENAS PROVINCE: Road to Golfito Dairy Pastures, fruits, 11 Nov. 1952, *Allen 6625* (US).

*Cissus allenii* is apparently not closely related to other Central American species in the genus but may be confused with *Cissus microcarpa* Vahl. That species differs from *C. allenii* in having thinner, more pubescent leaves with a mixture of crisped-villous trichomes and flattened T-shaped trichomes on the lower veins of the leaflets and also on the branches of the inflorescence and pedicels. In contrast *Cissus allenii* is sparsely puberulent on the lower veins and on the inflorescence parts.

The species flowers and fruits in the late rainy season. Immature fruits are known from October and November.

The species is known from Costa Rica and Panama. It is named in honor of Paul Allen who made the first collection.

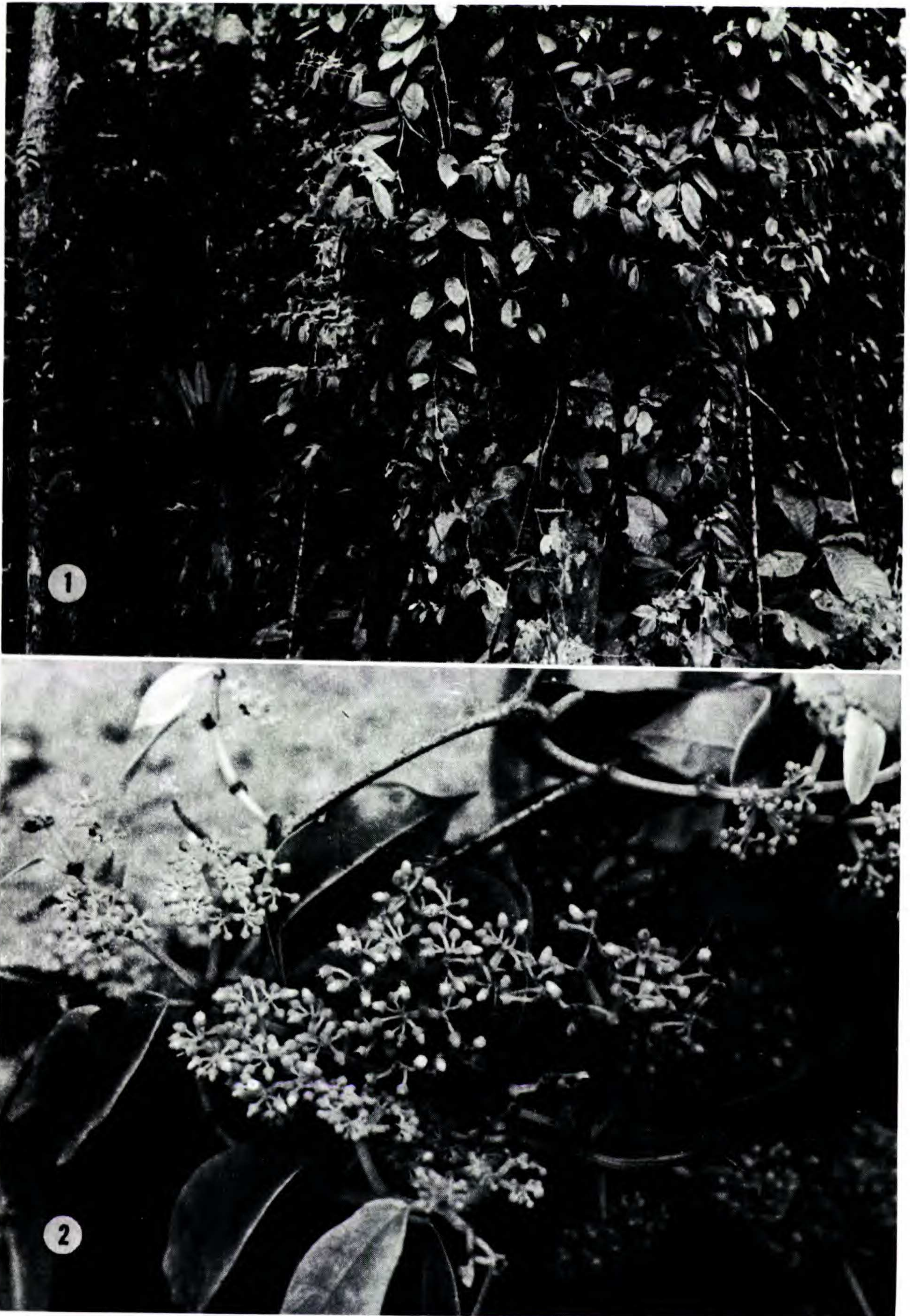
### ***Cissus neei* Croat, sp. nov.—FIG. 1.**

Frutex scandens, glaber; caules foliaque succulenta. Foliis sessile aut petiolo ad 2 cm longo; lamina oblonga-elliptica, 4–14 cm longa, 1.5–6 cm lata. Pedunculi 1–2 cm longi; flores virelli, circa 3 mm longi; petala ad 2.2 mm longa. Fructus purpureus, circa 1.1 cm latus.

Herbaceous or suffrutescent *vines*, essentially glabrous throughout; older stems with many dark, round lenticels; at least the younger leaves, stems and inflorescence parts usually drying black. *Leaves* thick, somewhat fleshy, drying stiff, subcoriaceous, sessile or with petioles narrowly canaliculate, to 1.5 (rarely to 2) cm long; blades oblong-elliptic, abruptly acuminate at the apex, acute to obtuse at the base, 4–14 cm long, 1.5–6 cm wide, pinnately veined, entire, thick and  $\pm$  succulent when fresh, drying subcoriaceous, the lowermost pair of veins continuing up along the margin to as much as the lower third of the blade, the remaining 3–5 principal pairs of lateral veins arcuate-ascending, weakly sunken on the upper surface. *Inflorescences* of umbelliform, leaf-opposed cymes, to ca. 4 cm diam.; peduncles 1–2 cm long, the secondary peduncles 3–10 mm long; pedicels ca. 2 mm long, bracteolate at base; bracts deltoid, weakly ciliolate on the margins. *Flowers* greenish, ca. 3 mm long; calyx cup shaped in bud, more broadly flared at anthesis, entire or weakly and bluntly 4-lobed; petals narrowly ovate, acute at the apex, cucullate within, ca. 2.2 mm long; stamens 4, to 1.2 mm long, the filaments glabrous, the anthers oblong, ca. 0.5 mm long; disc 4-lobed, saucer shaped; style 4-sided, reaching the lower edge of the anthers. *Fruits* globose, purple, to 1.1 cm diam.

**TYPE:** PANAMA. PROVINCE OF PANAMÁ: El Llano-Cartí Road, 12 km from PanAmerican Highway, vicinity of Gorgas Laboratory Mosquito Control Project #1, 360–400 m, flowers, 18 July 1974, *Croat 25084*. (MO-2276841, holotype; COL, F, K, NY, PMA, S, US, VEN, isotypes).

Other collections seen: PANAMA, PROVINCE OF PANAMÁ: El Llano-Cartí Road, vic. of Gorgas Laboratory Mosquito Control Project site at km 12, *Croat 26042* (MO); at 5 km, ca. 300 m, *Nee 7923* (MO, PMA, US); at 18 km, *Mori et al. 4585* (F, MO, PMA, TEX); at km 11–12, *Mori et al. 6895* (CAS, MO, NY, PMA, VEN).



FIGURES 1-2. *Cissus neei* Croat.—1. Habit ( $\times 1/20$ ).—2. Close-up of leaves and flowers ( $\times 1/5$ ).

The species is known only from premontane wet forest on the El Llano-Cartí Road. It is probably more widespread in Panama and should be expected to be found especially on the wetter Caribbean slope and in Darién Province.

Flowering is known from June to August. Fruits are known from November but fruits probably mature from September to November.

A second species of *Cissus* new to Panama and North America is *C. ulmifolia* (Baker) Planchon, known previously from Peru. The species was collected by Mori and Kallunki (1857) on the El Llano-Cartí Road, 9.6 km from the Pan-American Highway. The species was also recently collected in Ecuador by Gentry (12490) in the Department of Napo, 9–11 km S of Coca on the road to the Auca oil field. This is the first collection of the species from Ecuador known to me.

Of less interest is a report for *Cissus martiniana* Woodson & Seibert for Mexico. The species was collected in 1913 by Purpus (7462) in Chiapas at Cerro del Boquerón and more recently in Chiapas by Breedlove (7462) from the north-west slope of Zontehuitz in the Municipio of San Cristóbal de las Casas. The earlier collection was apparently overlooked in the *Flora of Panama* treatment as its range was reported as Guatemala to Panama.

*Cissus biformifolia* Standley is here reported for the first time for Colombia. The species was collected in Poponte, in the Magdalena River by Cyril Allen (797) in 1924, but the collection has previously been undetermined.

A third species of *Cissus* new to Panama is *C. brevipes* Morton & Standley collected recently by Gentry (6899) on the hills above El Valle in Coclé Province at ca. 1000 m. It was previously known only from Costa Rica. Allen 182, collected near El Valle in 1940 and despite bearing the name *C. brevipes*, was included under *C. sicyoides* in the *Flora of Panama* treatment.

*Cissus pseudosicyoides* Croat known previously to range from Costa Rica to Colombia is now also known from Ecuador based on Gentry 12549. The collection was made in the Department of Napo near the turn-off from the Coca-Los Aucas Road at km 4 at 250 m.

In order to facilitate identification of Panamanian material of *Cissus* a new key for Panama is presented here.

#### KEY TO *CISSUS* IN PANAMA

- a. Leaves 3-foliolate.
  - b. Stems 4-sided and prominently winged.
    - c. Fruits ca. 3 cm diam.; petioles usually more than 7 cm long ..... *C. ulmifolia* (Baker) Planchon
    - cc. Fruits less than 1 cm diam.; petioles less than 6 cm long ..... *C. erosa* L. Rich.
  - bb. Stems terete or nearly so, not prominently winged.
    - d. Mature peduncles (6–)7–12 cm long; stems 4-sided, often winged; fruits 4–6 mm diam. .... *C. erosa* L. Rich.
    - dd. Mature peduncles 1–3 cm long; stems terete to subangulate, wingless; fruits 6–10 mm diam. (mature fruits not seen for *C. allenii*).
      - e. Terminal leaflets with a petiole 0.5–2.0 cm long; leaves mucronate-serrate, mature leaves 4–10 cm long.
      - f. Pedicels appressed-pubescent with flattened T-shaped trichomes; pubescence of veins of lower leaflet surfaces (when present) of

- crisped-villous trichomes and/or appressed T-shaped trichomes  
 ----- *C. microcarpa* Vahl
- ff. Pedicels puberulent; veins of the lower leaflet surface puberulent  
 ----- *C. allenii* Croat
- ee. Terminal leaflets sessile; leaves sparsely denticulate, mature leaves 2–4  
 cm long; flowers pale green; fruits ca. 1 cm diam. .... *C. martiniana* Woods.
- aa. Leaves simple.
- g. Pedicels glabrous; leaf blades monomorphic, the larger leaves at most rounded or  
 truncate at the base, glabrous or villous, lacking T-shaped or puberulent trichomes.
- h. Blades thin, often pubescent,  $\pm$  ovate, rounded to truncate and with 2 or 3  
 pairs of lateral veins arising at or near the base, the margin serrate -----  
 ----- *C. sicyoides* L.
- hh. Blades thick, glabrous, oblong-elliptic, acute and with 1 pair of lateral veins  
 at the base, the margin entire ----- *C. neei* Croat
- gg. Pedicels definitely pubescent; leaf blades often dimorphic, the larger blades ovate-  
 cordate, frequently with puberulent T-shaped trichomes.
- i. Flowers red, the buds mostly 3–4 mm long; fruits 8–10 mm wide -----  
 ----- *C. biformifolia* Standley
- ii. Flowers greenish, cream or white, the buds mostly 1.5–2 mm long; fruits to  
 6 mm wide.
- j. Petioles more than half as long as the blade; pedicels in part puberulent  
 with stiff, erect, short trichomes ----- *C. pseudosicyoides* Croat
- jj. Petioles less than  $\frac{1}{4}$  as long as the blade; pedicels with flattened T-shaped  
 trichomes, never puberulent as above ----- *C. brevipes* Morton & Standley

## LITERATURE CITED

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