

Oryctanthus callicarpus*, a replacement for Mesoamerican *O. occidentalis* (Loranthaceae).*Job Kuijt**649 Lost Lake Road, Victoria, BC V9B6E3, Canada
jobkuijt@uvic.ca

and

Jerry and Linda HarrisonPTY 9617, 2250 NW 114th Ave., Unit 1P, Miami, FL 33172, USA**ABSTRACT**

A new species name, *Oryctanthus callicarpus*, is proposed to replace *O. occidentalis* subsp. *continentalis*. The species is characterized by complexly-banded fruits having strongly truncate apices, in contrast to the Jamaican *O. occidentalis*, that has blackish purple fruits with rounded apices. Published on-line www.phytologia.org *Phytologia* 97(1): 51-54 (Jan 2, 2015). ISSN 030319430.

KEY WORDS: *Oryctanthus callicarpus*, *Oryctanthus occidentalis*, Mesoamerica, Loranthaceae, replacement.

The name *Oryctanthus occidentalis* (L.) Eichler has traditionally been applied to two separate regions, the type locality (Jamaica; see Kuijt & Zanoni 2013 for corrected typification) and the continental area from Mesoamerica to Peru (Kuijt 1976). It has been recognized for some time that the plants of the two areas might well show differences sufficiently significant to warrant subspecific separation. This separation was more recently formalized in the recognition of *O. occidentalis* subsp. *continentalis* Kuijt for the continental plants (Kuijt 1992). The contrast in fruit color was the major reason for that proposal, the Jamaican plants having blackish purple fruits (Fawcett & Rendle 1914) and those of the new subspecies “green or green and yellow (red)” fruits (Kuijt 1976). In the latter paper it was noted that the Andean area showed more structural variation than the other continental areas. A particularly striking element of variation, not fully explored at the time, is the variation in the number of functional pollen sacs on the stamens, between collections and even within some flowers.

Recent field experience in the Cerro Jefe area of Panama, combined with a partial review of herbarium material from that country, has demonstrated the inadequacy of previous solutions. Extending our studies into the Costa Rican and variable South American populations, unfortunately, is not possible at this time. Nevertheless, our findings especially with regards to the unique, striking multicolored fruits in Panama, features not normally surviving in herbarium material, warrant the description of a new species. Two previous publications have already hinted at this color variation (Croat 1978, Kuijt 1976). We may speculate that a detailed, South American analysis of this, the most complex species in the genus, may lead to further changes, but it will likely continue to restrict the application of the name *O. occidentalis* to Jamaica. The illustration of the species for the Flora of Ecuador (Kuijt 1986: 123), for example, shows a fruit type different from both Jamaican and Panamanian fruits.

***Oryctanthus callicarpus* Kuijt, *nom. nov.* -- *Oryctanthus occidentalis* (L.) Eichler subsp. *continentalis* Kuijt (1972) 181, *syn. nov.* -- Type: Costa Rica. Puntarenas, Palmar Sur, on *Citrus* sp., *J. Kuijt* 2570 (holotype CR; isotype UBC).**

Diagnosis. *Oryctanthus callicarpus*, uniquely in Loranthaceae, has fruits with a variable number of transverse color bands, being barrel-shaped with abruptly truncate apices. Fruits are densely crowded on the infructescences.

Description. Dark green, percurrent, glabrous plants with epicortical roots at the base. Internodes terete, grayish brown, with innumerable, minute, light brown lenticels, commonly 4--8 cm long. Leaf blade to 12(15) cm long and 9(13) cm wide, broadly ovate to elliptical, sometimes nearly orbicular, base obtuse to nearly truncate or slightly acute, apex rounded, leaf margin callused, gray; venation pinnate or nearly so, with 3--5 prominent veins, these often purplish red below; petiole 4--5 mm long. Inflorescences axillary, the primary one often with two or more secondary ones; length of inflorescence 1--11 cm long, peduncle 8--15 mm long, terete, followed by 20 or more decussate pairs of flowers, one flower in each axil of an inconspicuous green, scale-like bract, bracteoles minute, black, scarcely reaching the margin of the floral cup; floriferous axis dark green between floral series, glabrous and shiny. Flowers partly sunken in rachis, deep reddish-purple, up to 120 per inflorescence, commonly ca. 4 cm long with about 60 flowers (for floral details, see Kuijt, 1976). Fruits barrel-shaped, 3 x 3 mm, densely crowded together in each series, variably colored but often with multicolored rings, the base reddish, and followed by rings of dark green and yellow, apex truncate, nectary area green; some plants lacking red either completely or having red only as the distal ring. Sea level to ca. 1000 m. Fig. 1.

Representative specimens examined. COSTA RICA. **Cartago:** Murray's Finca, Cachí, on *Psidium guajava* and others, 11 Aug 1962, *Kuijt 2581* (UBC); Turrialba grounds, on *Theobroma cacao*, *Aubroma augusta*, *Davyalis hebecarpa*, and *Phoradendron piperoides*, 24 Jul 1962, *Kuijt 2498* (UBC); East of Tres Ríos, west of Los Altos, near railroad bridge, 200 yards up the creek from 1st bridge, 13 Jun 1962, *Kuijt 2455* (UBC); East of Tres Ríos, along camino on hill opposite shrine at Los Altos, on Annonaceae, 13 Jun 1962, *Kuijt 2430* (UBC). **Limón:** Pandora, on *Citrus* sp., *Theobroma cacao* and others, 31 May 1962, *Kuijt 2413* (UBC). **Puntarenas:** Golfito, on small planted tree, sea level, 2 Aug 1962, *Kuijt 2568* (UBC). **San José:** 8 miles from San Isidro del General towards Dominical, on *Coffea*, 24 June 1962, *Kuijt 2440* (UBC).

PANAMA. **Bocas del Toro:** along railroad near station at Milla 10, 27 Jul 1971, *T.B. Croat & D.M. Porter 16349* (MO); hillside above Almirante, on cacao, 28 Nov 1971, *A. Gentry 2744* (MO); Chiriquicito to 5 mi S along Río Guarumao, 5--7 Jun 1967, on *Piper*, *W.H. Lewis et al. 2110* (MO). **Canal Zone:** along Chagres River, near mouth at end of road 82, ½ km S of Fort San Lorenzo, sea level, 27 Mar 1974, *M. Nee 10882* (MO); Pipeline Road between markers 7 and 11, NW of Gamboa, 4 Oct 1969, *W.H. Lewis, & R.A. Sharp 31* (MO). **Chiriquí:** Fortuna Dam region, 8°45'N, 82°15'W, 1050 m, along Quebrada Arena near continental divide, 9 Mar 1986. *G. McPherson 8748* (MO); 1.6 km W of Puerto Armuelles, along roadside and stream, 50 m, on *Jatropha curcas*, 18 Feb 1973, *T.B. Croat 21939* (MO). **Coclé:** foothills of Cerro Pilon, near El Valle, 900 m, on *Homalium*, 5 Oct 1967, *J. Duke & M. Correa 14676* (MO); La Mesa, 2200 ft, 4 Jan 1974, *J.D. Dwyer & M. Nee 11944* (MO). **Colón:** along stream 3 miles E of Transisthmian highway on road to Salamanca, 100 m, 19 Dec 1972, *A. Gentry 6729* (MO); E Santa Rita Ridge, 14 Feb. 1968, *M.D. Correa 690* (MO); hills just N of Río Guanache, 1--200 m, 16 Nov 1975, *G. Davidse & W.G. D'Arcy 10074* (MO); along Río Boqueron near No.1 manganese mine E of Salamanca, 50 m, 9.35°N 79.32°W, 3 Jul 1982, *S. Knapp, N. Hollobrook & M. Vodicka 5806* (MO). **Darien:** vicinity of Piñas, 2 Mar 1967, *J. Duke 10644* (MO); Río Balsa between Manene & Guayabo, 8 Nov 1967, *J. Duke & N. Nickerson 14946* (MO). **Panamá,** Cerro Jefe, Los Altos de Cerro Azul, Paseo Cerro Jefe just past bridge over Río Vistamares, secondary forest, on *Vismia macrophylla*, 800 m, 09°12'56.31"N, 79°24'5.28"W, 15 June 2014, *J. & L. Harrison 635* (UCH, MO); Cerro Jefe, Los Altos de Cerro Azul, Paseo Himalaya opposite lot 34 of El Frente subdivision, wet premontane forest, on *Vismia macrophylla*, 800 m, 09°12'6.76"N, 79°24'52.22"W, 15 June 2014, *J. & L. Harrison 636* (UCH, MO); Cerro Azul, Cerro Azul towers area on road to Los Altos de Cerro Azul, on leafless, unidentified tree, 585 m, 09°9'25.43" N, 79°24'59.85"W, 15 June 2014, *J. & L. Harrison 637* (UCH, MO); Brushy roadside, premontane wet forest area 8.5 km by road NE of Lago Cerro Azul on road to Cerro Jefe, 800

m, 6 May 1974, *M. Nee 11472* (PMA); Cerro Jefe, cloud forest 0.4 mi from entrance to conservation area from Paseo Cerro Jefe in subdivision Los Alto de Cerro Azul, on *Vismia macrophylla*, 900 m, 09°13'34.5"N, 79°23'20.34"W, 15 Jun 2014, *J. & L. Harrison 634* (MO; UCH). **San Blas:** El Llano-Cartí road, km 19.1, 350 m, 9°19'N, 78°55'W, 14 Jun 1985, *G. de Nevers & H. Herrera 5836* (MO); along canal just N of Mandinga Airport, 27 Oct 1967, *J. Duke 14852* (MO). **Veraguas:** Trail from Bajo Chitra to Río Gatú, cloud forest, Pacific slope, 8°34'N, 82°56'W, 650--750 m, 14 Jan. 1986, *G. de Nevers & G. McPherson 6783* (MO); vicinity of Santa Fé on slopes of CerroTute-Arizona above school at Alto Piedras, 8°30'N, 81°10'W, 820 m, 28 Jan 1989, *G. McPherson 13662* (MO).

The fruits of *Oryctanthus* in Panama are said to be consumed by a variety of birds, mostly residents (Leck 1972). *Vismia macrophylla* appears to be the favorite host of *O. callicarpus* on Cerro Jefe; this is possibly related to the fact that the host's fruits are also eaten by birds (Croat 1978).

Inflorescence length and flower number cannot be accurately specified in *Oryctanthus callicarpus* and most of its congeners, as flower production is essentially continuous. Inflorescences as small as 1 cm may start flowering and eventually become many times as long. In *Croat 2139* (MO), for example, one inflorescence is ca. 11 cm long and has borne some 200 flowers; it is still elongating.

Oryctanthus plants almost universally develop basal epicortical roots bearing secondary haustoria, such roots being absent from their branches. However, the host tree apparently may exert some influence over this development. In a related species in Ecuador, *O. alveolatus* (Kunth) Kuijt, it has been shown that a massive primary haustorium develops without any roots if the host is *Euphorbia latazi* Kunth (Kuijt 1989). In our scrutiny of Panamanian *O. callicarpus*, several instances have been seen where, similarly, a massive primary haustorium develops without any evidence of epicortical roots (for example, *Davidse & D'Arcy 10074* and *Lewis et al. 2110*, both MO).

The collection *Knapp et al. 5806* (MO) is recorded as being collected from a banana host plant. If true, this represents the only known instance of a banana serving as a mistletoe host in nature; an established seedling has been reported on this host by Kuijt & Mulder (1985) under greenhouse conditions. In fact, monocots generally are exceedingly rare as hosts for mistletoes (Kuijt & Mulder 1985).

Etymology: The epithet "*callicarpus*" refers to the beauty of the multicolored fruits.

ACKNOWLEDGEMENTS

We thank Dr. Kanchi Gandhi (GH) for nomenclatural advice.

LITERATURE CITED

- Croat, T. 1978. Flora of Barro Colorado Island. Stanford University Press, Palo Alto, California.
 Kuijt, J. 1976. Revision of the genus *Oryctanthus* (Loranthaceae). Bot. Jahrb. Syst. 95: 478-534.
 Kuijt, J. 1986. Loranthaceae. in Flora of Ecuador 32C: 115-197. G. Harling & B. Sparre (eds.). Swedish Research Council, Stockholm.
 Kuijt, J. 1989. Additional notes on the parasitism of New World Loranthaceae. Beitr. Biol. Pflanzen 64: 115--125.
 Kuijt, J. and T. A. Zanoni. 2013. Lectotypification of *Oryctanthus occidentalis* (L.) Eichler (Loranthaceae). Phytologia 95: 248-249.
 Kuijt, J. and D. Mulder. 1985. Mistletoes parasitic on orchids. Amer. Orchid Soc. Bull. 54: 976-979.
 Leck, C. F. 1972. The impact of some North American migrants at fruiting trees in Panama. The Auk 89: 842-850.



Fig. 1. *Oryctanthus callicarpus* (J. & L. Harrison 636).