

NEW TAXA AND NOTES ON HELICONIA (HELICONIACEAE)

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ABSTRACT. Two new species of *Heliconia* from Panama are described (*H. cucullata* and *H. faunorum*), one new combination is made (*H. monteverdensis* var. *vulcanicola*) and a neotype for *H. marmoliana* is selected.

Members of the genus *Heliconia* are a conspicuous component of neotropical lower and middle elevation forests. Many new taxa from Central America (e.g., Daniels & Stiles, 1979; Kress, 1986) and South America (e.g., Andersson, 1985) have been described during the last ten years. I estimate that there are nearly 300 neotropical taxa in the genus with about 65 species occurring in Mesoamerica. The two new Panamanian taxa described here increase the number of species reported from that country to 45 (D'Arcy, 1987; Kress, unpubl.). An annotated checklist with keys to the heliconias of Panama is currently in preparation.

In conjunction with Professor Lennart Andersson (Department of Systematic Botany, University of Göteborg, Sweden), the taxa of *Heliconia* treated here have been studied in their natural states in the field. The descriptions are based on living collections supplemented with information from herbarium specimens. Terminology follows that of Kress (1984).

Heliconia cucullata Kress & L. Andersson, sp. nov. FIGURE 1.

Planta herbacea, habitu subcannoideo, 1.0-1.5 m alta; inflorescentia recta; rhachis rubro-crocea, glabra; cincinnorum bractae rubro-croceae, glabrae, 4.5-5 cm longae, spiraliter dispositae, marginibus revolutis praeditae; perianthium rectum, 4.5-5 cm longum, tubo 2-3 mm longo, sepalis libro cucullato.

TYPE. Panama, Bocas del Toro, 15 km from Chame Copper Mine Camp, below Cerro Colorado, 1,600 m, 20 June 1986, *Kress, Luther, Besse & Halton 86-1921* (SEL, holotype; US, isotype).

Herb with *Musa*- to *Canna*-like habit, 1-1.5 m tall. Leafy shoots in groups of 1 to 2; pseudostem green, glabrous, 40-50 cm tall, 1-2 cm in diameter; leaves 4-5 per shoot; longest petiole green, glabrous, 12-17 cm long, 4-5 mm in diameter; blade with base subattenuate, the apex acuminate, the upper surface dark green, gla-

brous, with midrib green and glabrous, the lower surface light green, glabrous, with midrib light green and glabrous, the longest blade 35-45 cm long, 8-13 cm wide. Inflorescence erect, to 12 cm in height (excluding peduncle); peduncle green with red spots, glabrous, 8-12 cm long, 4-6 mm in diameter; rachis flexuose, red-orange, glabrous, 6-8 mm in diameter at base; cincinnal bracts spirally arranged, 4 to 5 per inflorescence, oriented 70° to axis of inflorescence, the basal bract usually sterile, the middle bract with the acuminate apex subcircinate, margins revolute, inner surface yellow with red margins and glabrous, outer surface red-orange and glabrous, 6-7 cm long, 4.8-5.2 cm wide at base, length/width = 1.3. Floral bracts translucent, persistent, pale yellow, glabrous abaxially, 2.5-3 cm long, 1-1.3 cm wide at base. Flowers 5 to 7 per cincinnus; pedicel yellow green, glabrous, 3-5 mm long; perianth yellow, glabrous, 4.5-5 cm long, 8-10 mm wide at base, at anthesis curved 10°; free sepal cucullate, straight, fused sepals with apices not reflexed; staminode white, 9-10 mm long, 3 mm wide, fused to perianth tube 2-3 mm above base, apex trilobed with central acuminate tooth longer than rounded lateral lobes; anthers connivent inside apex of corolla tube; ovary green, glabrous, 6-8 mm long, 5-6 mm wide. Drupes not seen.

SPECIMENS EXAMINED. Panama. BOCAS DEL TORO/CHIRIQUÍ: vicinity of Cerro Colorado, 920-1,700 m, *Kress, Luther, Besse & Halton 86-1941* (SEL); *Croat 37265* (GB); *Folsom 6116* (MO); *Sullivan 372* (MO). CHIRIQUÍ: Cerro Pate Macho NE of Boquete, N slope along trail to Finca Serrano, 1,500 m, *Andersson & Sytsma 1312* (GB, s).

PHENOLOGY. Flowering in the rainy season.

HABITAT AND DISTRIBUTION. *Heliconia cucullata* occurs on slopes in the understory of middle elevation cloud forests along the continental divide in Chiriquí and Bocas del Toro, Panama.

RELATIONSHIPS. The erect inflorescences with spirally arranged bracts and non-resupinate flowers places this species in sect. *Tortex* L. Anderss.

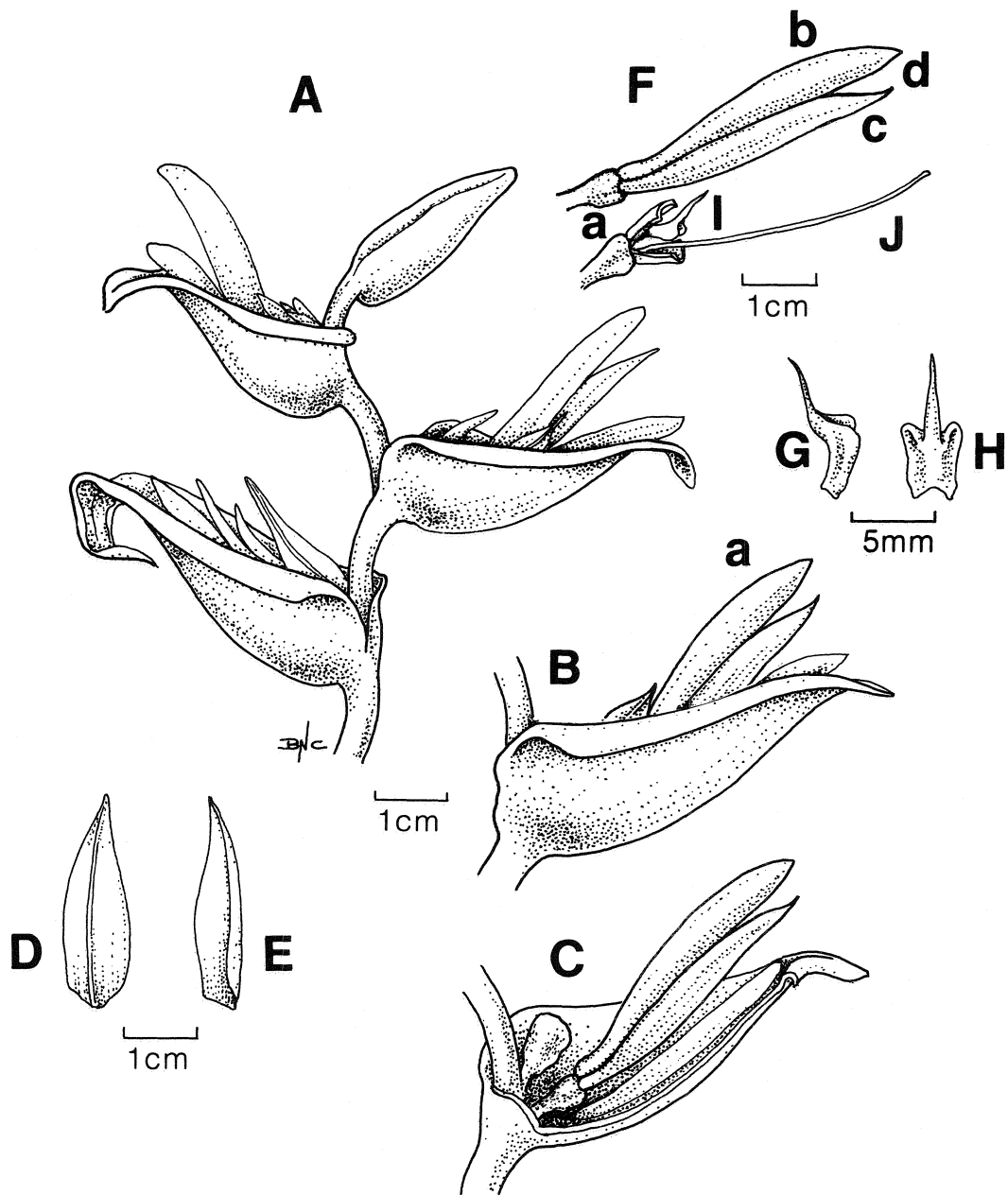


FIGURE 1. *Heliconia cucullata*. A, inflorescence. B, C, cincinnal bracts: B, entire (Ba, flower protruding at anthesis); C, cut-away, floral bracts removed showing flower at anthesis. D, E, floral bracts: D, abaxial view; E, lateral view. F, flower at anthesis, entire (Fa, ovary; Fb, free cucullate sepal; Fc, fused sepals; Fd, anthers, included in apex of corolla tube). G-I, staminodes: G, lateral view; H, abaxial view; I, inserted on perianth tube. J, style and stigma.

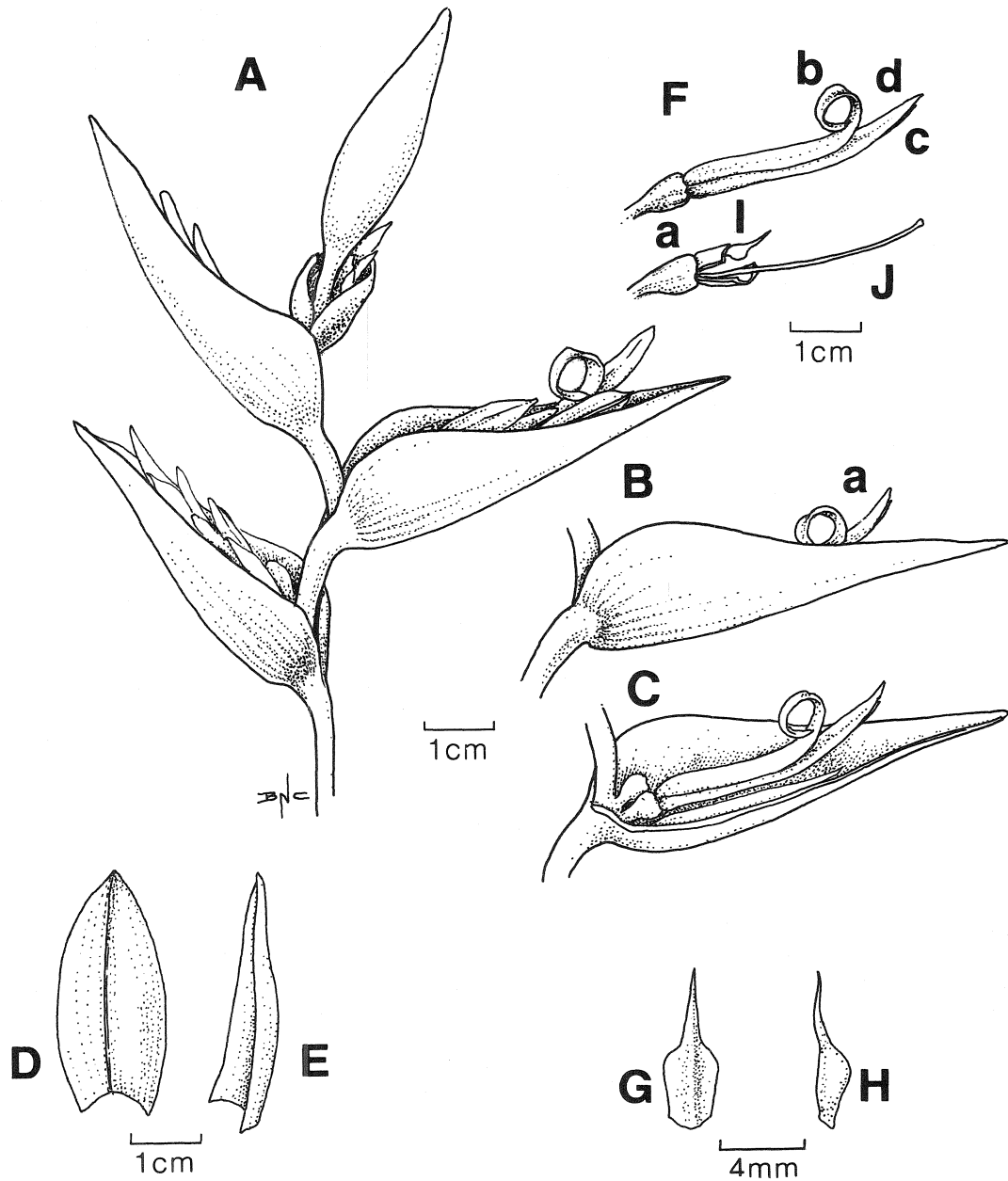


FIGURE 2. *Heliconia faunorum*. A, inflorescence. B, C, cincinnal bracts: B, entire (Ba, flower protruding at anthesis); C, cut-away, floral bracts removed showing flower at anthesis. D, E, floral bracts: D, abaxial view; E, lateral view. F, flower at anthesis, entire (Fa, ovary; Fb, free sepal; Fc, fused sepals; Fd, anthers, included in apex of corolla tube). G-I, staminodes: G, abaxial view; H, lateral view; I, inserted on perianth tube. J, style and stigma.

The distinctive hooded free sepal distinguishes *H. cucullata* from any other species in that section.

Heliconia faunorum Kress & L. Andersson, sp. nov. FIGURE 2.

Planta herbacea, habitu musoideo, 1.5–2.0 m alta; inflorescentia recta; rhachis rubra, glabra; cincinnorum bracteae rubro-croceae, glabrae, spiraliter dispositae, marginibus strictis praeditae; perianthium in basem album apicem versus sublutescens, glabrum, 3.5–4.0 cm longum.

TYPE. Panama, Veraguas, slopes below Cerro Tute, 1,100 m, 20 March 1982, *Kress & Knapp 82-1412* (SEL, holotype; DUKE, isotype).

Herb with *Musa*-like habit, 1.5–2 m tall. Leafy shoots in groups of 4 to 10; pseudostem green, glabrous, 70–80 cm tall, 1–1.5 cm in diameter; leaves 3 to 4 per shoot; longest petiole dark green, glabrous, 28–33 cm long, 3–5 mm in diameter; blade with base truncate, the apex acuminate, the upper surface dark green, glabrous, with midrib green and glabrous, the lower surface green, glabrous, with midrib light green and glabrous to scurfy, the longest blade 40–50 cm long, 9–11 cm wide. Inflorescence erect, to 15 cm in height (excluding peduncle); peduncle green becoming red near basal bract, glabrous, 14–20 cm long, 5–6 mm in diameter; rachis flexuose, red, glabrous, 4–5 mm in diameter at base; cincinnal bracts spirally arranged, 5 to 6 per inflorescence, oriented 60–70° to axis of inflorescence, the basal bract usually fertile, the middle bract with apex subacuminate, margins straight to slightly undulate, inner surface red with yellow midrib and glabrous, outer surface red orange and glabrous, 6–8 cm long, 4–5 cm wide at base, l/w = 1.5. Floral bracts translucent, persistent, yellow, conspicuous, glabrous abaxially, 3.5–4 cm long, 2 cm wide at base. Flowers 8 to 10 per cincinnus; pedicel white, glabrous, 2–4 mm long; perianth white basally to pale yellow apically, glabrous, 3.5–4 cm long, 5–6 mm wide at base, at anthesis curved 60°; free sepal rolled, fused sepals with apices not reflexed; staminode white, 7–8 mm long, 3 mm wide, fused to perianth tube 2–4 mm above base, shallowly lobed with acuminate apex; anthers connivent within apex of corolla tube; ovary pale yellow, glabrous, 5–7 mm long, 5–7 mm wide. Drupes not seen.

SPECIMENS EXAMINED. **Panama.** CHIRIQUI: Cerro Colorado, 1,500 m, *Antonio 1493* (MO, SEL), *Mori & Dressler 7761* (MO). VERAGUAS: Cerro Tute, 800–1,300 m, *Andersson & Sytsma 1280* (s), *Hamilton & Knapp 3915* (GB), *Hamilton & Krager 3915* (MO), *Knapp & Dressler 5458* (GB), *Kress 80-1184* (SEL), *Maas & Dressler 4956* (GB), *McPherson 10736* (MO), *Mori, Bolten & Dressler*

7611 (GB); 6.4 km N of Santa Fe, *Folsom 2960* (GB, MO), *Liesner 1017* (MO).

PHENOLOGY. Flowering at the end of the dry season and into the first part of the wet season from March to August.

HABITAT AND DISTRIBUTION. *Heliconia faunorum* inhabits the understory of cloud forests between 800 and 1,200 m on Cerro Tute in Veraguas, Panama.

RELATIONSHIPS. This species is closely related to *Heliconia monteverdensis* Daniels & Stiles of Costa Rica in sect. *Tortex*, but can be distinguished from that species by the longer (3.5–4 cm vs. 2.5–3 cm), slenderer flowers.

Heliconia marmoliana Dodson & A. Gentry, Selbyana 2: 294.

TYPE. Ecuador, Pichincha, junction of the Rio Chigupe and Rio Baba, 450 m, 24 May 1975, *Dodson 6064* (SEL, holotype; RPSC, isotype).

NEOTYPE. Ecuador, Pichincha, Centinela Ridge above Rio Palenque, 660 m, 19 February 1988, *Kress, Luther, Roesel & Carle 88-2275* (SEL, neotype; QCNE, isotype).

Dodson and Gentry (1978) indicated that the holotype and isotype of *Heliconia marmoliana* were deposited at the Marie Selby Botanical Gardens (SEL) and Rio Palenque Science Center (RPSC), respectively. However, no such specimens have been found at either of these institutions. Examination of specimens at the Missouri Botanical Garden (MO), Museo Nacional de Ciencias Naturales, Quito (QCNE), and Pontificia Universidad Catolica del Ecuador (QCA) also have not turned up the designated types. The types apparently have been misplaced or lost. A neotype of *H. marmoliana* collected in the same locality as the original material is selected here.

As indicated by Andersson (1985) there is little doubt that *Heliconia marmoliana* is a later synonym for *H. reticulata* (Griggs) Winkl., a species originally collected in Costa Rica. This species is uncommon in low to middle elevation forests but is widely distributed in Costa Rica, Panama, Colombia and Ecuador. The material in Ecuador is interesting in that the normally distichous cincinnal bracts are spirally arranged in some specimens (e.g., ex hort Selby Gardens, *Kress 87-2139* [SEL]). Except for the report by Dodson and Gentry (1978), there is no evidence that the inflorescences of *H. reticulata* are produced on a separate shoot from the foliage, as is common in *H. metallica* Pl. & Lind. ex Hook. and *H. hirsuta* L. f.

***Heliconia monteverdensis* var. *vulcanicola* (Stiles)**
Kress, comb. et stat. nov.

H. vulcanicola Stiles, Brenesia 18: 148. 1980. TYPE:
Costa Rica, Provincia de Guanacaste, 1,360 m
on N. slope Volcan Orosi, *Stiles 79-1* (USJ, ho-
lotype; CR, F, US, isotypes).

In his original description and discussion of *Heliconia vulcanicola*, Stiles (1980) noted the similarity of this species to *H. monteverdensis* Daniels & Stiles and suggested that the taxonomic status of these sister taxa "may have to be reassessed." The main differences between the two taxa is in color and relative size: *H. monteverdensis* with red bracts and slightly larger overall dimensions than the yellow bracted *H. vulcanicola*. Other species of *Heliconia*, such as *H. lankesteri* Standley, *H. gracilis* Daniels and Stiles, and *H. tortuosa*, found in montane habitats in Central America exhibit similar geographic variation in color and size. For this reason *H. vulcanicola* is recognized as a variety of *H. monteverdensis*.

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