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BLAKEA COSTARICENSIS (MELASTOMATACEAE): A REMARKABLE NEW EPIPHYTE FROM SOUTHEASTERN COSTA RICA

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ABSTRACT. *Blakea costaricensis,* a new species from southeastern Costa Rica is described, illustrated, and compared with *B. brunnea,* another large-flowered species from western Panama. In addition to its striking large flowers, the new species is notable for its puncticulate leaves, conspicuously lobed floral bracts, and calyptriform calyx.

Blakea, a genus of approximately 100 species, is widely distributed in lowland and montane forests from southern Mexico (Chiapas), Central America, and the West Indies south to Bolivia and Brazil. Among the berry-fruited neotropical Melastomataceae, *Blakea* P. Browne and the closely related genus *Topobea* Aublet of the tribe Blakeeae are unique in that the majority of their species are epiphytes or hemiepiphytes (Kress, 1986; Renner, 1986). Fifteen species of *Blakea* and fourteen species of *Topobea* were collectively listed by Standley (1938) and Gleason (1958) in their floras of Costa Rica and Panama respectively. Since that time, many new species in the Blakeeae have been described from this small isthmian region (Almeda, 1974, 1980, 1981, 1984, 1989, 1990; Williams, 1964) and several others await formal description pending collections of complete material. Although the Blakeeae have their center of diversity in northwestern South America, Costa Rica and Panama, with over 50 species, constitute an important secondary center of radiation.

In this paper we describe a new *Blakea* with remarkably large flowers that measure 10–11 cm across when fresh. Like many members of the tribe described in the last decade, *B. costaricensis* appears to be an endemic of local distribution.

Blakea costaricensis Umaña & Almeda, sp. nov. FIGURE 1.

Frutex epiphyticus. Petioli 2.3–3.5 cm longi; lamina 14.3–21.2 × 9.5–13 cm elliptico-ovata, apice abrupte acuminata basi obtusa ad maturitatem coriacea et glabra, supra et subtus modice puncticulata 5-nervata vel 5-plinervata, nervis secundariis 2–5.5 mm inter se distantibus. Flores 6-meri in quoque nodo superiore singuli, pedicellis 1–1.7 cm longis; bracteae omnino coalitae rigidae; bracteae exteriores 2.6–3.1 cm longae, lobis 0.5–1.2 × 1–2.2 cm triangularibus; bracteae interiores 2.2–2.9 cm longae, lobis 0.5–1.1 × 0.9–2.2 cm. Hypanthium (ad torum) 2.4–2.7 cm longum; calyx calyptriformis 1.7–2.2 cm longus. Petala glabra 3.5–4.4 × 4.2–4.6 cm obovata apice retuso. Filamenta 14 mm longa; antherae 9.5–10 × 6–7 mm inter se non cohaerentes, ventraliter biporosae; connectivum ad basim dorsaliter inconspicue (0.5 mm) bilobulato-prolongatum. Stylus 2.8 cm; ovarium inferum cono ca. 2–2.5 mm alto glabro apice truncato (collo non evoluto).

TYPE. Costa Rica. Limón: Valle de la Estrella, Fila Matama, El Progreso. 9°47′20″N 83°07′30″W, elev. 1,600 m, 24 April 1989, *Herrera & Chacón 2758* (CR!, holotype; CAS!, COL!, F!, K!, MEXU!, MO!, QCNE!, US!, USJ!, WIS!, isotypes).

Coarse robust epiphytic shrub. Young internodes and vegetative buds densely beset with appressed simple brown hairs but becoming completely glabrous with age. Juvenile expanding leaves densely to moderately furfuraceous–puberulent throughout with a sparse to moderate cover of simple appressed brown hairs mostly restricted to the elevated primary veins below. Mature leaves of a pair essentially equal to slightly unequal in size; petioles 2.3–3.5 cm long, proximally thickened and canaliculate; blades glabrous throughout, thick and coriaceous, 14.3–21.2 cm long and 9.5–13 cm wide, elliptic-ovate, apex abruptly acuminate, base obtuse and weakly decurrent on the petiole, margin entire, 5-nerved or weakly 5-plinerved, the transverse secondary veins 2–5.5 mm apart at the widest portion of the blade, minutely puncticulate on both surfaces. Flowers fragrant (fide Herrera),

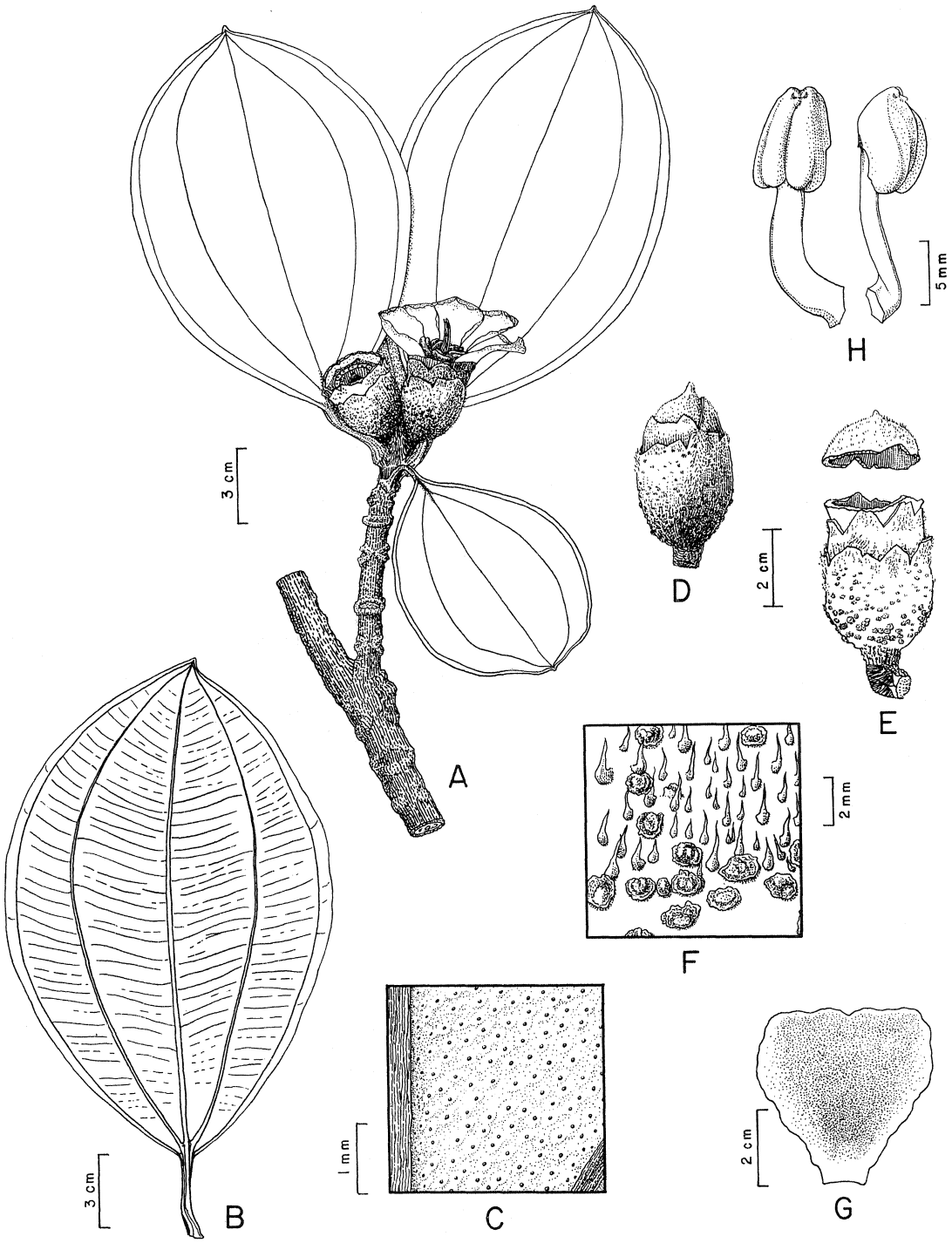

FIGURE 1. *Blakea costaricensis.* A, habit; B, representative leaf (abaxial surface); C, enlargement of abaxial leaf surface (intercostal area); D, floral bud showing apiculate calyx apex; E, flower at anthesis showing calyptrate calyx (petals, stamens, and style removed); F, enlargement of basal region of outer floral bract; G, petal; H, stamens, ventral view (left), lateral view (right). (A–H from *Herrera & Chacón 2758,* CAS.)

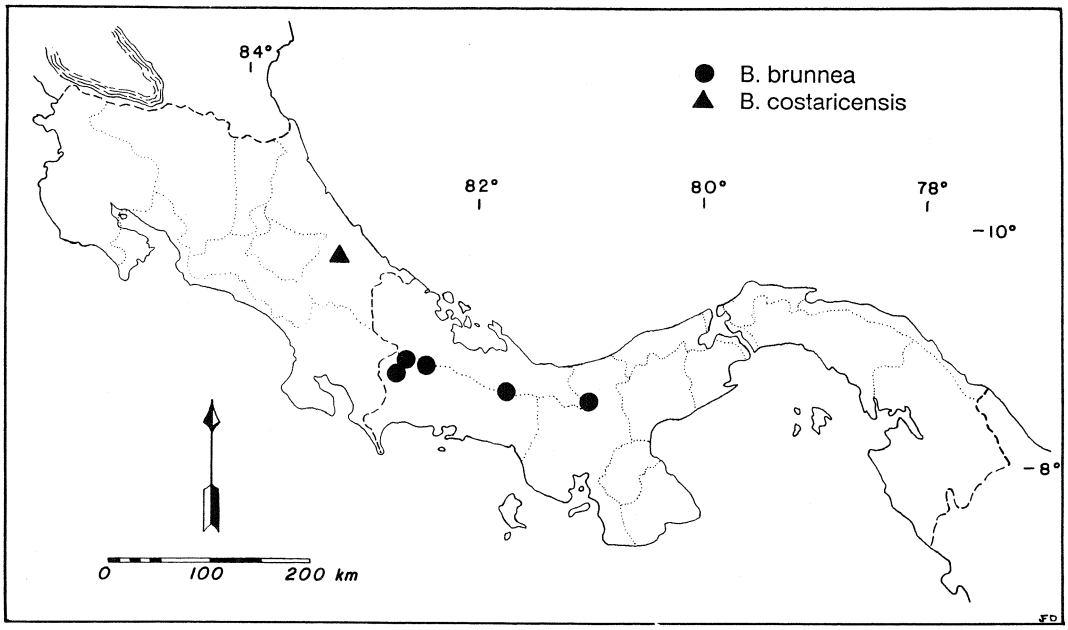

FIGURE 2. Distributions of *Blakea brunnea* and *B. costaricensis*.

erect, solitary in the axils of the uppermost leaves; pedicels glabrous, 1–1.7 cm long and 0.7–1.1 cm wide. Floral bracts thick and coriaceous, sessile and conspicuously 6-lobed; outer bracts connate for their entire length, coarsely lenticellate mostly along the basal ⅓ of their length, otherwise deciduously beset with antrorsely spreading smooth hairs, 2.6–3.1 cm long (including lobes), the lobes 0.5–1.2 × 1–2.2 cm, broadly triangular but often appearing oblong or somewhat rounded because of the fragile rupturing apex, moderately but deciduously beset with hairs like those of the fused portion of the bracts; inner bracts connate for their entire length like the outer bracts to form a distinctly lobed, deciduously pubescent, bowl-like collar 2.2–2.9 cm long (including lobes) that envelops the hypanthium but is concealed (in part) by the outer bracts, the lobes 0.5–1.1 × 0.9–2.2 cm, rounded-triangular. Hypanthium (at anthesis) campanulate, 2.4–2.7 cm in diameter. Flower buds light green, rounded–elliptic, 3–3.8 cm long and 2–2.4 cm in diameter, smooth and glabrous below but lanate toward the reddish apex, the calyptriform calyx 1.7–2.2 cm long, acuminate to apiculate; torus glabrous adaxially. Petals 6, fleshy and glabrous but irregularly tuberculate on both surfaces, white but the distal half flushed with faint pink-purple spots when fresh, irregularly obovate and retuse, 3.5–4.4 × 4.2–4.6 cm, entire. Stamens 12, isomorphic, free but connivent and forming a declinate nearly semicircular ring around the style; filaments fleshy, subulate and complanate, 14 mm long and 3.5 mm wide at the apex; anthers 9.5–10 mm long and 6–7 mm wide, yellowish-green, ovoid with two ventrally inclined pores mostly 0.5 mm in diameter; connective thickened dorsally for a short distance (ca. 2 mm) midway up the thecae and prolonged into an ill-defined bluntly bilobed deflexed appendage mostly 0.5 mm long. Ovary completely inferior, glabrous at the smooth summit and dilated apically into a truncate cone 2–2.5 mm long. Style declinate and incurved distally, glabrous, 2.8 cm long and 3 mm wide; stigma truncate. Mature berry and seeds not seen.

DISTRIBUTION. The type and only known collection of *B. costaricensis* was gathered in a wet montane forest at 1,600 m on Fila Matama, a ridge that attains a maximum elevation of 2,251 m (FIGURE 2). Fila Matama is a prominent eastern spur of the Talmanca massif that diverges in a northeasterly fashion from Cerros Urán and Chirripó. Its geographic extent, high precipitation, and contiguous juxtaposition with higher peaks on the Talamanca range make it a potentially rich and promising area for botanical exploration.

DISCUSSION. *Blakea costaricensis* is remarkable for its large leathery leaves, calyptriform calyx, and striking fragrant flowers. The thick indurate floral bracts of this species are also noteworthy. Each pair of bracts is fused for its entire length

to form an apically lobed bowl-like collar enveloping the ovary. Because the calyx is calyptrate and falls away as a unit, the prominently lobed floral bracts may inadvertently be mistaken for the calyx. Another unusual but less conspicuous feature of this species is the puncticulate nature of the upper and lower foliar surfaces. What superficially appear to be pits are actually pigmented dots or perhaps minute glands when viewed at magnifications of 120× or higher. This foliar feature, together with the calyptriform calyx, clearly sets this species apart from all other members of the genus.

The many distinctive characters of *B. costaricensis* also make it difficult to provide definitive comments about its relationships. The only other large-flowered epiphyte in the genus that even approaches *B. costaricensis* is *B. brunnea* Gleason, a species known from montane forests in western Panama (FIGURE 2). Both species have large prevailingly 5-nerved leaves, solitary flowers, floral bracts that are connate for all or most of their length, and petals that are tuberculate when dry. *Blakea brunnea,* although known from few collections, is distinguished by a number of diagnostic characters. Its young internodes, vegetative buds, hypanthia, and abaxial primary leaf veins are beset with coarse spreading conic and compressed hairs; its remotely dentate leaves are broadly rounded to subcordate at the base and lack the puncticulate surface so characteristic of *B. costaricensis*; and its calyx ruptures irregularly into 4–6 persistent lobes. Despite similarities in anther size and shape, these two species exhibit constant but subtle differences in anther pore orientation. The pores of *B. costaricensis* are ventrally inclined whereas those of *B. brunnea* are terminal and not readily observed in profile view.

The specific epithet for this species is derived from Costa Rica, where it is presumably endemic.

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