

FOUR NEW SPECIES OF *ERYTHRODES* FROM COSTA RICA AND PANAMA

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RESUMEN

Se describen *Erythrodes bimentata*, de flores grandes y espolón doble; *E. epiphytica*, parecida a *E. killipii* pero epífita, la planta más carnosa que *E. killipii*, las flores más cortas y el peciolo ancho; *E. roseoalba*, parecida a *E. maculata*, pero con el hipocilo estrecho, el epiquilo obcordado, el pedúnculo más largo, y el espolón más largo y estrecho; y *E. utriculata*, de flor pequeña, espolón grande, labelo subigualmente trilobado y viscidio escutiforme, estrecho.

In reviewing the Goodyerinae for the projected *Manual de la Flora de Costa Rica*, I find at least a dozen undescribed species in Costa Rica and Panama. In some cases the new species are to be described by others, and in other cases additional material or further study is needed. Ample material is at hand for two of the species to be described here, and the others are distinctive enough to be described from the available specimens.

Until recently, only two genera of Goodyerinae were recognized in the western hemisphere, *Erythrodes* Blume, with a distinct spur, and *Goodyera* Lindl., without a spur. Garay (1977) divided the American *Erythrodes* into several genera, of which five are known in Central America. *Erythrodes* in the narrow sense, like *Goodyera*, has a triangular rostellum that is deeply slit by the removal of the viscidium. *Aspidogyne* and *Kreodanthus* have longer columns and viscidia that leave shorter notches in the rostellum when removed, the shape of the rostellum varying somewhat in both groups. *Ligeophila* and *Platythelys* each have shield-like viscidia that cover the rostellar remnant. Many of the named species in Central America fit the segregate genera of Garay fairly well, but there are some intermediates, as noted by Carnevali and Dodson (1993). Further, some of the undescribed species are diffi-

cult to place in the segregate genera. A thorough revision of the complex will require a much broader study than I can undertake at this time, so I follow Carnevali and Dodson in treating all of the American Goodyerinae with spurs in *Erythrodes*.

Erythrodes bimentata Dressler, *sp. nov.*

Terrestris, foliis ellipticis, brevi-acuminatis, petiolatis; floribus grandibus, succesivis; sepalis elliptico-lanceolatis; labello ovato, apice reflexo. basi cum calcaribus conicis duobus.

Terrestrial; stem basally prostrate, then ascending, to 22 cm tall; leaves several, petioles ca. 3 cm long, basally sheathing, blades elliptic, short-acuminate, 7-9 x 2.8-3.6 cm; inflorescence terminal, 10-20 cm, flowers successive; scape bracts tubular; floral bracts lanceolate to elliptic-lanceolate, 8-12 x 3-6 mm, crisped puberulent; ovary and pedicel ca. 15 mm, crisped puberulent; sepals 8-9 mm, dorsal sepal lanceolate, ca. 2.8 mm wide, lateral sepals elliptic-lanceolate, ca. 4.5 mm wide; petals adherent to dorsal sepal, ca. 9 x 2 mm; lip 8.5-9 x ca. 10 mm, united to column for ca. 3 mm, basally with 2 conic spurs ca. 4.5 x 2.5 mm, concave, apical lobe ca. 2 x 3 mm, reflexed.

TYPE: COSTA RICA: PUNTARENAS: Mon-

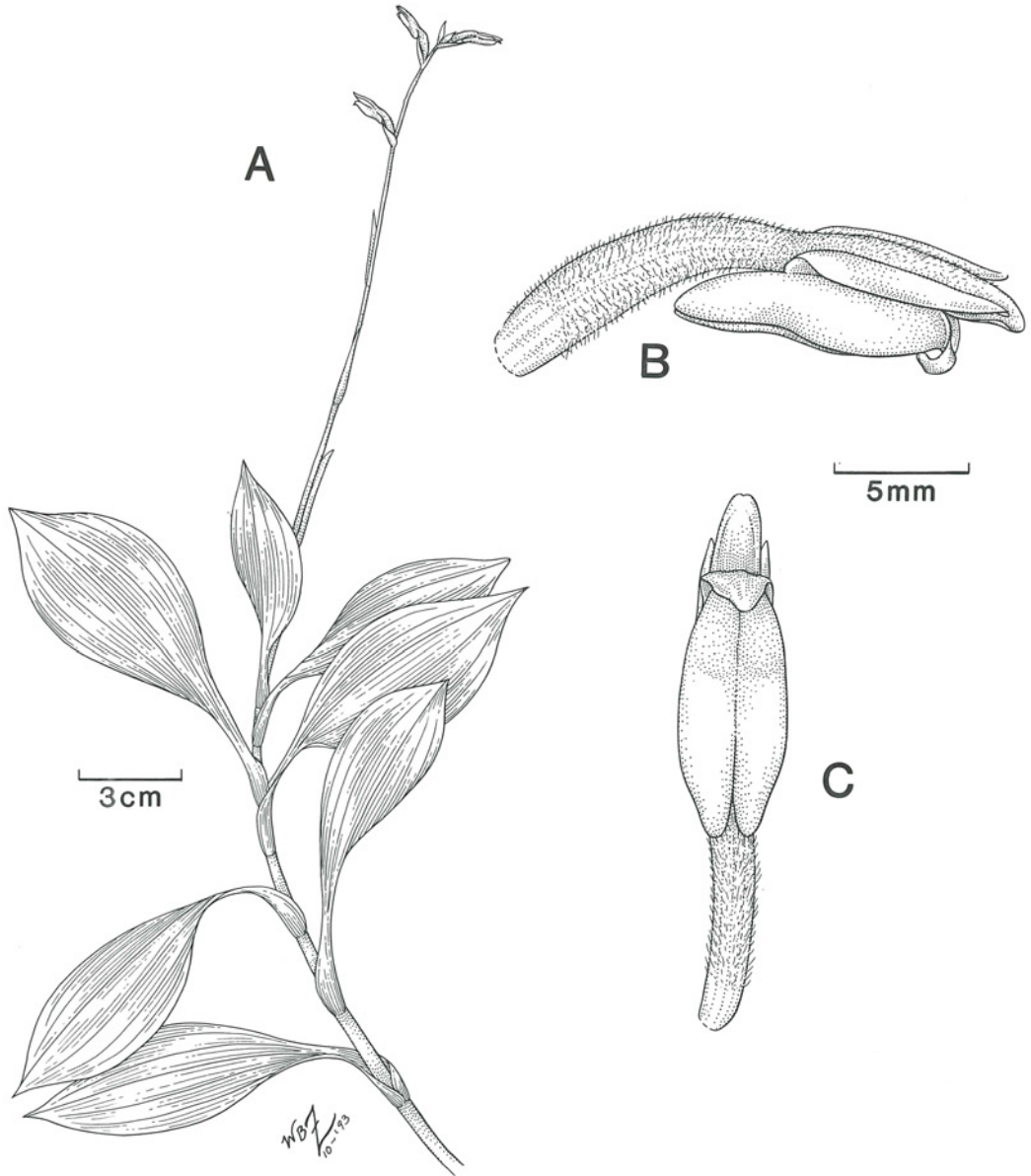


Figure 1. *ERYTHRODES BIMENTATA*. A. Habit. B. Lateral view of flower. C. Ventral view of flower. Drawn from the holotype.

teverde, Reserva, Vert. Pacifica; bosque primario en orilla del pantano Chomogo; flores blancozco y verde claro (poco rosada hacia la boca); 1600-1620 m; 10/6/76; *V.J. Dryer 809* (CR).

OTHER COLLECTIONS SEEN: Chomogo Trail; terrestrial herb, 0.4 m tall, forest/trail. Sepals green, lip pinkish green; 2-lobed nectar spur; 10 November 1989; *W. Haber & W. Zuchowski 9577* (CR).

This species, a member of *Erythrodites* in the narrow sense, is distinctive in the large flower and the presence of two conic spurs. In spite of intensive collecting in Monteverde area by Bello, Dryer, Haber and others, I have seen only two collections, suggesting that the species is infrequent. Further, the fleshy flowers are badly damaged by pressing, so that only the type collection has more or less useable flowers.

Erythrodites epiphytica Dressler, *sp. nov.*

Epiphytica, recta; foliis ellipticis, acutis; petiolo lato; inflorescentiis dense multifloris; sepalis oblongis; petalis oblanceolatosubspatulatis; labello basi concavo, angustato, apice transverse oblongo, apiculato; calcare angusto.

Epiphytic, leafy stem 10-20 cm; leaves several, elliptic, acute, petioles 4-6 cm long, up to 1.2 cm wide, blades 6.5-14 x 2.5-5.7 cm; inflorescence 15-30 cm, densely flowered in the upper half, inflorescence bracts narrow, tubular, decreasing in size from base of inflorescence, 2-5 x 1.4 cm; ovary densely glandular-pubescent; floral bracts lanceolate 8-12 x 1.5 mm; sepals sparsely glandular-pubescent, oblong, 3.5-4.5 mm long, laterals ca. 1.2 mm wide, dorsal ca. 1.5 mm wide; petals oblanceolate-subspatulate, apices adherent, connivent with dorsal sepal, ca. 3.5 x 1 mm; lip ca. 4 mm long, hypochile ca. 2.5 mm long, basally 2.2 mm tapering to ca. 1 mm, epichile ca. 1.6 mm wide, 0.8 mm long, apiculate, short-hispid; spur 2.5-3 mm long; column ca. 2.3 mm long.

TYPE: PANAMA: COCLE: Hills N of El Valle de Antón, 12 May 1973; epiphytic, flowers white, green within and basally, *R.L. Dressler 4383* (holo. MO, iso. PMA).

OTHER COLLECTIONS SEEN: COSTA RICA: LIMON: Parque Internacional La Amistad, Quebrada Crori, Croriña, 9°25'15"N, 82°58'00"W, 600 m, epifita de unos 0.60 m, flores blancas, *A. Chacón 241* (CR); path beyond Río Sucio, Braulio Carrillo, 400 m, 4 May 1984, *L.D. Gómez, I. Chacón y G. Herrera 21203* (CR); Río Palomo, near Turrialba, fld. in cult. 13 July 1993, *R.L. Dressler 6151* (FLAS).

This species is a member of *Erythrodites* in the narrow sense. Herbarium specimens may be confused with the common *E. killipii* and especially with the larger-leaved forms of central Panama. *Erythrodites epiphytica* is easily distinguished, however, by the more succulent stem and leaves, by the shorter, more densely clustered flowers, and especially by the broad, indistinct petiole. This is the *Erythrodites* illustrated by Rafael Lucas Rodríguez (Rodríguez *et al.*, 1986). The plant is easily cultivated if treated as an epiphyte in a hanging basket where it is not readily accessible to snails or slugs.

Erythrodites rosealba Dressler, *sp. nov.*

Terrestris; foliis lanceolatis vel ovato-lanceolatis, acutis; inflorescentiis longe pedunculatis; sepalis anguste oblongis vel oblongo-lanceolatis; petalis sepalo postico conniventis; labello basi concavo, angusto, apice orbiculato vel obcordato, apiculato; calcare angusto.

Terrestrial, 10-20 cm tall; leafy stem-6 cm; leaves several, lanceolate or ovate-lanceolate, acute, petioles 5-11 mm, basally clasping stem, blades 2-3.8 x 0.6-1.2 cm; inflorescence 4-17 cm tall, with flowers on upper 3-4 cm, lowest scape bract may be foliaceous, to 22 x 4 mm, others infundibuliform, acute, 6-7 x ca. 4 mm, peduncle and rachis sparsely pubescent; sepals narrowly oblong or oblong-lanceolate, apex rounded, 3.8-5 mm long, laterals 1-1.2 mm wide, dorsal 1.4-1.5 mm wide; petals connivent with dorsal sepal, ca. 4 x 1 mm; lip 4.8-5 mm long, the hypochile basally 1.8-2 mm wide, narrowing to 1.5-1.8 mm, ca. 2.5 mm long, epichile orbicular or subobcordate, apiculate, 2-2.5 mm long, 2-3 mm wide; spur 2.7-3.5 mm long, ca. 1 mm in diam.; column ca. 1.6 mm long.



Erythrodes roseoalba, photograph of type collection.

Erythrodes epiphytica, two open flowers of a small inflorescence, from Río Palomo, near Turrialba.



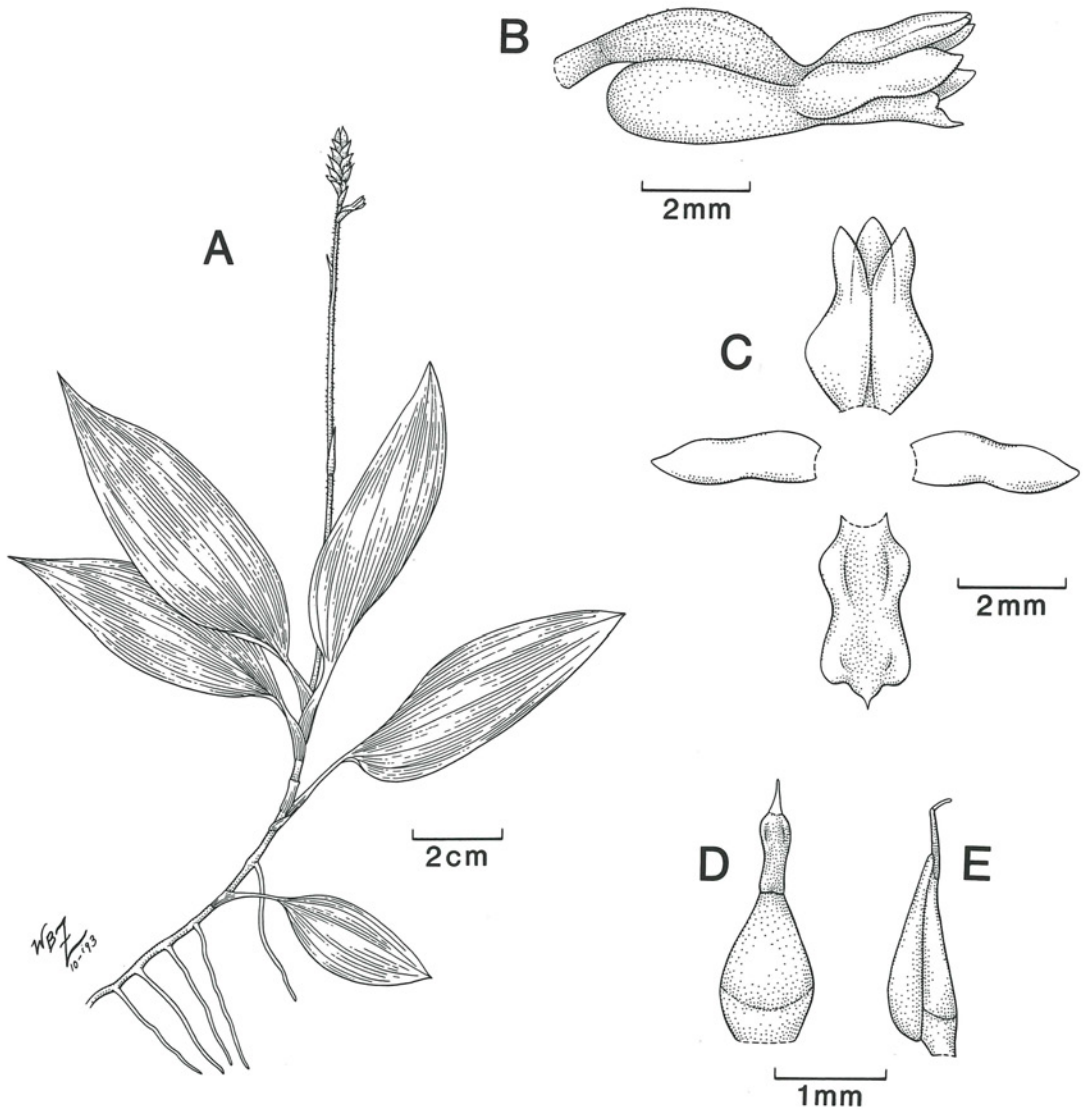


Figure 2. *ERYTHRODES UTRICULATA*. A. Habit. B. Lateral view of flower. C. Perianth parts, flattened. D. Ventral view of column. E. Lateral view of column. Drawn from the holotype.

TYPE: PANAMA: VERAGUAS: Ridge east of Cerro Tute [actually C. Arizona], NW of Santa Fé, elev. 1000-1200 m; 30 October 1977; leaves black-green with silver vein above, reddish beneath, inflorescence and lower sepals pink-red, midlobe of lip and distal halves of lateral sepals white, distal halves of petals white with pink margins, *R.L. Dressler 5736* (holo. MO).

OTHER RECORDS: Cerro Tute, NW of Santa Fé, 10, 11 October 1976; leaves dark red-green with silver-green midrib; sepals red-pink, lip cream, *R.L. Dressler 5526* (FLAS); Cerro Tute, W slope, forest, alt 1000-1200 m, terrestrial orchid, stem pinkish, upper side of leaves dark green mixed with pale green, sepals and petals pink with white tips, lip cream, 23 Oct. 1980, *R.L. Dressler and P.J.M. Maas 5959* (SEL). COSTA RICA: ALAJUELA: La Palma de San Ramón, alt. 1275, 18 IX 1924, *A.M. Brenes (220) 2311* (AMES); Balsa de San Ramón, alt. 1100-1200 m, *A.M. Brenes (45) 1525* (AMES).

Erythrodes roseoalba is related to *E. (Platythelys) maculata*, but it is easily distinguished from that, and from *E. vaginata*, by the narrow hypochile of the lip, by the shape of the epichile, which is clearly 3-lobed in the other species, by the long peduncle, and the narrower spur.

Erythrodes utriculata Dressler, *sp. nov.*

Terrestris, foliis lanceolato-ovatis, acuminatis, petiolatis; inflorescentiis pedunculatis; sepalis et petalis oblongo-lanceolatis; labello apice subequaliter trilobato, calcaris magno, inflato.

Terrestrial; leafy stem ca. 4 cm. Leaves ca. 5, petioles 1.5-2 cm, blades lanceolate-ovate, acuminate, 4-8 x 1.7-3.7 cm, basally broadly cuneate to subcordate. Inflorescence ca. 13 cm (probably becoming much longer), peduncle ca. 10 cm; floral bracts papery, ellip-

tic-ovate, acuminate, 5-6 x 3 mm; sepals oblong-lanceolate, 3-3.3 x 1.3-1.5 mm, petals connivent with dorsal sepal, oblong-lanceolate, subdolabriform, 3 x 1 mm; lip ca. 3.5 mm, hypochile basally 1.5 mm wide, tapering to 1.3 mm, epichile 1.6 mm wide, subequally 3-lobed, the lobes rounded, papillose, midlobe apiculate; spur 3.5 x 1.5 mm, inflated; column ca. 2 mm; viscidium narrow, shield-like.

TYPE: COSTA RICA: LIMON: Cantón de Talamanca, Fila de Exploración minera entre Río Sukut y Río Carbri; Muragubishi. 9°22'50"N, 82°56'50"W, 700 m; terrestre, follaje de haz variegado, márgenes verdes; inflorescencia café liláceo; flor de cáliz verde café; labelo blanco; columna anaranjada de ápice blanco; *G. Herrera 3245* (SEL, two duplicates probably to be deposited in CR and MO).

This species is distinctive in the relatively small flowers with large saccate nectary (whence the epithet); the lip is subequally 3-lobed. The narrow, shield-like viscidium suggests that this is a member of the *Platythelys* group, though the lip is only slightly constricted below the "epichile".

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