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A New *Blakea* (Melastomataceae: Blakeeae) from
Tapantí National Park, Costa Rica

Frank Almeda

Department of Botany, California Academy of Sciences, Golden Gate Park,
San Francisco, California 94118-4599, U.S.A.

Gina Umaña Dodero

Herbario Nacional de Costa Rica, Museo Nacional, Apartado 749-1000,
San José, Costa Rica

ABSTRACT. *Blakea tapantiana*, a new Costa Rican endemic, is described, illustrated, and compared with *B. grandiflora*, an allopatric Costa Rican endemic that occurs at higher elevations and flowers sporadically throughout the year. The new species is distinguished by its short-pedicellate flowers, caudate-acuminate outer floral bracts, white petals, and unappendaged anther thecae.

Blakea, a neotropical genus with over 100 described species, continues to yield new Mesoamerican taxa of local distribution (Umaña & Almeda, 1991). Unlike many species of *Blakea*, which tend to flower sporadically throughout the year, the species proposed here appears to flower for a short period during the rainy season followed by a rather lengthy period of fruit maturation. This probably accounts, in part, for the paucity of flowering and mature fruiting specimens in herbaria and emphasizes the need for repeated visits to mid-elevation montane forests in Costa Rica and elsewhere in tropical America.

Blakea tapantiana Umaña & Almeda, sp. nov.

TYPE: Costa Rica. Cartago: Parque Nacional Tapantí, Sendero Oropéndola, 9°48'18"N, 83°57'12"W, 1200 m, 3 Sep. 1992 (fl), Umaña *et al.* 497 (holotype, CR; isotypes, CAS, COL, F, K, MEXU, MO, US, USJ, WIS). Figure 1.

Frutex epiphyticus vel terrestris. Ramuli primum subquadrangulati demum teretes sicut foliorum subtus venae primariae et secundariae pedicelli bracteaque primum densiuscule furfuracei, demum glabrescentes. Lamina elliptica vel oblongo-elliptica, apice caudato-acuminato. Flores 6-meri in quoque nodo superiore 1-3, pedicellis 0.6-1 cm longis; bracteaes exteriores ca. 3-6 mm coalitae apice hebeti-acuminato. Antherae 4.5-5 × 1-1.5 mm inter se non cohaerentes; connectivum dorsaliter paulo elevatum ecalcaratum.

Terrestrial or epiphytic shrubs 2-6 m tall. Upper branchlets rounded-quadrate to somewhat sulcate, becoming rounded and glabrous with age. Vegetative buds, young branchlets, young petioles, primary and secondary abaxial leaf veins, and immature inner and outer floral bracts densely to moderately covered with dendritic and scurfy hairs. Mature leaves of a pair equal to somewhat unequal in size, essentially glabrous adaxially or sparingly beset with a mixture of paleaceous, dendritic, and/or conic hairs along the elevated veins; petioles 1.5-3.5 cm long; blades coriaceous, 8.3-17 cm long and 4.1-7.6 cm wide, elliptic to oblong-elliptic, rarely elliptic-obovate, apex acuminate to caudate-acuminate, base acute varying to obtuse, margin denticulate to subentire, 5-nerved or 5-plinerved with the innermost pair of primary veins diverging from the median vein 3-6 mm above the blade base, the striolate transverse secondary veins spaced 1.5-3 mm apart at the widest

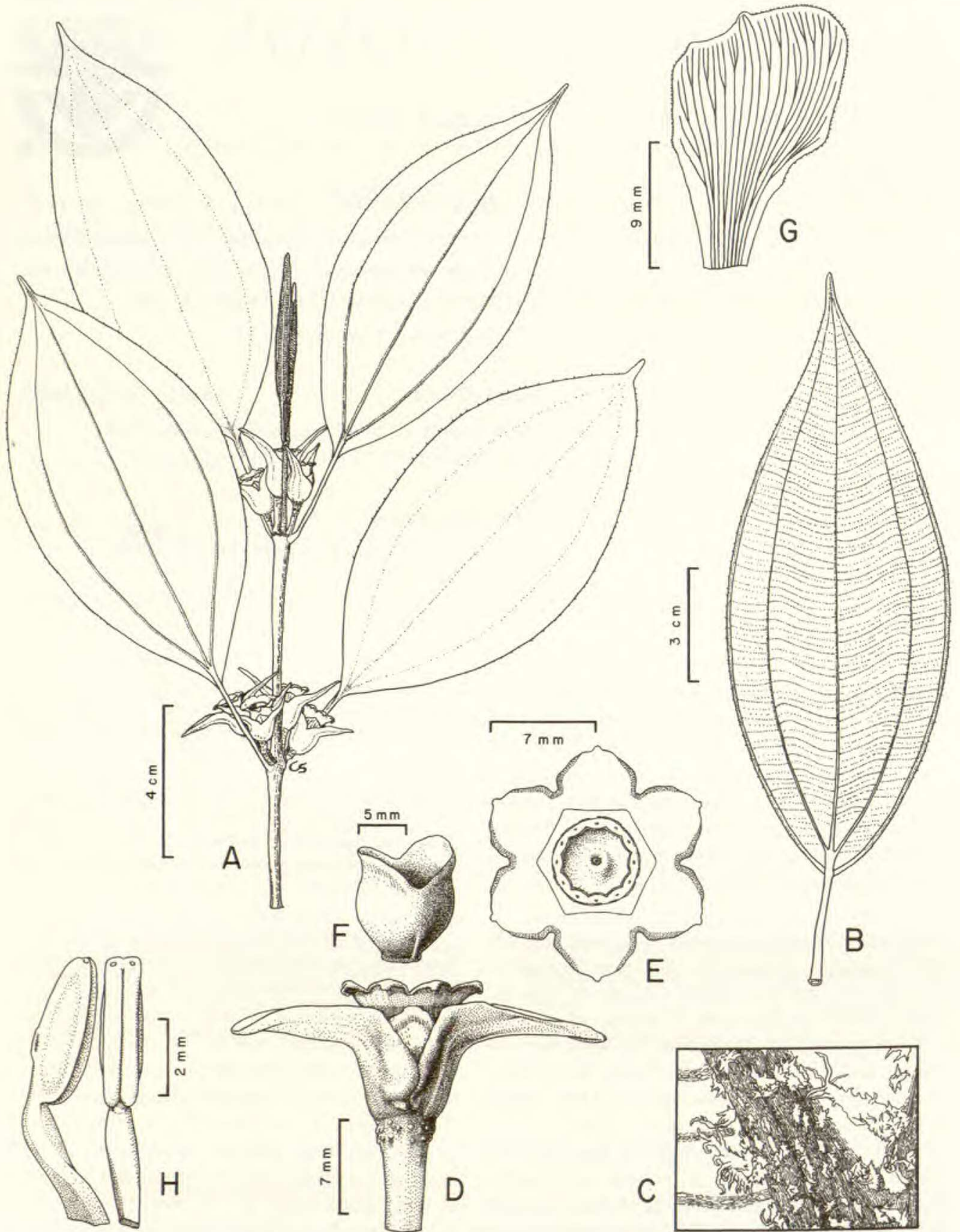


Figure 1. *Blakea tapantiana* Umaña & Almeda. —A. Habit. —B. Representative leaf (abaxial surface). —C. Enlargement of a primary leaf vein (abaxial surface). —D. Immature fruit enveloped by outer and inner floral bracts. —E. Young fruit (top view) showing ovary summit, torus, and calyx lobes. —F. Fused inner floral bracts. —G. Petal. —H. Stamens, lateral view (left) and ventral view (right). (A–C from Almeda *et al.* 6860; D–H from Umaña *et al.* 497.)

portion of the blade. Flowers erect, 1–3 in each leaf axil of uppermost branches; pedicels 0.6–1 cm long, thick but somewhat compressed and 2-edged, glabrous and lenticellate. Floral bracts sessile, entire; outer bracts 1.8–2.5 × 0.8–1.1 cm, fused basally for 3–6 mm, ovate, apex acuminate to caudate-acuminate, margin entire, 3-veined with only the median vein usually prominulous, glabrous throughout; inner bracts 1–1.2 cm long, connate basally for nearly half their length to form a 2-lobed cuplike collar that envelops the hypanthium but is somewhat concealed by the outer bracts, the free portions of the inner bracts rounded-triangular and glabrous, 0.4–0.7 × 0.7–0.8 cm. Hypanthium (in young fruit) campanulate, 0.8–1 cm long to the torus and 0.6–0.8 cm diam., glabrous. Calyx tube 2.5–3 mm long; calyx lobes 4.5–6 mm long and 5–6 mm wide basally, rounded-triangular, margin ± entire and conspicuously callose-thickened, glabrous on both surfaces. Petals 6, glabrous, 17–21 × 7–10 mm, white, narrowly obovate, apically rounded (sometimes obliquely so) and often abruptly and bluntly acute, essentially entire and ciliate. Stamens 12, isomorphic; filaments 5–7 mm long, complanate, glabrous and declined to one side of the flower opposing the style; anthers 4.5–5 mm long, 1–1.5 mm wide, yellow, oblong, laterally compressed with two well-separated pores at the truncate apex; connective slightly dilated dorso-basally ca. 0.5 mm above the filament insertion into a low blunt thickening. Ovary wholly inferior, 6-celled, glabrous at the slightly elevated bluntly conic apex but lacking a collar. Style somewhat declinate, glabrous, 10–11 mm long; the expanded stigma subtruncate to narrowly conic. Mature berry and seeds not seen.

Distribution. This little-collected cloud forest species is known only from Cartago Province, Costa Rica, in a region extending from the recently designated (1993) Tapantí National Park (formerly Refugio Nacional de Vida Silvestre) to Valle Escondido on the Atlantic slope of the Cordillera de Talamanca at 1150–1450 m.

Blakea tapantiana is notable for its caudate-acuminate leaf apices, short-pedicellate flowers, acuminate to caudate-acuminate outer floral bracts, white petals, and unappendaged anther thecae.

Among the few white-flowered Costa Rican species of *Blakea* that exhibit both an epiphytic and free-living shrubby habit, *B. tapantiana* is likely to be confused only with *B. grandiflora* Hemsley. The latter species is also endemic to Costa Rica, but it is most commonly encountered in the wet wooded

slopes and valleys of the Cordillera Central and Cordillera Tilarán.

Many of the diagnostic features that can be used to separate *Blakea tapantiana* from *B. grandiflora* are quantitative. The leaf blades of *B. grandiflora* are consistently larger (13–25.5 × 7.7–14.7 cm), as are the pedicels (2.5–4.5 cm), outer floral bracts (1.3–2 cm wide), and fully expanded petals (25–35 × 25–32 cm). In *B. grandiflora* the outer floral bracts are fused basally for 8–15 mm, but they are fused for only 3–6 mm in *B. tapantiana*. Flower color also appears to provide a diagnostic field character for distinguishing the two species. The apex of floral buds in *B. tapantiana* is pale pink, but the petals are completely white when fully expanded. In *B. grandiflora*, however, the buds are deep pink, and the expanded petals are flushed pink apically on one or both surfaces.

Other more subtle but consistent differences can be used to distinguish these two species. In overall aspect the vegetative and floral organs of *Blakea grandiflora* are coarser and thicker, but these are difficult to quantify. The anthers of *B. grandiflora* have a distinctive blunt appendage borne dorsally on the connective about 1 mm above the base of the thecae. The anther connective in *B. tapantiana* is merely thickened and not elaborated into a knobby appendage. *Blakea grandiflora*, like *B. tapantiana*, has a sparse to dense indument on uppermost branchlets, vegetative and young floral buds, and petioles that consists of coarse dendritic hairs that vary toward or are intermixed with paleaceous hairs that have somewhat lacerate margins. In *B. tapantiana* the dendritic hairs are not as coarse or as well developed and vary toward a furfuraceous indument on abaxial leaf surfaces.

Taken together these consistent differences, coupled with the elevational and geographical separation between *B. tapantiana* and *B. grandiflora*, provide a compelling rationale for recognizing two species. This taxonomic interpretation is consistent with a pattern of sharply discontinuous quantitative differences seen in other species pairs such as *B. austin-smithii* Standley and *B. chlorantha* Almeda and in *B. calycosa* Gleason and *B. tuberculata* Donnell Smith.

Paratypes. COSTA RICA. **Cartago:** Refugio Nacional de Fauna Silvestre Tapantí, Sendero de la Oropéndola bordering Río Macho, 22 Mar. 1986 (fr), Almeda et al. 5699 (CAS, CR, MO, NY); Refugio Nacional de Vida Silvestre, Sendero de la Oropéndola about 1.2–2.7 km from the reserve entrance, 1 Mar. 1991 (fr), Almeda et al. 6860 (CAS, CR, F, US); Refugio Nacional de Vida Silvestre, Sendero de la Oropéndola, 13 Feb. 1992 (fr), Almeda et al. 6971 (CAS, CR, MO, US); bank of Río Grande de Orosí, 4 km S of Tapantí, 15 Sep. 1967 (fl), Lent 1280 (F); Valle Es-

condido, 15 Apr. 1966 (fr), *Schnell 689* (F); Parque Nacional Tapantí, Sendero Oropéndola, 9°48'18"N, 83°57'12"W, 1200 m, 20 Aug. 1992 (fl), *Umaña et al. 496* (CR), 29 Sep. 1992 (fl), *Umaña et al. 498a* (CR), 24 Sep. 1993 (fl), *Umaña et al. 498b* (CR).

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Literature Cited

Umaña D., G. & F. Almeda. 1991. *Blakea costaricensis* (Melastomataceae): A remarkable new epiphyte from southeastern Costa Rica. *Selbyana* 12: 1-4.