Violaceae. Part I: Rinorea and Rinoreocarpus

Hekking, W.H.A.

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Rinoreocarpus

1871). Type. Brazil, Bahia: Blanchet 5393 (n.v.) (=Anchietea sp. [Violaceae] according to the description given by Turczaninoff. 1854. not Rinorea spec. (Eichelt in Martius) Kuntze and also not Rinorea racemosa (Martius) Kuntze).


Trees or treelets. Leaves alternate; tertiary venation between reticulate to scalariform; stipules herbaceous, deciduous. Inflorescences cymose, 1–3 fasciculate in the axils of the leaves; 'pedicels' articulate.1 Sepals five, quincuncial, subequal. Petals apotact, equal. Stamens five, free; dorsal glands wanting or completely fused with the filaments; anthers introrse, dehiscing laterally, ventrally unappended. Dorsal connective scales apical, minute, subulate, linear or narrowly deltoid. Ovary ovoid-conical, distinct from the style; placentas parietal, each provided with 6–10 ovules. Style filiform, erect; stigma pulvinate. Capsule dehiscing into three valves; valves (sub)equal, coriaceous to subligneous. Seed pyriform, with a caruncle at the base and an areola at the apex, with copious endosperm, and provided with an erect embryo.

Rinoreocarpus is a monospecific neotropical genus, closely related to Rinorea. It is an understory plant in tropical forest of lower regions in Amazonia and adjacent parts of Surinam and French Guiana. Its reddish-orange flowers are larger than those in Rinorea, and are arranged in cymose inflorescences. Rinoreocarpus ulei was first illustrated in Ducke (1925), under its synonymic name Rinoreocarpus salmoneus; in this monograph more details have been illustrated by the author.

Etymology. Rinoreo- = similar to Rinorea, which in turn is derived from local names in French Guiana (Aublet, 1775) and Colombia. karpos (Greek) = fruit.


Tree or treelet. 3–12 m tall. Branchlets with small whitish to yellowish lenticels, pilosulous to glabrescent. Leaves alternate; petioles 4–15 mm long, pilosulous to glabrescent; stipules deciduous, narrowly ovate to deltoid, acuminate, falcate, subacute, 2.5–7.5 × 1–1.75 mm, herbaceous, puberulous along the costa, striate, ciliate; lamina narrowly elliptic to obovate, acuminate to cuspitate, 7.5–26 × 2.5–9 cm, papery to subcoriaceous, glabrous on both sides; both sides of costa and lateral veins glabrous to pilosulous near the base; domatia wanting; lateral veins (8–)9–14–(16) pairs (acumen excluded); tertiary venation varying from reticulate to scalariform; base rounded to cuneate, slightly decurrent into the petiole; margin sub serrate, subcrenate or subentire; acumen 0.5–2.5 cm long, apex obtuse to subacute, mucronulate. Inflorescences axillary, lateral or subterminal, 1–3 fasciculate, cymoid. 1.75–2 × 1–2 cm; central axis puberulous to pilosulous; common peduncle (1–)5–15 mm long, puberulous, becoming 10–25 mm long, when fruiting; 'pedicels' 1.75–6–(8) mm
FIG. 59. Floral diagram of the monotypic genus *Rinoreocarpus* (*R. ulei*). Legend: Sepals quincuncial, petals apotact, filaments free; dorsal connective scales linear to subulate or narrowly deltoid; gynoecium trimerous. e = exterior (outer) sepal or petal; i = interior (inner) sepal or petal; e/i or i/e = one sepal or petal in between, with one margin exterior (outside), the other interior (inside).


long, puberulous, articulated near or just below the middle, becoming 8–15 mm long, when fruiting; bracts and bractlets deltoid to ovate, subacute to subobtuse, herbaceous; bracts ca. 1.75 × 1.25–1.5 mm; bractlets 1.25–1.5 mm long and wide. *Flower* buds ovoid, conical, acuminate, subacute. Sepals subequal, slightly connate at the base, ovate, 1.75–2.25 × 1.25–1.75 mm, herbaceous, greenish-brown when fresh, carnose, appressed puberulous, base carnose, margin ciliolate, apex obtuse. Petals narrowly ovate, 3–5 × 1.5–1.75 mm, herbaceous to carnose, reddish-orange when fresh, both sides of costa puberulous, margin partly ciliolate, apex obtuse. Stamens (1.5–)2–2.5 mm long; filaments free (0.75–)1–1.25 × ca. 0.25 mm; dorsal glands wanting or completely fused with the filaments; anthers ellipsoid to ovoid, obtuse, 0.75–1 × ca.
FIG. 61. Isotype specimen of *Rinoreocarpus ulei* (Ule 9622, G (herb. Delessert)).

0.75 mm, glabrous; connective outside, deltoid, obtuse to subacutish, 0.6–0.8 × 0.2–0.4 mm, glabrous; connective scales apical, subulate, linear or narrowly deltoid, 0.1–0.3 × 0.1–0.2 mm, scarious, uncolored, transparent, glabrous, entire to erose. Ovary ovoid-conical, 1–1.25 mm long and wide, glabrous. Ovules six to ten per placenta. Style filiform to slightly clavicate near the apex, erect to slightly curved, 2.5–3.75 mm long, exceeding the stamens by 2–2.5 mm; stigma pulvinate, 0.1 × 0.15 mm. Capsule ellipsoid to ovoid, acuminate, more or less symmetric, coriaceous, slightly veined, greenish, pink, brown or dark red when fresh; valves three, subequal, 1.75–3.25 × 0.5–1.25 cm. Seeds two to four per valve, pyriform, 6–7 × 4 mm, glabrous, shining, black-purplish, punctate near the apex.

Distribution (Fig. 63) and ecology. *Rinoreocarpus ulei* is widespread over Amazonia (Brazil, E Peru, N Bolivia), French Guiana and Surinam, and is to be expected in Guyana. Its area of distribution is elliptic in shape, surrounding the
Amazon basin, where no specimens have been collected as yet between Manaus and the Upper Amazonia area.

It is a treelet, occurring in the understory of tropical rain forests, from 0 to 400 m. Usually collected along rivers, streams and creeks, where it inhabits inundated areas as well as periodically inundated areas. Soil clayish or sandy.

Phenology. Probably flowering and fruiting throughout the year.

Representative specimens examined: SURINAM: Vic. Wilhelmina Gebergte, Lucie Rivier, 3°20–22’N, 56°26–49’W, 225 m, 10 Jul 1963 (fl), Maguire et al. 54117 (Uw 17442) (COL, K, U).

FRENCH GUIANA: Sommet Tabulaire, 50 km SE of Saül, 24 Aug 1980 (fl), de Granville 3583 (CAY, U).


BRAZIL, ACRE: Mun. of Brasileia, km 16, rd. to Assis, 5 km from margin of the rd., 2 Nov 1980 (galls), Cid & Moreira 2096 (INPA, NY, U); Mun. of Sena Madureira, 27 Sep 1980 (fl), Cid & Nelson 2560 (INPA, NY, U); idem, rd. of Bonsucoes km 7, 1 Oct 1980 (galls?), Cid & Nelson 2667 (INPA, NY, U); Mun. of Rio Branco, rd. of Rio Branco–Porto Velho km 17, 25 Oct 1980 (fr, galls?), Cid & Nelson 3052 (INPA, NY, U); Mun. of Sena Madureira, rd. of Bonsucoes km 7, margin of Rio Caeté, 25 Oct 1980 (fl), Cid & Nelson s.n. (INPA 97844, NY, U); rd. Rio Branco–Brasileia, 50 km from Rio Branco, 2 Oct 1980 (fr), Lowrie et al. 345 (NY); idem, 24 km from Rio Branco, 6 Oct 1980 (fl, galls), Lowrie et al. 409 (INPA, NY, U); Road Rio Branco–Porto Acre km 33, 10°0’S, 67°50’W, 11 Oct 1960 (galls, fr), B. Nelson 590 (INPA, NY, U); 44 km E of Sena Madureira, 27 Sep 1968 (juv fr), Prance et al. 7617 (U); trail W of Rio Iaco from São Caetano, 18 km upstream Sena Madureira, 8 Oct 1968 (juv fr), Prance et al. 7942 (NY, U); AMAZONAS: Basin of Rio Madeira, 1 km N of Riberão, rd. Abuña–Guajará Mirim, 26 Jul 1963 (galls, juv fr), Prance et al. 6507 (INPA, NY, U); Mun. of Tarauaca, 12 km above confluence with Rio Tarauca, 16 Sep 1968 (juv fr, galls), Prance et al. 7306 (U); Mun. Santa Barbara, 10 km SW of Sed. de Mineração, 9°10’S, 63°70’W, 28 May 1982 (fl), Teixeira 832 (INPA, U); Mun. de Humaitá, 23 Jun

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FIG. 63. Distribution of Rinoreocarpus ulei.

FIG. 62. Rinoreocarpus ulei (A and B from Maguire et al. 54117, C and E from Ducke s.n. (RB 18024) (one of the syntypes of Rinoreocarpus salmoneus); D from Cle 9622 (type of Gloeospermum ulei); F from Ducke s.n. (MG 16878, RB 18023). A, Leaf. B, Habit of flower, juvenile stamens and pistil. C, Flower bud. D, Androecium and gynoecium. E, Valve of a capsule. F, Seed, glabrous.