

# A new definition of the genus *Tamayorkis* (Malaxideae, Epidendroideae, Orchidaceae)

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*Tamayorkis* Szlach. (Malaxideae, Epidendroideae, Orchidaceae) is redefined and three additional species, *T. ehrenbergii* (Rchb.f.) R. Gonzalez & Szlach., *T. hintonii* (Todzia) R. Gonzalez & Szlach. and *T. wendtii* (Salazar) R. Gonzalez & Szlach. are incorporated into it. *Tamayorkis* is compared with *Malaxis* Solander ex O. Swartz and *Liparis* L. C. Richard, to which it is closely related.

Key words: angiosperms, nomenclature, Orchidaceae, *Tamayorkis*, taxonomy

A monotypic genus *Tamayorkis* Szlach. was proposed by Szlachetko (1995), based on *Microstylis platyglossa* Rob. & Greenm. Two species previously published in Orquidea (Mex.), *Malaxis hintonii* Todzia (Todzia 1993) and *M. wendtii* Salazar (Salazar 1993), were not taken into account at that time. However, after combining our files on the subject we have concluded that *M. hintonii*, *M. wendtii* and *Microstylis ehrenbergii* (Rchb.f.) Kuntze all pertain to *Tamayorkis*. Consequently, the genus is redefined to include three additional species.

*Tamayorkis* Szlach. *descript. emend.*

Plants terrestrial, herbaceous, pseudobulbous, erect, up to 50 cm tall. Leaf single, convolute, not plicate. Inflorescence terminal, elongate, spicate, many-flowered. Flowers small, resupinate, green or purple in colour. Sepals free, spreading, simi-

lar. Petals linear-oblong, recurved or reflexed. Lip attached to base of column, sessile, entire to subhastate or triangular with basal sides curved upward, about same length as other parts of perianth, disk provided at base with an oblong transverse callus thickening. Gynostemium erect or subspread, short, cylindrical, clinandrium spacious, perpendicular to face of column, entire, descending in front at each side of stigma in a groove. Rostellum short, semicircular or triangular, producing two well-separated, translucent, semiliquid viscidia. Stigma concave and ample, about half the length of the column. Anther apical, situated on top of column, firmly and widely fused with the gymnostemium, immovable; connective wide, forming a roof above the locules, concave to almost flat; locules parallel, cucullate, opening apically. Pollinia 4, in two pairs, in each pair the units equal each other, colaterally united.

Type: *Tamayorkis platyglossa* (Rob. & Greenm.) Szlach. — *Microstylis platyglossa* Rob. & Greenm.

The taxa of *Tamayorkis* usually grow at high elevations, up to 3 700 m altitude in rocky places, or in deep humus soils in *Abies* or other coniferous forests. Most localities can be covered by snow during winter. These are among the few terrestrial orchids in Mexico and Guatemala that can withstand such severe conditions.

In the closely related *Malaxis* Solander ex O. Swartz the flowers are always non-resupinate with the lip very frequently with a basal transverse porrect lamella, but never with a basal, more or less concave callus thickening. The straight column is very short and thick, rarely exceeding 1 mm in length and is dorsiventrally flattened. The anther is erect and the connective much thinner. The 4 pollinia are united in pairs, and in each pair the units are imbricated and unequal. The stigma occupies less than half of the ventral surface of the column, and lacks a descending furrow from the clinandrium on each side.

Another genus closely related with *Tamayorkis* is *Liparis* L. C. Richard. It has resupinate flowers, in which the lip has upturned basal sides, the lip is never concave, and has a basal, variously shaped callus thickening. It has an arcuate column that is more or less elongated, larger than that of *Malaxis* and ventrally flat, commonly sulcate in front. The anther is incumbent and the connective thick, broad and movable. The 4 pollinia are united in pairs, the unit of each pair is collateral, equal in size and form. The stigma occupies a small portion of the ventral face of the column.

It can be concluded from this brief comparison that *Tamayorkis* is somewhat intermediate between *Malaxis* and *Liparis sensu lato*, in fact more closely related to the latter than to the former due to the collateral units of pollinia in each pair. This explains, in part, why authors in the past have overlooked it.

At present the genus embraces four species native to the southern United States, México and Guatemala.

***Tamayorkis platyglossa*** (Rob. & Greenm.) Szlach. (Fig. 1)

Basionym: *Microstylis platyglossa* Rob. & Greenm., Proc. Am. Acad. 32: 35. 1985.

***Tamayorkis ehrenbergii*** (Rchb. f.) R. Gonzalez & Szlach., *comb. nov.* (Fig. 2)

Basionym: *Microstylis ehrenbergii* Rchb. f., Linnaea 22: 835. 1849.

***Tamayorkis hintonii*** (Todzia) R. Gonzalez & Szlach., *comb. nov.* (Fig. 3)

Basionym: *Malaxis hintonii* Todzia, Orquidea (Mex.) 13(1–2): 121–124. 1993.

***Tamayorkis wendtii*** (Salazar) R. Gonzalez & Szlach., *comb. nov.* (Fig. 4)

Basionym: *Malaxis wendtii* Salazar, Orquidea (Mex.) 13(1–2): 281–284. 1993.

### Key to the species of *Tamayorkis*

1. Flowers not densely papillose; lip ovate-triangular to broadly triangular ..... 2
1. Flowers densely papillose; lip subhastate-triangular 3
  2. Lip longer than broad, rounded and slightly dilated at base, lacking basal lateral angles ..... *T. ehrenbergii*
  2. Lip broader than long, provided with basal lateral angles ..... *T. platyglossa*
3. Inflorescence comparatively laxly flowered; flowers light green ..... *T. hintonii*
3. Inflorescence comparatively dense; flowers dark purple ..... *T. wendtii*

In this paper we have accepted the names *Malaxis hintonii* and *M. wendtii*, but their nomenclatural status is open to question. *Malaxis hintonii* agrees in every detail with the description of *Microstylis arachnifera* Ridley, reduced by Williams (1950) to synonymy of *Malaxis ehrenbergii*. Also, *Malaxis wendtii* agrees well with the description of *Microstylis porphyrea* Ridley (= *M. purpurea* S. Wats.), also reduced by Williams (1950) to the synonymy of *Malaxis ehrenbergii*. Furthermore, the type of *Microstylis purpurea* S. Wats. was collected in southern Arizona in the Huachuca Mountains and Todzen (1995) says that “all specimens of *M. ehrenbergii* examined at ASU, TUC, NMC and UNM that are from Arizona or New Mexico show the papillae characteristic of *M. wendtii* as do specimens from Durango and Sonora.”

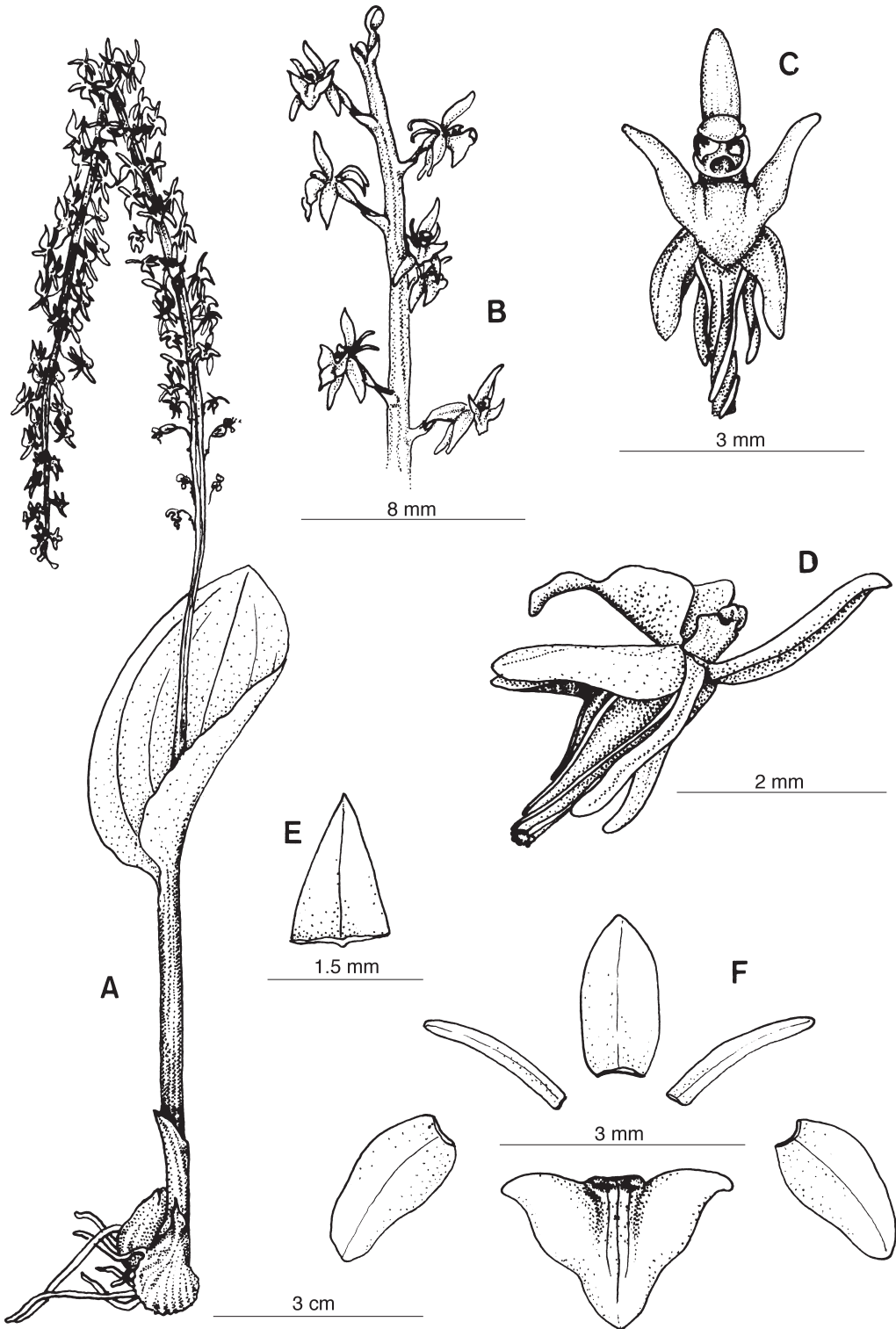


Fig. 1. *Tamayorkis platyglossa* (Rob. & Greenm.) R. Gonzalez & Szlach. (from Greenwood & Gonzalez s.n., Herb. Tamayo). — A: Habit. — B: Part of inflorescence. — C: Flower, front view. — D: Flower, side view. — E: Floral bract. — F: Floral segments (R. G. Tamayo del.).

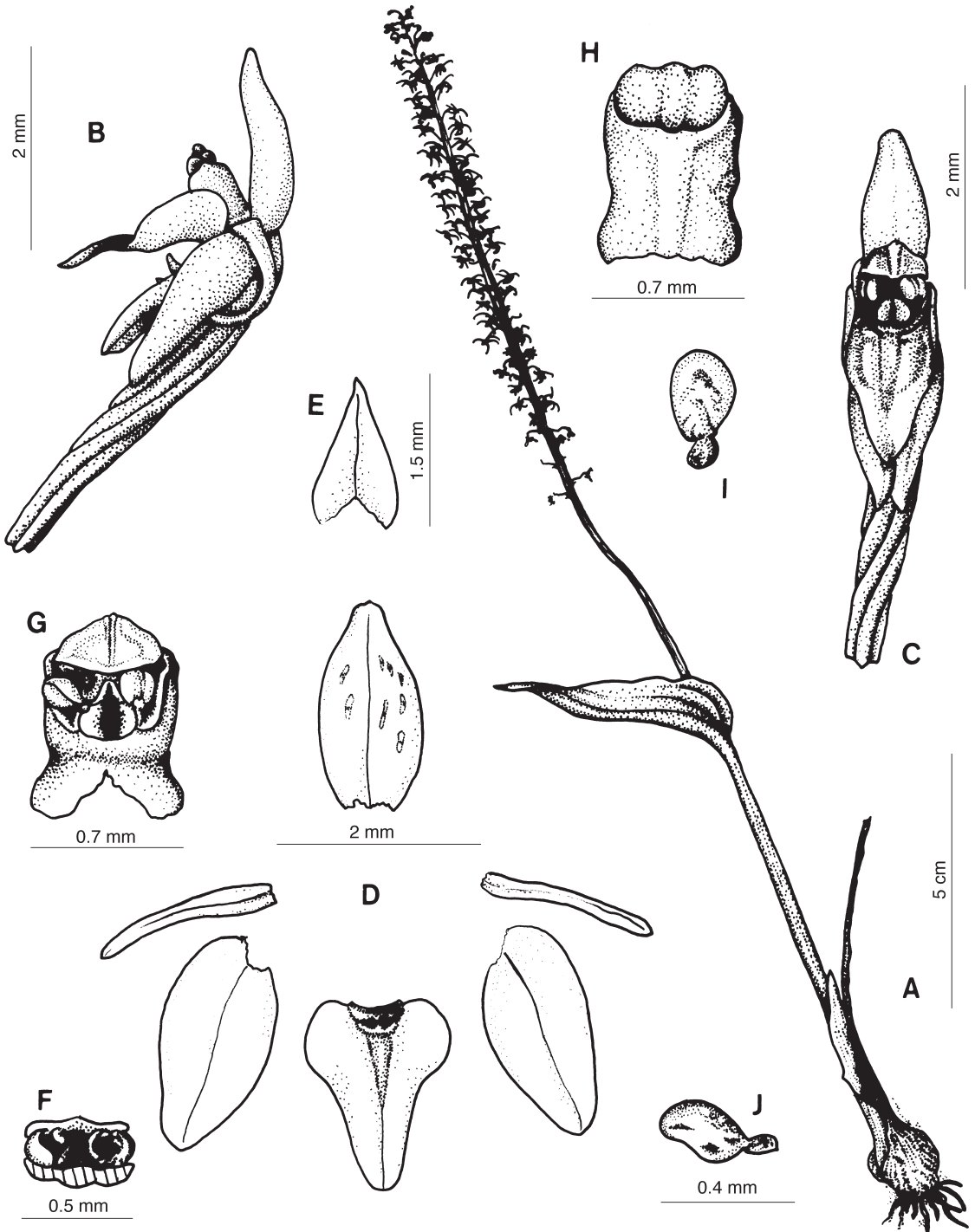


Fig. 2. *Tamayorkis ehrenbergii* (Rchb. f.) R. Gonzalez & Szlach. (from Ray s.n., Herb. Tamayo). — A: Habit. — B: Flower, side view. — C: Flower, front view. — D: Floral segments. — E: Floral bract. — F: Anther. — G, H: Gynostemium, various views. — I, J: Pollinium and viscidium (R. G. Tamayo del.).

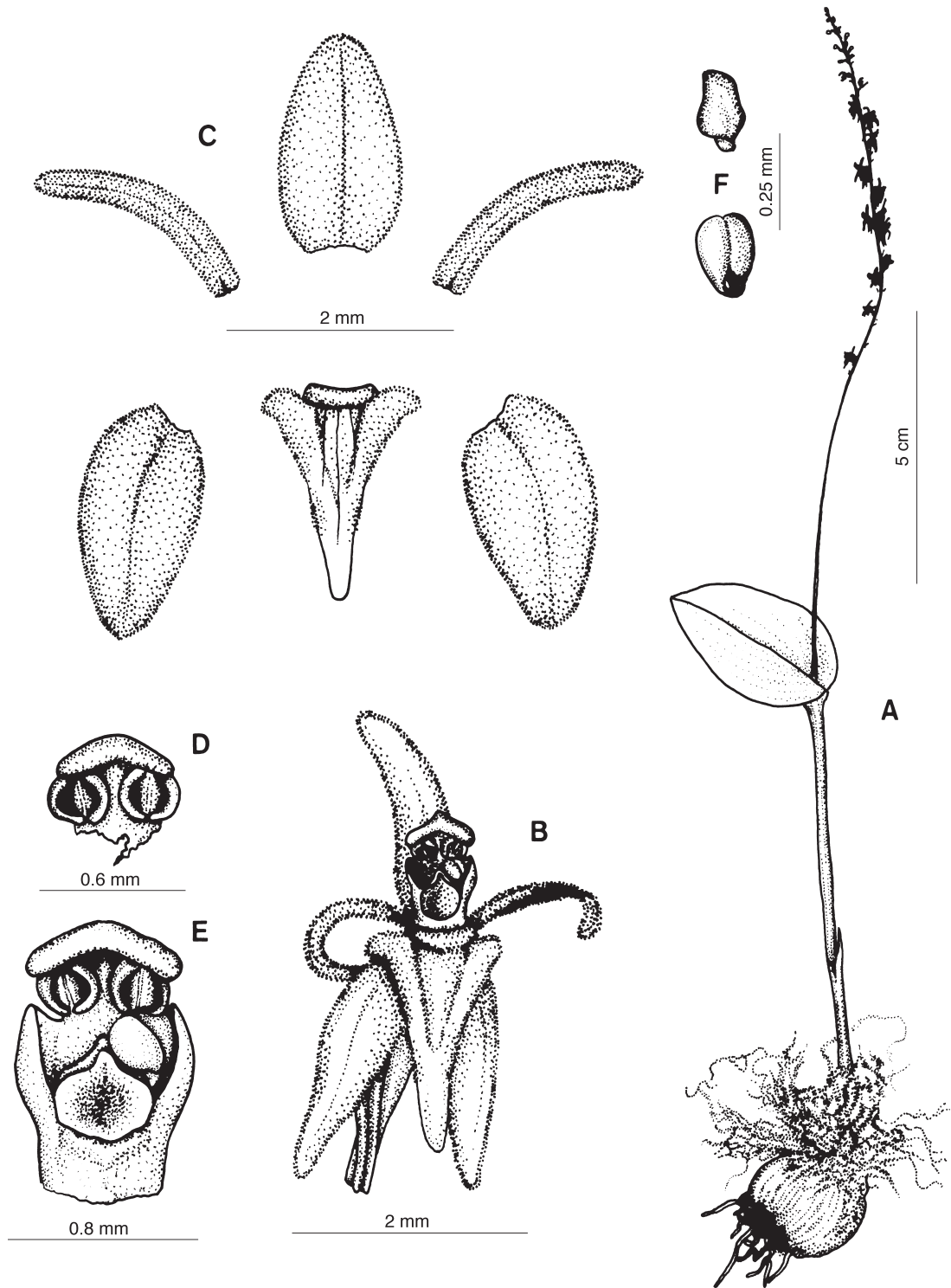


Fig. 3. *Tamayorkis hintonii* (Todzia) R. Gonzalez & Szlach. (from *Patterson 6133*, TEX). — A: Habit. — B: Flower, front view. — C: Floral segments. — D: Anther. — E: Gynostemium. — F: Pollinium and viscidium, various views (R. G. Tamayo del.).

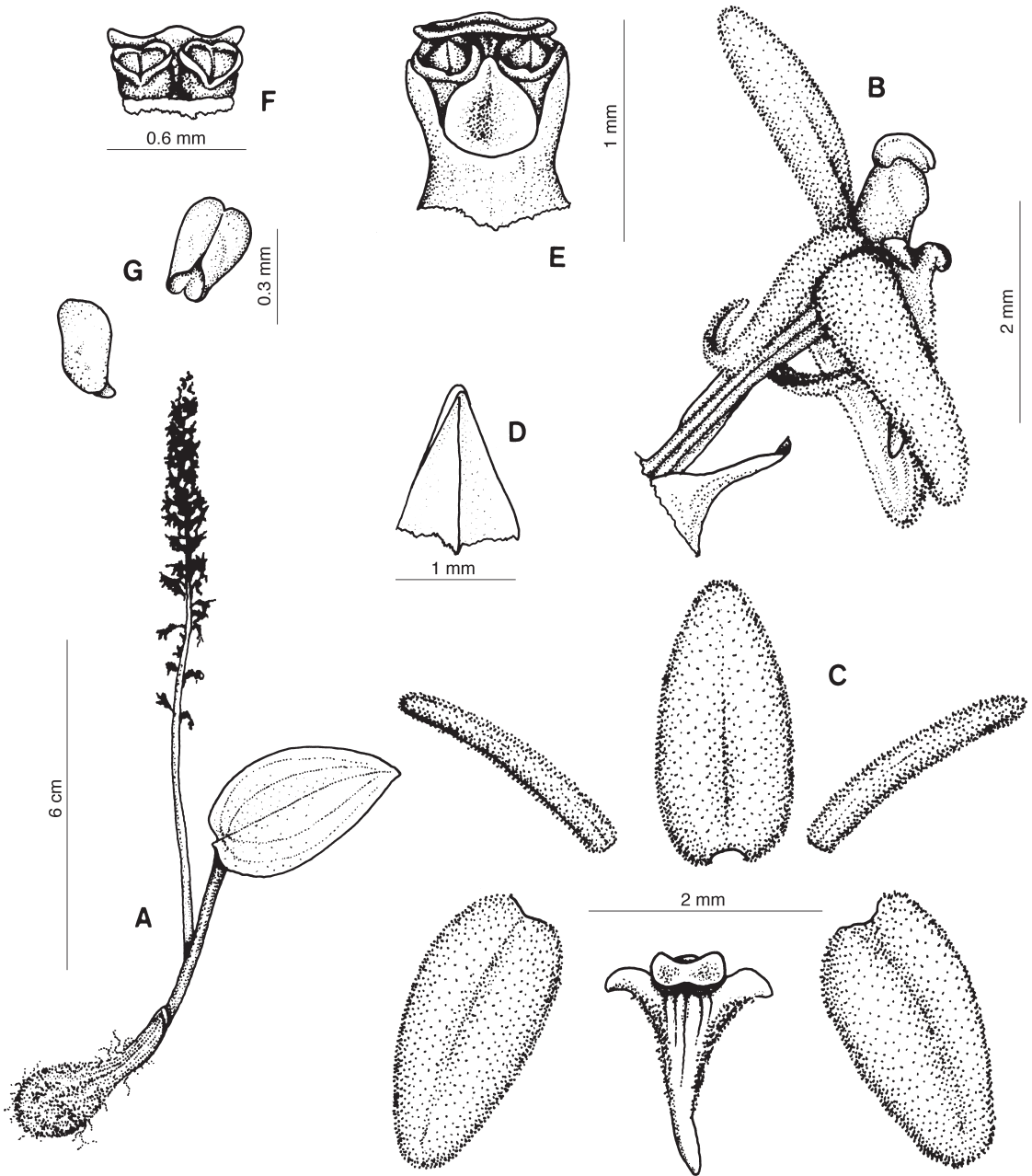


Fig. 4. *Tamayorkis wendtii* (Salazar) R. Gonzalez & Szlach. (from Parranza 2680, IEB). — A: Habit. — B: Flower, side view. — C: Floral parts. — D: Floral bract. — E: Gynostemium. — F: Anther. — G: Pollinium and viscidium, various views (R. G. Tamayo del.).

Curiously, Todzia (1993) compared her new species *Malaxis hintonii* with *M. ehrenbergii*, *M. pringlei* (S. Wats.) Ames, and *M. tenuis* (S. Wats.) Ames on the basis of their unifoliate habit, but the last two species each belong to a different group of Mexican *Malaxis*. Todzia did not men-

tion either *M. porphyrea* Ridley or *M. arachnifera* S. Wats. When publishing *M. wendtii*, Salazar (1993) compared it with *M. ehrenbergii* and neglected to discuss the species mentioned in Ridley's revision. Neither of the two authors mentioned *Malaxis platyglossa* (Rob. & Greenm.)

Ames, as a species or as a variety of *M. ehrenbergii* (Williams 1950).

In both cases the circumstantial evidence concerning the nomenclatural priority is heavy but the question can be solved only when the type specimens or drawings of them can be compared. Thus we consider *Tamayorkis* to comprise four of the species treated above.

An additional note is necessary with respect to the treatment of *Malaxis ehrenbergii* var. *platyglossa* by Williams (1950). We think that reduction of *M. platyglossa* to a varietal status is unjustified since each species of *Tamayorkis* is consistent in its features without intermediate forms throughout its area of distribution, as are most of the species of *Malaxis*.

We left discussion of *Microcystis minutiflora* Schltr. to the end of this paper because it has been reduced by authors to synonymy within *Tamayorkis ehrenbergii*. Schlechter (1899) stated that “flowers are green, the smallest in the genus (*Microstylis*), sepals and the lip 1 mm long, lip deltoid, acute or slightly acuminate, at the base auriculate hastate, at base inside provided with 2 minute, roundate calli”. Ames and Schweinfurth (1935) wrote “The type of *Microstylis minutiflora* shows a leaf which might be described as elliptic-oblong and is somewhat longer and narrower in proportion than is usually the case in *Malaxis ehrenbergii*. The flowers of *Microstylis minutiflora*, however, are in almost perfect agreement with those of *M. ehrenbergii*, although perhaps a trifle smaller”.

From these considerations, therefore, it appears to us that *Microstylis minutiflora* might be conspecific with *Malaxis ehrenbergii*. It still is possible that *Microstylis minutiflora* is an acceptable species after all, but without the chance of examining the type, we prefer just to mention the problem which does not affect the present redefinition of the genus *Tamayorkis*.

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