

NOVELTIES IN THE ORCHID FLORA OF VENEZUELA IX.
SUBTRIBE PLEUROTHALLIDINAE. NEW COMBINATIONS IN *ANATHALLIS*
AND A NEW REPORT FOR THE ORCHID FLORA OF COLOMBIA¹

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Abstract. We discuss a group of four species from the Venezuelan Guayana, two of them closely related to *Anathallis nanifolia* (based on *Pleurothallis nanifolia*). These two species, *Pleurothallis deborana* and *P. pemonum*, were erroneously placed in the synonymy of *Anathallis holstii* (based on *Pleurothallis holstii*). We propose new combinations in *Anathallis* for these two species, discuss the current status of all four species, and provide a key to distinguish them.

Resumen. Se discute un grupo de cuatro especies de la Guayana venezolana, dos de ellas muy cercanamente relacionadas a *Anathallis nanifolia* (basada en *Pleurothallis nanifolia*). Estas dos especies, *Pleurothallis deborana* y *P. pemonum*, fueron erróneamente colocadas en la sinonimia de *Anathallis holstii* (basada en *Pleurothallis holstii*). Se proponen nuevas combinaciones en *Anathallis* para estas dos especies, se discute el actual status de las cuatro especies y se presenta una clave para distinguirlas.

Keywords: *Anathallis*, Brazil, Colombia, Guayana shield, Orchidaceae, Pleurothallidinae, *Pleurothallis*, Venezuela

Recent nomenclatural changes based upon phylogenetic or natural classifications in Pleurothallidinae, and particularly in *Pleurothallis* R. Br. and closely related genera, have resulted often in conflicting circumscriptions.

Anathallis Barb. Rodr. is no exception. In the past two centuries, it was treated first as a synonym of *Pleurothallis* subgenus *Specklinia* section *Acuminatae* (Luer, 1986), later referred to *Specklinia* Lindl. (Luer, 2004), and then reinstated by Pridgeon and Chase (2001). Luer (2006) proposed the genus *Panmorphia*, where he placed many species Pridgeon and Chase (2001) had referred to *Anathallis*, but then he later transferred *Panmorphia* to *Anathallis* (Luer, 2009). Karremans (2014) more recently segregated some 20 species of *Anathallis* to his new genus *Lankesteriana*, apparently more closely related to species in *Trichosalpinx* Luer and *Zootrophion* Luer than to *Anathallis*. *Lankesteriana* is not accepted in the latest published, comprehensive classification of Orchidaceae (Chase et al., 2015). Reading current publications on Pleurothallidinae, due to these constant changes, is not for the impatient or faint-of-heart. We hope that a stable system for this subtribe, covering perhaps one fifth of the species of Orchidaceae, will be presented in the near future.

Here we treat a small group of miniature, epiphytic Pleurothallidinae from the Venezuelan Guayana characterized by a creeping habit, with leaves usually appressed to (i.e.,

growing against or on top of) the substrate, and by short, successively few-flowered inflorescences, small flowers with free sepals, and a purple or yellow labellum.

The first species described in Venezuela was *Pleurothallis nanifolia* Foldats (Fig. 1), based on a collection from the Paragua river, Bolívar state.

Pleurothallis holstii Carnevali and I. Ramírez (Fig. 2) was described next, based on a collection from northwestern Bolívar state. This species, although undoubtedly referable to our current concept of *Anathallis* (Luer, 2009), differs significantly from *A. nanifolia* in its caespitose, erect habit.

Two additional species followed, *Pleurothallis deborana* Carnevali & I. Ramírez (Fig. 3) and *P. pemonum* Carnevali & I. Ramírez (Fig. 4), based on collections from the type locality of *A. holstii* and from near Puerto Ayacucho, Amazonas state, respectively. The latter two species were later placed, implicitly, although incorrectly, in the synonymy of *Anathallis holstii* (Luer, 2006, 2009).

A summary of the key to *Pleurothallis* in the Flora of the Venezuelan Guayana (Carnevali and Ramírez, 2003: 505–512), adding a few additional characters, can help us sort out this group of species. A magnifying glass or loupe will be needed to examine specimens *in vivo*, and obviously a dissecting microscope to examine rehydrated herbarium material:

- 1a. Plants long to shortly creeping, with leaves appressed to substrate, labellum dark red or purple, with or without side-lobes 2
1b. Plants caespitose to shortly creeping, but leaves erect, never appressed to substrate, labellum yellow, without side lobes *A. holstii*

We are grateful to Bruno Manara and the late G. C. K. Dunsterville for their artwork, to the staff of K, MO, NY, TFAV, and VEN for allowing access to their collections, to the Missouri Botanical Garden Press and the editor of *Ernstia* for granting permission to reproduce figures 2 and 3, respectively, and to P. Ormerod for his comments. GAR-G thanks the Orchid Society of Arizona for their generous financial support.

¹ Previous articles in this series were Romero-González and Batista (2009), Romero-González et al. (2010a), Romero-González et al. (2010b), Romero-González and Meneguzzo (2012), Romero-González et al. (2013a–b), Romero-González and Gómez (2014), and Romero-González et al. (2015).

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- 2a. Petals obovate to elliptic-obovate, broader than sepals; labellum with conspicuous side-lobes, apical portion conspicuously thickened *P. nanifolia*
- 2b. Petals elliptic or ovate-elliptic, acuminate, about as broad as the sepals; labellum with or without side lobes, the apical portion of labellum flat or recurved 3
- 3b. Labellum narrowly elliptic or narrowly ovate-elliptic, without side lobes, apex acute, flat *A. pemonum*
- 3a. Labellum narrowly obovate, with side lobes, apex concave, recurved *A. deborana*

NOMENCLATURE

Anathallis deborana (Carnevali & I. Ramírez) Carnevali & I. Ramírez, *comb. nov.* Fig. 2–3.

Basionym: *Pleurothallis deborana* Carnevali & I. Ramírez, Ann. Missouri Bot. Gard. 77(3): 553. 1990. TYPE: VENEZUELA. Bolívar: Municipio Cedeño, bosque al borde de sabana al este del río Parguaza, 125 km al norte de Puerto Ayacucho, collected by B. Holst and flowering under cultivation June 1987 and preserved *sub G. Carnevali and I. Ramírez 2317* (Holotype: VEN).

Distribution: Colombia and Venezuela, but most likely to be found in Brazil.

Additional specimen examined: COLOMBIA. Vaupés: Cerro La Campana, Summit about 800–1200 ft [244–366 m] above forest floor, 1700–2100 ft [518–640 m] above sea level, epiphyte, very xerophytic exposure, all flowers deep blood, 1–6 June 1943, *R. E. Schultes 5558* (AMES, SEL).

Eponymy: Named after Debora Carnevali-Ramírez, daughter of the authors of the species.

Iconography: Carnevali and Ramírez (1990; 2003: 523, Fig. 456, *sub Pleurothallis*).

The protologue clearly states that the plant on which the name was based was a “small creeping epiphyte, adpressed to substrate” with “...sepals... clear greenish yellow, maroon-tinged within,” the petals “...with the general coloration of the sepals but with a dark purple longitudinal central zone,” and the labellum “...fleshier than the other perianth segments, dark red-purple with a yellow longitudinal streak, the ventral [adaxial] surface finely papillose” (Carnevali and Ramírez, 1990). The described habit and color of the flower parts should easily distinguish it from *Anathallis holstii* (“creeping... adpressed to the substrate” versus “densely cespitose” and flowers greenish purple versus “greenish-yellow,” respectively).

The collection *Schultes 5558* listed above represents the first report of this species for the orchid flora of Colombia.

Anathallis holstii (Carnevali & I. Ramírez) Luer., Monogr. Syst. Bot. Missouri Bot. Gard. 115: 258. 2009. Fig. 4.

Basionym: *Pleurothallis holstii* Carnevali & I. Ramírez, Ernstia 39: 18. 1986. TYPE: VENEZUELA. Bolívar: “forest bordering savanna east of Río Parguaza, km 125 from northern alcabala of Puerto Ayacucho, epiphyte on *Parinari aff. excelsa*, flowers greenish yellow,” 8 September 1985, *J. A. Steyermark, B. Holst, B. Manara 131611* (Holotype: VEN; Isotype: MO).

Panmorphia holstii (Carnevali & I. Ramírez) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 105: 159. 2006.

Distribution: Apparently endemic to the Venezuelan Guayana, but most likely to be in neighboring Colombia.

Eponymy: Named after Bruce Holst, one of the collectors of the type material, who preserved part of the gathering in alcohol and made it available to the authors.

Iconography: Carnevali and Ramírez (1986, *sub Pleurothallis*); Carnevali and Ramírez (2003: 524, Fig. 457, *sub Pleurothallis*).

The protologue states that the plant is a “diminutive epiphytic herb... densely cespitose,” that the leaves are erect, and, from the holotype sheet label, the flowers are “greenish yellow.”

The holotype sheet at VEN also says “Epiphyte on *Licania*” and provides the following coordinates for the type locality: Lat. 6°17'N, Long. 67°5'W.”

Anathallis nanifolia (Foldats) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 115: 259. (2009). Fig. 1.

Basionym: *Pleurothallis nanifolia* Foldats, Bol. Soc. Venez. Ci. Nat. 22: 258 (1961). TYPE: VENEZUELA. Bolívar: woods bordering savanna by río Asa, above raudal Cotua, south of La Paragua, 300 m, creeping on living tree trunk, leaves fleshy-coriaceous, dull olive green above, paler below, ovary maroon, corolla wine purple, 1 August 1960, *J. A. Steyermark 86725* (Holotype: NY; Isotypes: AMES, US, VEN).

Homotypic synonyms: *Specklinia nanifolia* (Foldats) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 262 (2004).

Panmorphia nanifolia (Foldats) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 105: 169 (2006).

Anathallis nanifolia (Foldats) F. Barros & Barbarena, Rodriguésia 61 (1): 129 (2010).

Distribution: Brazil, Bolivia, Ecuador, and Venezuela, and most likely in neighboring Colombia.

Additional specimen examined: VENEZUELA. Amazonas: Municipio Autónomo Atures, Puerto Ayacucho, on branches of tree in fairly open rather scrubby forest on igneous hill near Cataniapo bridge, flower in Caracas December 1965, *G. C. K. Dunsterville 969* (AMES [both spirit collection and drawing]).

Etymology: From the latin *nanus*, a dwarf, and *folium*, leaf, referring to the very small leaves.

Iconography: Foldats (1961: 259; 1970: 350, *sub Pleurothallis*); Luer (1977: 349, *sub Pleurothallis*); Dunsterville and Garay (1976: 361; 1979: 797, *sub Pleurothallis*); Barros and Toscano de Brito (1985: 29, *sub Pleurothallis*); Romero and Carnevali (2000: 216, *sub Pleurothallis*); Luer (2006: 188, fig. 136, *sub Panmorphia*).

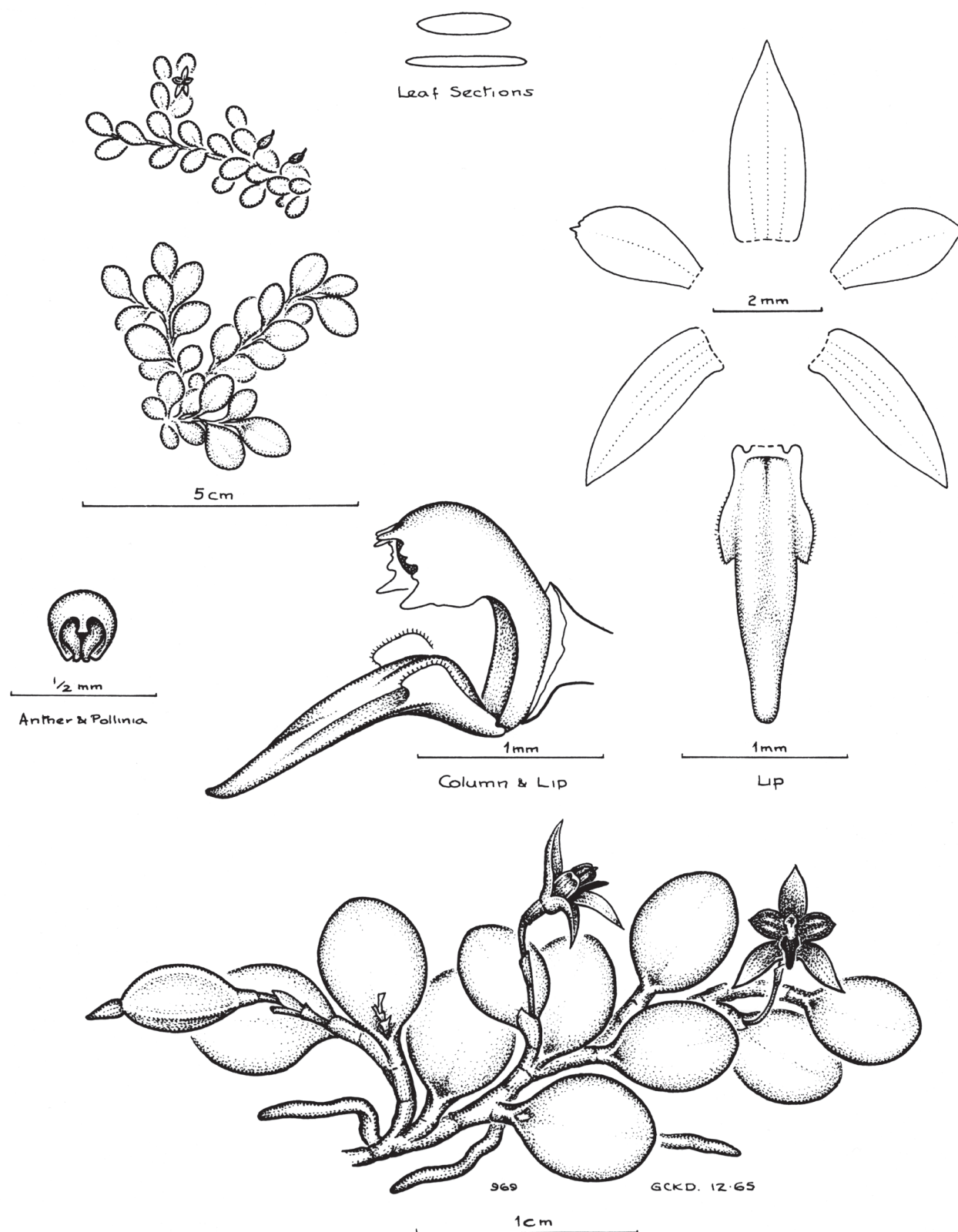


FIGURE 1. *Anathallis nanifolia* (Foldats) Luer. Drawing by G. C. K. Dunsterville based on *Dunsterville* 396 (reproduced from a photostat at AMES).

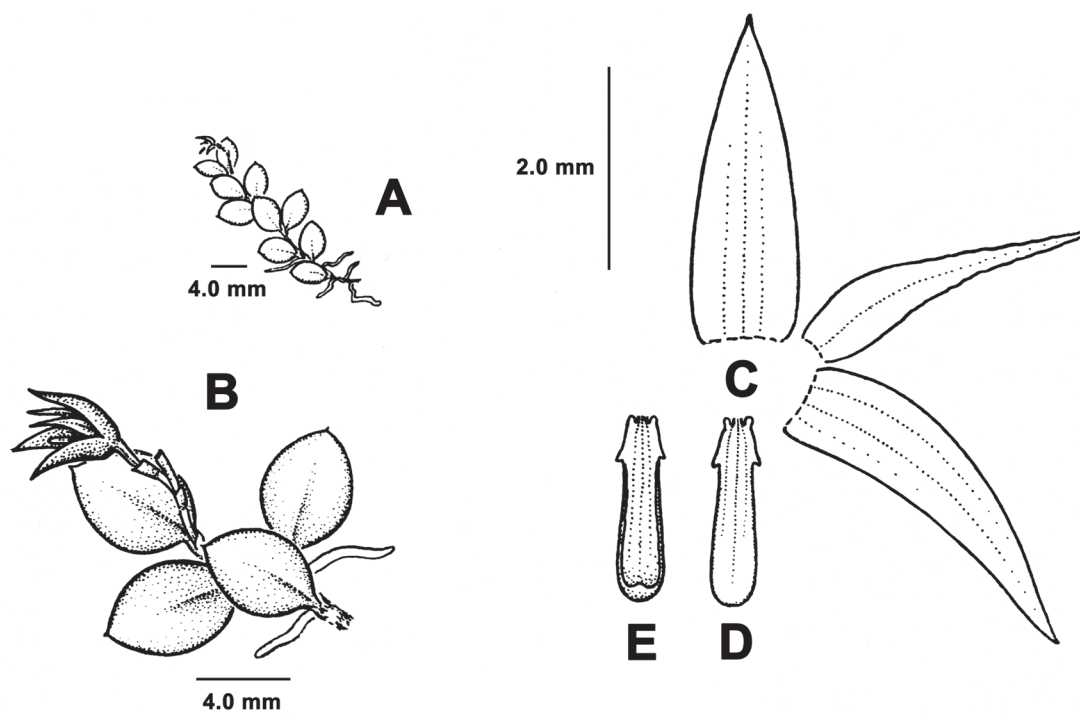


FIGURE 2. *Anathallis deborana* (Carnevali & I.Ramírez) Carnevali & I.Ramírez. **A**, habit; **B**, close-up of plant; **C**, floral diagram; **D**, adaxial side of the labellum, flattened; **E**, abaxial side of the labellum, flattened. Drawing by B. Manara courtesy of the Missouri Botanical Garden (first reproduced in Carnevali and Ramírez, 1990).



FIGURE 3. *Anathallis deborana* (Carnevali & I.Ramírez) Carnevali & I.Ramírez. Traces of the flower color are still discernable in this herbarium specimen preserved for over 70 years. Based on a small fragment of *R. E. Schultes* 5558 (AMES).

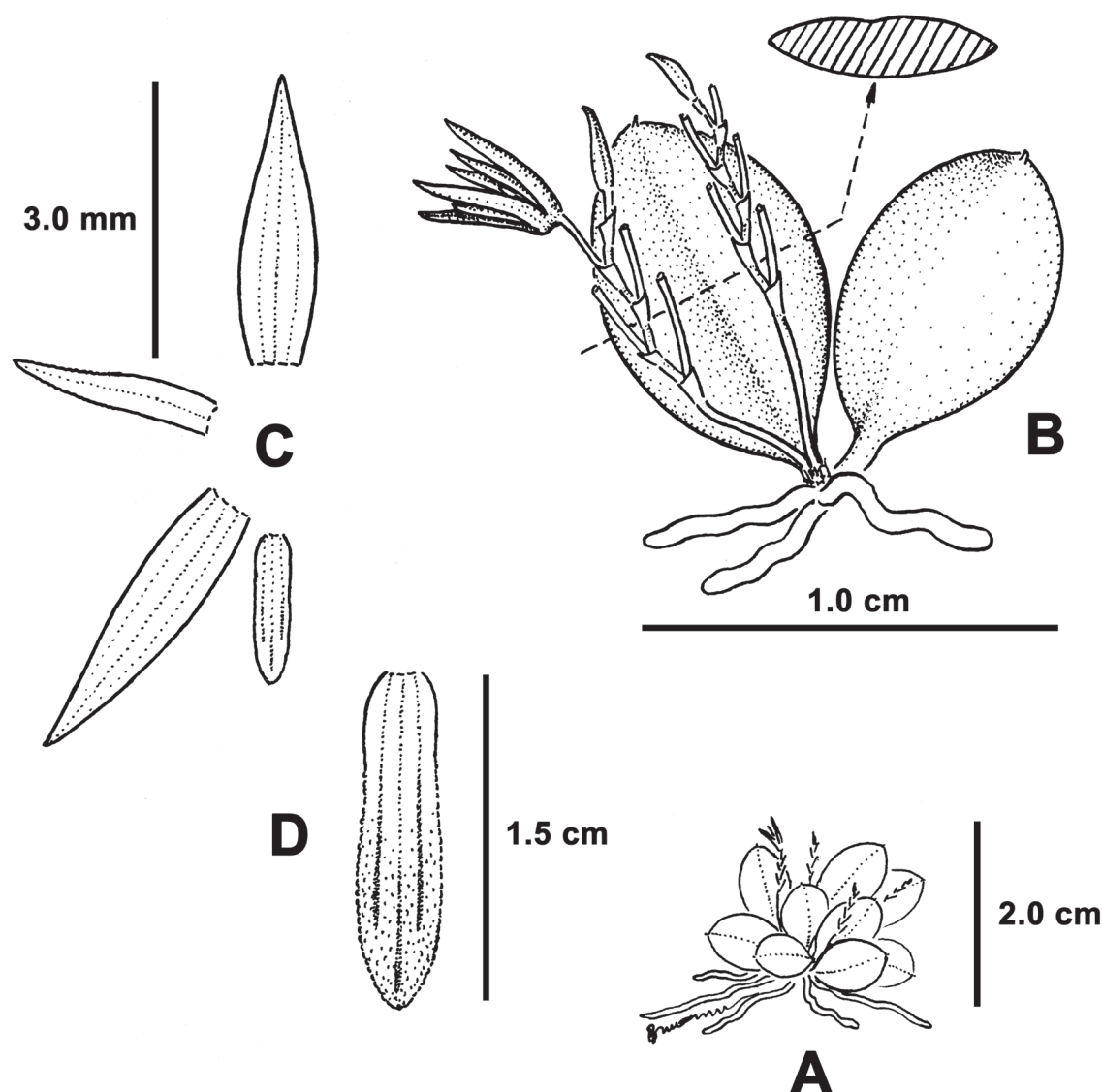


FIGURE 4. *Anathallis holstii* (Carnevali & I.Ramírez) Luer. **A**, habit; **B**, detail of the plant and a cross section of a leaf; **C**, floral diagram; **D**, detail of the labellum. Drawing by Bruno Manara courtesy of the editors of *Ernstia* (First reproduced in Carnevali and Ramírez. 1986).

According to Dunsterville, in unpublished notes kept at AMES, the "...sepals [are] lightly fleshy at the apex, dorsal sepal variably pale maroon or dark maroon-red, lateral sepals dark maroon.... Petals [are] pale pink with very dark maroon along mid-nerve... lip [is] ...about 0.4 mm across fleshy mid-lobe and 0.6 mm across ciliate lateral lobes. Disc and base also fleshy, the latter bearing two thin lobes. Dark purple throughout. Column cream with dark purple at the apex. Anther cream."

According to Foldats in the protologue of *Pleurothallis nanifolia* (1959: 260), "...el holótipo se encuentra en el herbario de New York Botanical Garden y un isótipo en Instituto Botánico, en Caracas," yet the sheet at VEN is labeled "Holotype" and the one at NY as "Isotype." Above, as far as the distribution of types is concerned, we follow what was stated in the protologue.

Despite its wide distribution, this species is apparently locally rare. One of the authors (GAR-G) lived for many years within a few kilometers of the locality where *Dunsterville* 969 was collected and never was able to find it despite countless hours spent searching trees in the area.

Anathallis pemonum (Carnevali & I.Ramírez) G.A.Romero, Carnevali & Toscano, *comb. nov.* Fig. 5.

Basionym: *Pleurothallis pemonum* Carnevali & I.Ramírez, *Ann. Missouri Bot. Gard.* 77: 555. 1990. TYPE: VENEZUELA. Amazonas: Municipio Atures, road Puerto Ayacucho–Gavilán, east of Fundo Doña Juana, June 1987, G. A. Romero, F. J. Guánchez & E. Gutiérrez 1334 (Holotype: VEN; Isotype: TFAV).

Distribution: Apparently endemic to the Venezuelan Guayana, but most likely to be found in neighboring Brazil, Colombia, and Guyana.

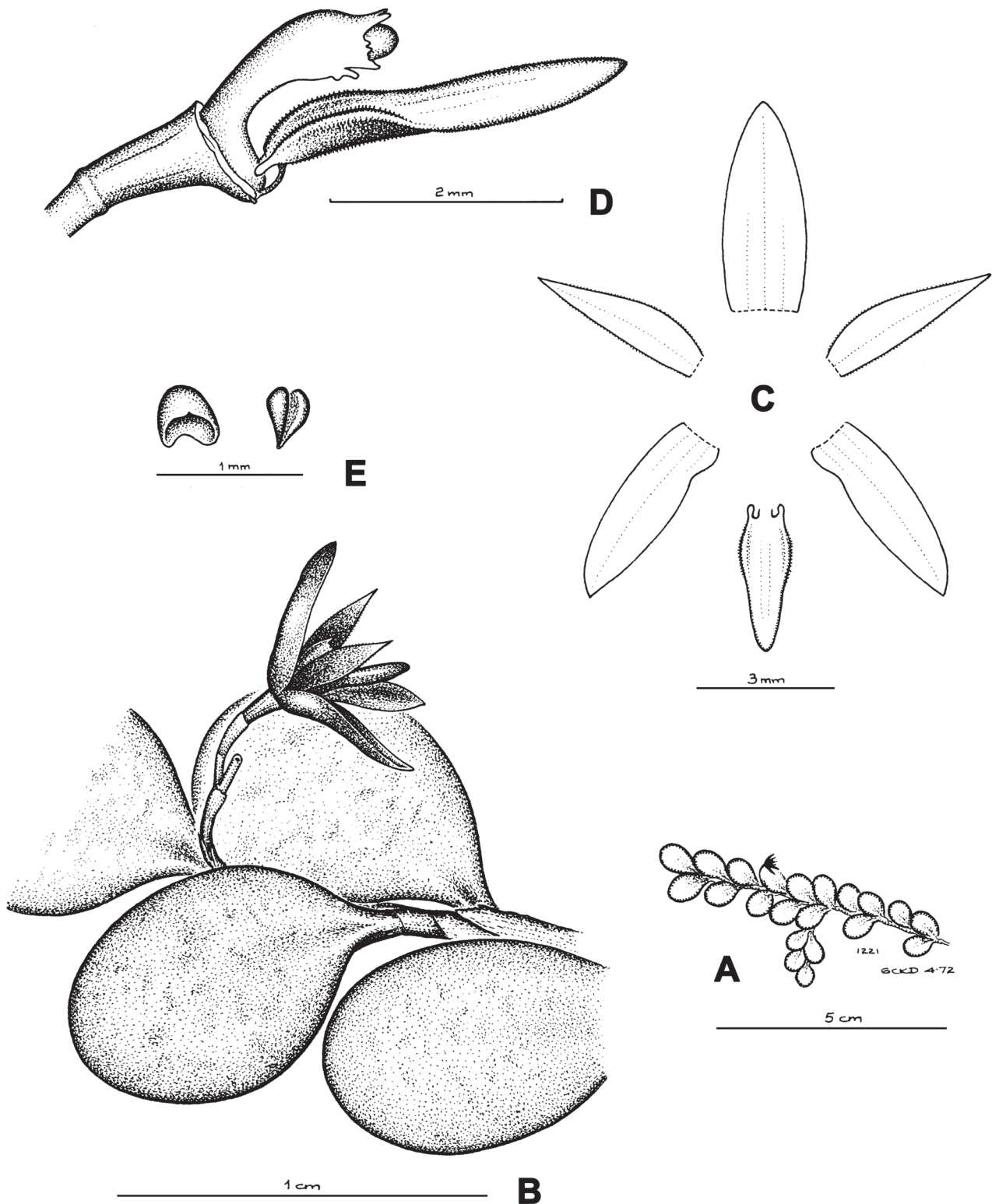


FIGURE 5. *Anathallis pemorum* (Carnevali & I. Ramírez) G. A. Romero, Carnevali & Toscano. **A**, habit; **B**, detail of plant with a flower; **C**, floral diagram; **D**, labellum and column; **E**, anther and pollinia. Drawing by G. C. K. Dunsterville based on *Dunsterville 1221* (reproduced from a photostat at AMES).

Additional specimens examined: VENEZUELA. Bolívar: selva virgen siempre verde a lo largo de la Quebrada Los Brasileros, 4.5 km al S de Icabarú, 4°20'N, 61°48'W, 480 m, “Creeping on *Licania* trunk (no. 117796),” 16 December 1978, J. A. Steyermark, V. Carreño Espinosa, & G. C. K. & E. Dunsterville 117784 (VEN); Río Carrao, near Orchid Island, in light forest at about 1500 ft. [457 m], April 1972, G. C. K. Dunsterville 1221 (SEL [four samples in spirit]), AMES [drawing]).

Eponymy: Named after the Pemón Indians, who live in part of the range of the species, the Gran Sabana region of Bolívar state, Venezuela.

Iconography: Carnevali and Ramírez (1990, *sub Pleurothallis*); Romero and Carnevali (2000: 823, *sub Pleurothallis*); Carnevali and Ramírez (2003: 523, Fig. 455, *sub Pleurothallis*); Luer (2006: 183, Fig. 120, as *Panmorphia holstii*, based on Romero-González and Carnevali Fernández-Concha, 2000: 823).

The holotype of this species was collected by one of the authors (GAR-G), growing on the bark of a rather tall specimen of *Parkia pendula* Benth. ex Walp. (Fabaceae), by far the tallest tree in the local forest. The enormous tree had been cut down during the process of clearing the forest

and planting poles to conduct electricity to the native Indian village of Gavilán. The plants were found growing in small patches, roughly 5–15 cm in diameter, found at ca. 15–20 m above ground. In cultivation, some of the patches, left to grow on the bark where they were found, eventually turned out to have two different species, *Anathallis pemonum* and *Octomeria romerorum* Carnevali & I. Ramírez.

According to G. C. K. Dunsterville, the plant illustrated in his drawing 1221 was “[e]piphytic, repent, occasionally branching,” and the flowers had “...sepals dark winy [sic] red externally, internally yellow with a strong pink flush, the apex yellow... petals ... dark winy [sic] red with yellow at the extreme apex, the margins finely very shortly ciliate,” the labellum “...lightly hinged... by a short white lamina; fleshy, red with a yellow stripe down the axis and a yellow apex. The very lightly developed lateral lobes bear short red hairs, the remainder of the surface is very finely muricate. The column was “dorsally red, the remainder pink. The anther was “...dark winy [sic] red.”

Anathallis pemonum appears to be closely related to *A. deborana*, but it can easily be distinguished using the key presented above, particularly by characters found in the labelum.

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