

25 Dec. 1994, G. Carnevali & F. M. Morales 3841 (holotype: INB; isotype: SEL). Figure 2.

Species haec *M. acutifoliae* Lindl. sed floribus majoribus nitide xantho-viridibus, sepala petalaeque acutis, sepalis lateralibus late ovate-lanceolatis (vs. late ovate-oblongis), lobulo centrali longioribus recedit.

Epiphytic herbs, cespitose or shortly creeping, 8–15 cm tall. **Rhizome** abbreviated, clothed by scarious sheaths; **pseudobulbs** clustered, 1-leaved apically, 2–3 cm tall, 0.8–1.5 cm wide and thick but always wider than thick, ellipsoid or oblongoid in outline, section transversely rhombic to rhombic, surface smooth or shallowly ridged-reticulate, pale yellow-green, sheaths enveloping the pseudobulb nonleaf-bearing. **Leaves** 6.5–15 cm long, 13–17 mm wide, erect on the pseudobulb, coriaceous, nonpetioled at all; blade elliptic or lanceolate-elliptic, acute. **Inflorescences** erect or horizontally patent, shorter than pseudobulb; **peduncle** 8–12 mm long, terete. **Floral bract** 11–12 mm long; 6–7 mm wide, obovate-elliptic, acuminate. **Pedicellate ovary** 16–17 mm long, terete, shallowly ridged. **Flowers** dull yellow-green; labellum yellow with orange-maroon speckles and callus, column pale green, resupinate, lasting 4–6 days. **Sepals** with 3 nerves at each side of the

Maxillaria moralesii Carnevali & J. T. Atwood, *sp. nov.* TYPE: COSTA RICA. Alajuela: Río Angel, 1 km antes de Cariblanco, 10°15'40"N, 84°10'40"W, 800–900 m, collected 3 Jun. 1994, flowering under cultivation in St. Louis, MO on

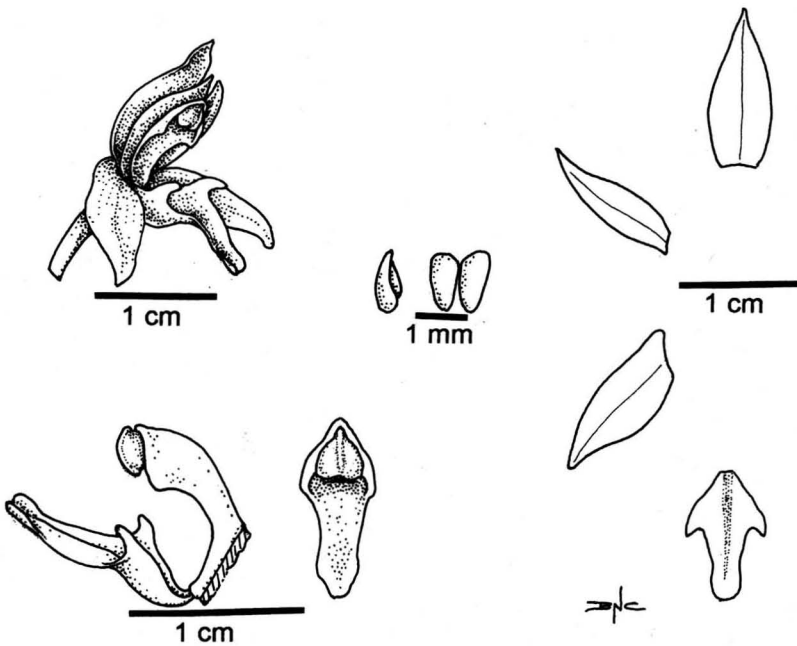


Fig. 2. *Maxillaria moralesii* Carnevali & J. T. Atwood.

midnerve and a few cross-veins, subfleshy; **dorsal sepal** 12.5–13.5 mm long, 6–7 mm wide, ovate-elliptic, acute, concave in natural position; **lateral sepals** 12.5–13.5 mm long, ovate, acute, apically mucronulate, spreading in natural position; **petals** 12.5–13.5 mm long, 3.8–4.2 mm wide, lanceolate, acute, apically mucronulate, 5-nerved with a few cross-veins, somewhat convex, subparallel to column in natural position. **Label-lum** 10.5–11 mm long in natural position, reaching 12 mm when flattened, ca. 7 mm wide between the forcefully expanded apices of the lateral lobes; **midlobe** 5.8–6.2 mm long, 2–2.5 mm wide at apex, ovate-oblong-subquadrate, evenly tapering from base to apex, slightly expanded apically where it is folded-convex, apex subtruncate-rounded; **lateral lobes** 1.2–1.5 mm long, 0.8–1 mm wide at base, triangular-ovate, obtuse, erect-uncinate in natural position, emerging from the lower third of the labellum; basal margins of labellum smoothly curved downwards; disc bearing a narrowly triangular farinose callus that tapers toward mid-labellum where it thickens again. **Column** 7.5–8 mm long, 3–4 mm wide, near the apex where it is broadly winged, semiterete or somewhat dorsoventrally compressed on cross-section at mid-length, arcuate; column-foot 2–2.5 mm long. **Anther** 2.3–2.5 mm long, 2.1 mm wide, surface smooth; **pollinarium** typical for the *M. rufescens* group.

Among the named Central American taxa in the *Maxillaria rufescens* complex, *M. moralesii* is easily distinguished by its acute petals and sepals, the labellum midlobe which is ovate-oblong-subquadrate, evenly tapering from base to apex; a thin, poorly developed callus in the disc, and the clear yellow-green color of the flowers.

When compared to related South American species, *M. moralesii* seems most closely related to *M. chacoensis* from Ecuador and Colombia but this later species has obtuse to rounded petals and sepals and a broader midlobe of the labellum with a thicker callus. As compared with *Maxillaria acutifolia*, *M. moralesii* is easy to distinguish by its acute, long apiculate perianth segments which are clear yellow-green, the sepals are broadly ovate-lanceolate (as opposed to broadly ovate-oblong, obtuse, short apiculate); the labellum also has a midlobe starting on the basal third as opposed to starting about the middle as in *M. acutifolia*. The species is only known with certainty

from the Central Valley of Costa Rica, but it probably ranges farther north in Central America. Plate 1042 of *Icones Plantarum Tropicarum I* (Hamer, 1984a, as *Maxillaria acutifolia* Lindley) almost certainly depicts this species, which would make it range then into Nicaragua and Honduras. This is the species treated as *Maxillaria acutifolia* by Atwood (1987) from La Selva Biological Station.

The species is named after Francisco J. Morales, from INBio, a specialist in the Apocynaceae, Bromeliaceae, and Orchidaceae, and who accompanied the senior author in his 1994 trip to Costa Rica, during which this new species was collected.

The following key summarizes the differences between the three described species of the *Maxillaria rufescens* complex in Central America (at least in Costa Rica and Panama):

1. Pseudobulbs not verrucose; leaves not petiolate; perianth segments acute; callus on the disc thin and not well developed; flowers clear green yellow, the labellum of the same general color with orange-maroon speckles and callus *M. moralesii*
1. Pseudobulbs verrucose; leaves petiolate; perianth segments obtuse to rounded; callus well developed; flowers with white, dull yellow, or reddish-maroon perianth segments, labellum maroon or orange 2
2. Flowers erect, labellum pointing upwards in natural position; perianth segments deep dull red-maroon, labellum dark red-maroon; lateral lobes of labellum short, less than $\frac{1}{2}$ of total labellum length; petals narrowly obovate or narrowly obovate-oblong; pseudobulbs maroon or brown tinged *M. dressleriana*
2. Flowers patent, labellum horizontal; perianth segments white of yellow perianth segments, labellum orange with red-orange callus; lateral lobes of labellum long, at least $\frac{1}{4}$ the length of the labellum; petals elliptic; pseudobulbs clear green *M. hedwigae*