

***Dracula immunda* A.Doucette, sp. nov.** (Figs. 1–4)

A Draculae ripleyanae floribus parvioribus et lamellis secundariis margines epichili attingentibus differt.

Type:—PANAMA. Veraguas: Gathered from material cultivated at Finca Dracula, reported from the Province of Veraguas from cloud forest above Santa Fe, *Doucette* 3389 (holotype BH!, isotype PMA!; this specimen is in cultivation at Finca Dracula) Fig. 1.

Epiphytic, caespitose herb, 12–20 cm tall. Roots flexuous, 2 mm in diameter. Stem semiterete, sulcate adaxially, keeled abaxially, 1.5–2.0 cm long, 1.5 mm in diam., enveloped by 3 bracts, 3–25 mm long, 3–5 mm wide. Leaf erect, narrowly elliptic-ligulate, acute, narrowed into an indistinct petiole towards the point of connection to the stem, 10.0–18.5 cm long, 1.0–2.0 cm wide. Inflorescence a loose, successively few-flowered raceme, borne from low on the stem, 4.0–16.0 cm long, 0.1 cm in diameter; peduncle slender, terete, horizontal to descending, subverrucose, green suffused with purple, bracts 6–11, translucent, 2.5–5.0 mm long, 1.0 mm in diameter. Pedicel purple dorsally, olive ventrally, 11–22 mm long, 1 mm in diameter. Ovary terete, 6-sulcate, subverrucose, purple, 3–5 mm long, 2 mm in diameter. Flower facing down, not completely spreading, cupped, sepals dull white, suffused and speckled with purple, tails purple (rarely white), petals cream, sometimes suffused with purple, sometimes suffused with yellow, marked with dark brown, lip white, usually suffused with pink, column light yellow, anther cap cream. Sepals carinate, densely pubescent (rarely papillose) within; dorsal sepal transversely obovate, 6–8 mm long, 8–9 mm wide, the apex obtuse, contracted into a slender tail, 1.6–2.6 cm long; the lateral sepals ovate, oblique, 5–9 mm long, 8–9 mm wide, connate at the base to form a shallow mentum that is adorned with small purple warts within, apices obtuse, contracted into tails similar to that of the dorsal sepal. Petals oblong (rarely lanceolate), apex rounded (rarely acuminate), bivalvate, verrucose to tuberculate between the laminae, inner lamina rounded to acute with a denticulate margin, the outer lamina rounded (rarely acute) with a denticulate margin, and usually reflexed, 2.5–5.5 mm long, 1.0–1.5 mm wide (Figs. 4a–4c, 1–4). Lip oblong to pandurate, 5.0–6.0 mm long, 2.0–2.5 mm wide; the hypochile ovate to oblong, 3.5–4.0 mm long, 2.0–2.5 mm wide, with erect, rounded marginal angles, cleft centrally, the base concave, hinged to the column foot; the epichile ovoid, minutely muricate externally, 2.0–2.5 long, 2.0 mm wide, with a concavity filled with 3 closely spaced lamellae as tall as the erect margin and 2 or 3 lower, minute accessory lamellae radiating up the sides to the margin (Figs. 3a–3c, 1–4). Column stout, hunched, minutely winged, semiterete, 3.0–3.5 mm long (excluding the foot), 1.0–1.5 mm wide, provided dorsally with 2 microscopic, dentate crests before the apex, the apex membranous, contracted into acute points, and extending past the anther cap; the foot stout, 2–3 mm long (Fig. 3a, 1–4). Anther cap cucullate, membranous, 1.0 × 0.8 mm. Pollinia 2, ovoid, laterally flattened, 1.0 × 0.4 mm, each provided with a glandular caudicle.

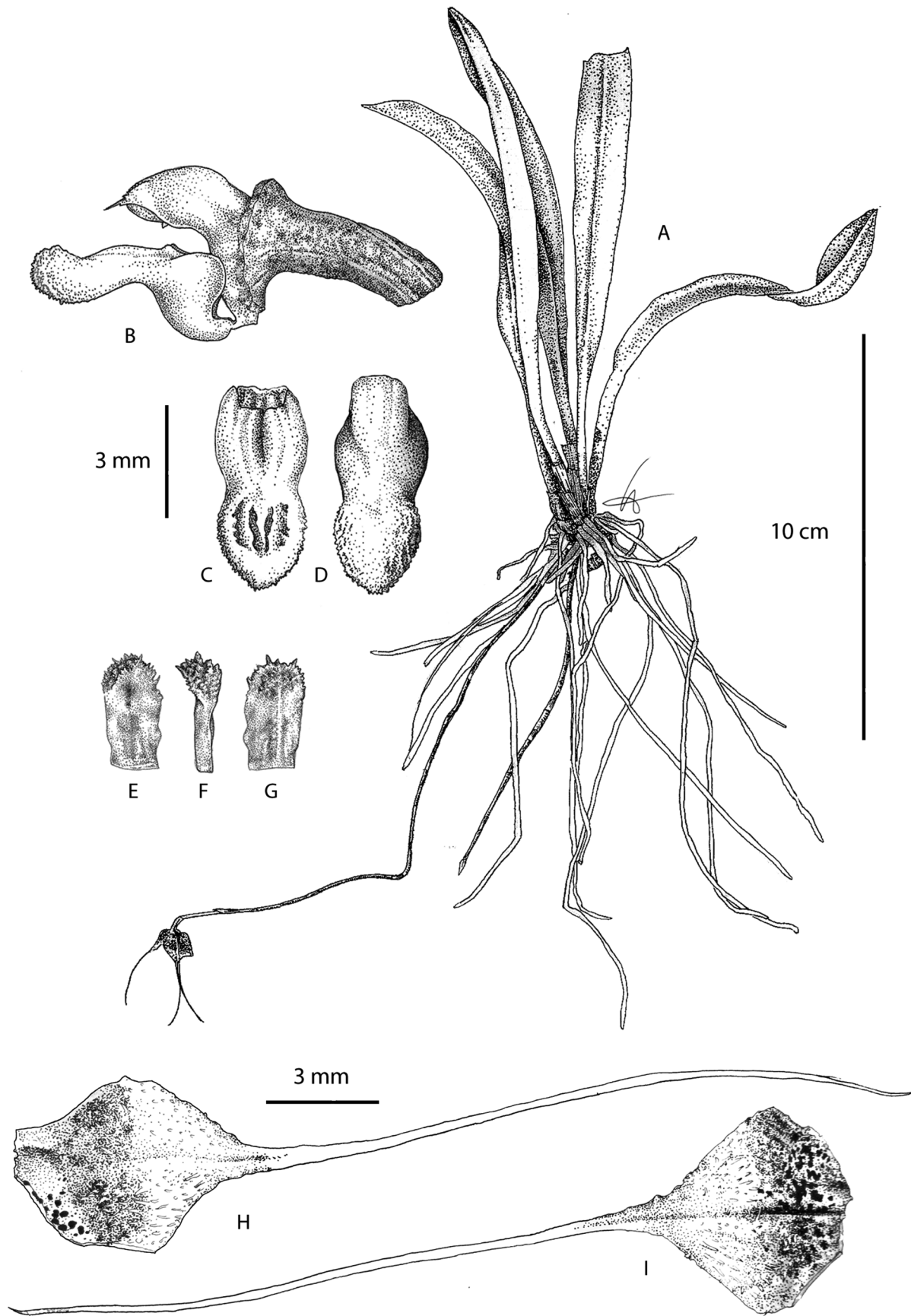


FIGURE 1. *Dracula immunda*: A, habit; B, flower with sepals and petals removed; C, dorsal side of lip; D, ventral side of lip; E, inside of petal; F, profile of petal; G, outside of petal; H, lateral sepal; I, dorsal sepal. Drawn from the holotype, Doucette 3389.

Distribution and habitat:—*Dracula immunda* is known only from the type locality in the Parque Nacional Santa Fe de Veraguas in Panama. The park is situated on the easternmost part of the Central Cordillera. This mountain range is isolated by the low-lying, drier terrain of Nicaragua and Honduras and by the lowlands in the Isthmus of Panama. The Central Cordillera is a biodiversity hotspot with a concentration of endemic species (Brooks *et al.* 2002). Along the ridge where *Dracula immunda* is found, the rare and narrowly endemic *Condylago furculifera* Dressler & Bogarin (2007: 2), *Trichosalpinx ringens* Luer (1996: 108), and *Zamia pseudoparasitica* Yates in Seeman (1854: 202) are also found. At present, only one population of *Dracula immunda* is known, consisting of about 20 individuals. Because these mountains are isolated, it is not likely that the range of *Dracula immunda* is much greater.

Dracula immunda grows epiphytically in the understory of cloud forests at elevations around 1100 m (Fig. 2). They occur as single individuals or in small colonies of up to 10 plants on trunks of living trees or fallen branches. The plants are found 0.3–10.0 m above the ground in association with species of *Anthurium* Schott (1829: 828), *Dichaea* Lindley (1833: 208), *Epidendrum* Linnaeus (1753: 952), *Maxillaria* Ruiz & Pavón (1794: 116), and *Pleurothallis* Brown (in Aiton, 1813: 211). A collection of representatives of the local flora was deposited at PMA (*Doucette* 3394–3437).



FIGURE 2. Habitat and habit of *Dracula immunda*: A, habitat of *D. immunda*; B, *Dracula immunda*, *Doucette, Maduro & Nuñez* 3205, *in situ* in flower and fruit; C, flower of *Dracula immunda*, *Doucette* 3391.

Phenology:— Free-flowering in cultivation at Finca Dracula. One wild plant was observed flowering in March (*Doucette, Maduro & Nuñez* 3205), but this does not seem to be the common flowering period in the wild, as no other plants had any active inflorescences.

Conservation status:— Data are insufficient to assign a conservation status to *Dracula immunda*. The species is rare, but it does not seem to be in immediate danger of extinction. It is currently being propagated

by seed at Finca Dracula. The habitat in which this species was discovered is protected in a national park under the Autoridad Nacional del Ambiente (ANAM) of Panama.

Etymology:—from the Latin *immunda*, “unclean,” in reference to the white sepals with the appearance of being stained and spotted with purple.

Additional specimens examined (paratypes):— PANAMA. Veraguas: Parque Nacional Santa Fe, 1200 m, March 25 2010, *Doucette, Maduro & Nuñez 3205* (PMA, Fig. 3); flowered in cultivation at Cornell University, 24 November 2010, *Doucette 3438* (BH); the remaining specimens were flowered in cultivation at Finca Dracula, from a specimen obtained from Eric Olmos in Veraguas in cloud forest near Santa Fe, 1000 m, 26 March 2010, *Doucette 3390* (PMA); 26 March 2010, *Doucette 3392* (PMA); 5 July 2010, *Doucette 3391* (PMA, Fig. 4); 14 July 2010, *Doucette 3393* (PMA).

Dracula immunda is part of the *D. erythrochaete* complex (*D. astuta*, *D. carlueri*, *D. erythrochaete*, and *D. riplejana*). *Dracula erythrochaete* s.s. is a highly variable species that is distinguished from related species by the stability of the lip morphology (Luer 1993). The species in this group can be differentiated from each other by five morphological features: degree of sepal cupping (*Dracula astuta* versus *D. erythrochaete* versus *D. carlueri*), tail length (*D. astuta* versus *D. erythrochaete*), flower size (*D. riplejana* versus *D. astuta*, *D. erythrochaete*, *D. carlueri*), the color pattern of the sepals (*D. astuta* versus *D. erythrochaete* and *D. riplejana* versus *D. erythrochaete*), and lip characters. These characters may be related to pollination and thus to the maintenance of species integrity. The lip of flowers in this complex is characterized by an inflated epichile that is longer and wider than the hypochile, with revolute, toothed margins, and low, thin lamellae.

Differences in size of the epichile relative to the hypochile as well as texture of its external surface are used as distinguishing characters in the *D. erythrochaete* complex. The lip of *Dracula astuta* is most like that of *D. erythrochaete*, but the epichile of *D. astuta* is larger relative to the hypochile (Luer 1993). The lip of *Dracula carlueri* is most like that of *D. erythrochaete*, but the epichile is smaller relative to the hypochile (Luer 2000). The lip of *Dracula riplejana* is most like that of *D. carlueri*. Lips of both species are similar in shape and size, but the epichile of *D. riplejana* is minutely verrucose externally. The lip of *Dracula immunda* is unusual for species in this complex, but the general shape and structure is most similar to the species recognized in the *D. erythrochaete* complex than to the other Central American *Dracula* species. The epichile of *Dracula immunda* is comparatively thick, more textured, not inflated, narrower or the same width and smaller or the same length as the hypochile, with erect margins and high lamellae that reach the upturned margin of the epichile. Within the *D. erythrochaete* complex, *Dracula immunda* is most similar to *D. riplejana*; both species have small flowers with a similar color pattern (white with a purple central mark) and an epichile with a textured surface. The small flowers and color pattern distinguish *D. immunda* and *D. riplejana* from the other species in the *D. erythrochaete* complex (Fig. 4d). *Dracula immunda* is distinct from *D. riplejana* in having sepals that are more strongly cupped, plus shorter tails and a unique lip. There is a subtle difference between the petals and column of *Dracula immunda* and those of *D. riplejana*. The petals of *Dracula immunda* are stouter and the outer lamina of the petal does not reflex as greatly as those of *D. riplejana*. The petals are more tightly held against the column in flowers of *D. immunda* than in flowers of *D. riplejana*. The column of *D. immunda* is stouter and more hunched than that of *D. riplejana*. The specimens examined do not show variation in the diagnostic features that are intermediate between *Dracula immunda* and *D. riplejana*. This new species differs from all previously described species by the ovoid epichile that is the same width or narrower than the hypochile and muricate externally and has three closely spaced lamellae that reach the margin (Fig. 3b).

FIGURE 3. Floral dissections of small-flowered Central American species of *Dracula* compared to variation within *D. immunda* (1–4 in each series is *D. immunda*; 5, *D. riplejana*; 6, *D. maduroi*; 7, *D. olmosii*; and 8, *D. pusilla*): a, profile of the flower with petals and sepals removed; b, upper surface of lip; and c, lower surface of lips.

Fig. 3a

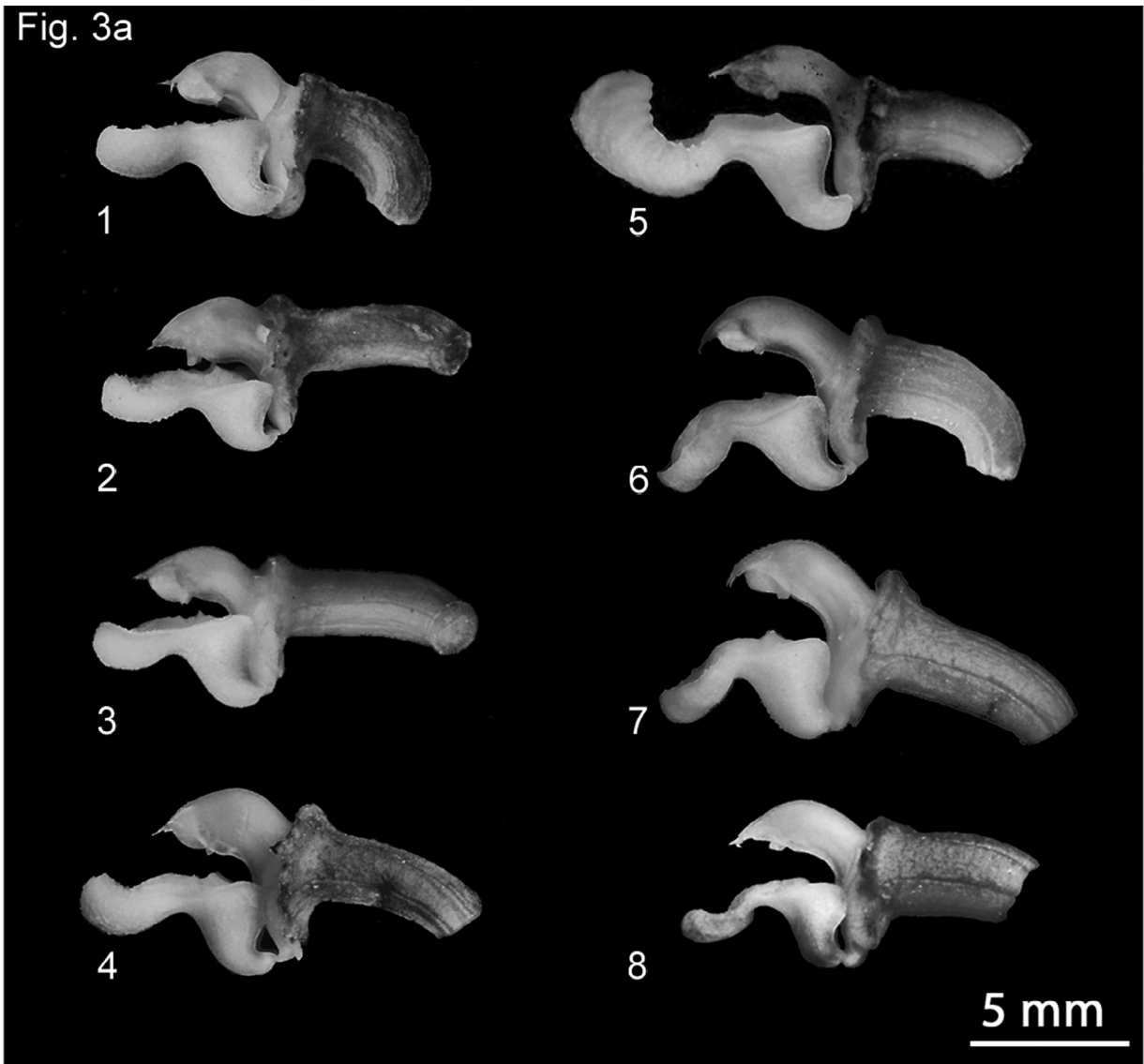


Fig. 3b

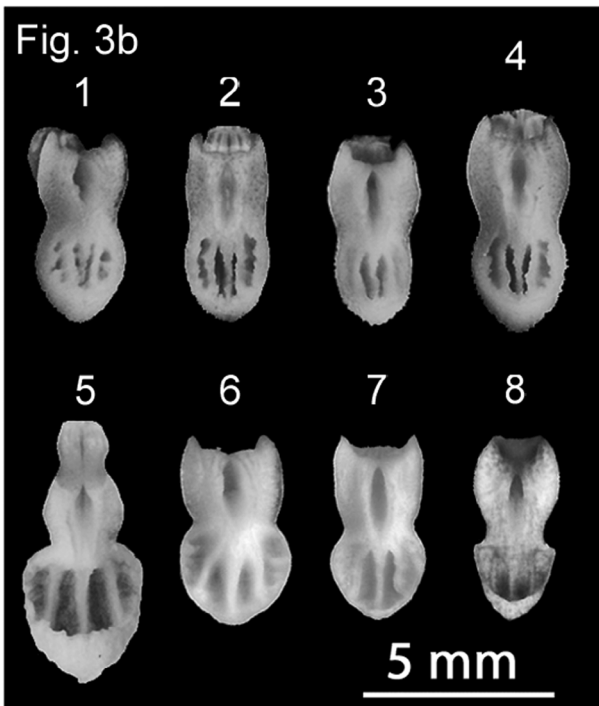


Fig. 3c

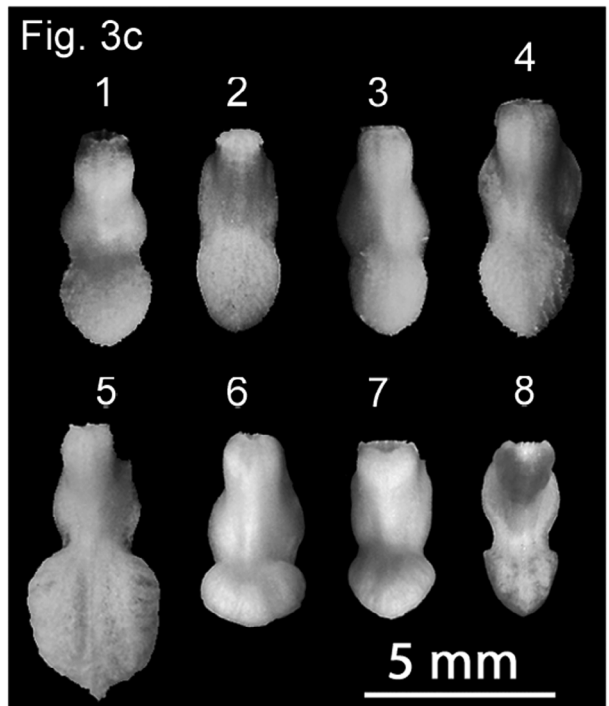




FIGURE 4. Floral dissections and whole flowers (viewed from the front) of small-flowered Central American species of *Dracula* compared to variation within *D. immunda* (1–4 in each series is *D. immunda*; 5, *D. ripleyana*; 6, *D. maduroi*; 7, *D. olmosii*; and 8, *D. pusilla*): a, inner surface of petal; b, profile of petal; c, outer surface of the petal. Fig. 4d, 5, *Dracula ripleyana*, photo courtesy of Eric Hunt; all other photos by the author.