

MISCELLANEOUS NEW TAXA OF BROMELIACEAE (XI)

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ABSTRACT: Five new species of Bromeliaceae are described: *Orthophytum sucrei* from Brazil, *Guzmania bergii* and *Pitcairnia clarkii* from Ecuador, *Tillandsia occulta* from Mexico, and *Pitcairnia croatii* from Panama. Miscellaneous New Taxa of Bromeliaceae (X) appeared in Selbyana 16(2) (1995).

BRAZIL

Orthophytum sucrei H. Luther, sp. nov. FIGURE 1.

TYPE. BRAZIL. collected from the garden of Dimitri Sucre, *T. Plowman 12953 legit* originally collected wild in Bahia by Luis Carlos Gurken, flowered in cultivation at the Marie Selby Botanical Gardens, SEL 83-44, 23 June 1988, H.E. Luther s.n. (Holotype: SEL; Isotype: RB).

A *Orthophytum fosterianum* L.B. Smith, cui affinis, foliis adaxialibus fere glabris non grosse leprosis, inflorescentia simplicissima, bracteis florigeris rubris, petalis pallide viridibus differt.

Syn.: *Orthophytum fosterianum* L.B. Smith var. *estevesii* Rauh, Trop. Subtrop. Pflanzenwelt 79:27-9. 1991. TYPE. Brazil: Espirito Santo, between Mantena and Palmeira, 29 April 1986, *Esteves Pereira s.n.* (Holotype HB).

Plant a terrestrial, flowering 12-25 cm tall, propagating by one-to-several basal and usually a single terminal offset, usually forming chains of plants. **Leaves** laxly spreading, 4-15 cm long, somewhat succulent, pale green or coppery-green. **Leaf sheaths** broadly ovate, 10-15 × 15-20 mm, pale, nerved, somewhat varicose. **Leaf blades** narrowly triangular to lanceolate, acute to attenuate, 15-22 mm wide, antrorse serrate with 1-2 mm long spines, plane to somewhat channeled, adaxially nearly glabrous and even, abaxially sulcate with appressed pale brown trichomes between the veins. **Scape** erect at first but becoming declinate, 12-20 cm × 3-5 mm, white lanuginose-lepidote, pale green. **Scape bracts** like the leaves but generally smaller, laxly arranged, spreading and not obscuring the scape. **Inflorescence** simple, capitate or short cylindrical 2-5 × 4-5 cm, 5- to 10-flowered, the sterile bracteate apex continuing to grow and forming a vegetative shoot. **Floral bracts** subligulate to triangular, acute to acuminate, 25-45 × 12-16 mm, spreading to strongly recurving, adaxially glabrous, abaxially appressed-lepidote, red. **Flowers** subsessile, erect to slightly spread-

ing. **Sepals** narrowly triangular, attenuate, 18-20 mm long, thin, nerved, carinate, green or tinged red. **Corolla** erect, the lobes only slightly spreading. **Petals** ligulate, obtuse, 25 mm long, each appendaged with two finely lacerate scales at 2-3 mm above the base, very pale green. **Ovary** ovoid, 4-5 × 6-7 mm, pale green.

PARATYPE: Clone of the holotype, 27 Feb. 1983, *T. Plowman 12953* (F).

Quite contrary to the type description, *Orthophytum fosterianum* usually produces a compound inflorescence. The photograph supplied by M.B. Foster, which appears in the protologue (Smith 1958), clearly shows an inflorescence with two lateral branches. Up to seven branches may be produced on an especially vigorous plant (pers. obs.). Herbarium material, which was the basis for the original description and later keys, is unusually depauperate: simple or barely branched. This state of affairs makes it difficult to "key out" true *O. fosterianum* or to distinguish *O. sucrei*.

Orthophytum sucrei may be separated from *O. fosterianum* by its smaller size (flowering to 25 cm tall vs flowering to 50 cm tall), nearly glabrous adaxial leaf surfaces (not variably and coarsely lepidote), simple inflorescence, red floral bracts (not green) and pale green petals (not white).

It appears that *O. gurkenii* P.C. Hutchinson and *O. magalhaesii* L.B. Smith represent color and trichome pattern morphs of *O. fosterianum* that could not be reconciled with the inaccurate and incomplete circumscription of *O. fosterianum*. Further study may show that they are best considered subspecies of *O. fosterianum*.

ECUADOR

Guzmania bergii H. Luther, sp. nov. FIGURE 2.

TYPE: ECUADOR. Prov. Morona-Santiago: 10-15 km west of Limon on road to Gualaceo, 1800 m, Sept. 1991, *Berg, Bak, Soerries & Skotak le-*

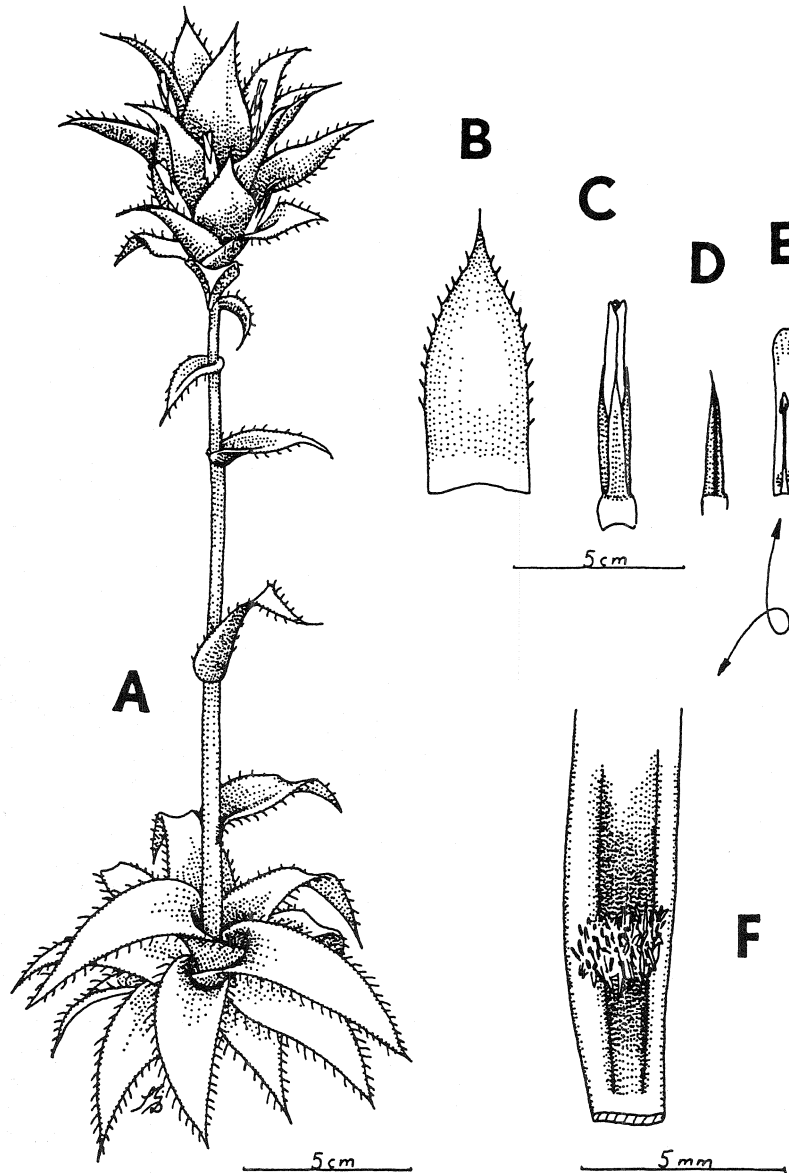


FIGURE 1. *Orthophytum sucrei*. A, habit; B, floral bract; C, flower; D, sepal; E, petal & stamen; F, base of petal.

git, flowered in cultivation Sept. 1992, W. Berg s.n. (Holotype: SEL).

A *Guzmania verecunda* L.B. Smith, cui affinis, sed planta majore, bracteis primaris surrufis non purpureis et petalis flaveis non albis differt.

Plant an epiphyte, flowering 45–85 cm tall. **Leaves** densely rosulate, suberect to spreading, 40–65 cm long, appressed-punctate-lepidote throughout, dark green to reddish-green. **Leaf**

sheaths narrowly elliptic, 8–10 × 3–5 cm, castaneous and densely brown punctate-lepidote especially abaxially. **Leaf blades** ligulate, acute to long acuminate, 15–25 mm wide, thin coriaceous. **Scape** erect, 30–40 cm × 8–10 mm. **Scape bracts** foliaceous, densely imbricate, erect to spreading, reddish-bronze to reddish-green. **Inflorescence** densely to laxly bipinnate, cylindrical, 10–30 × 6–10 cm. **Primary bracts** like the upper scape bracts, exceeding and con-

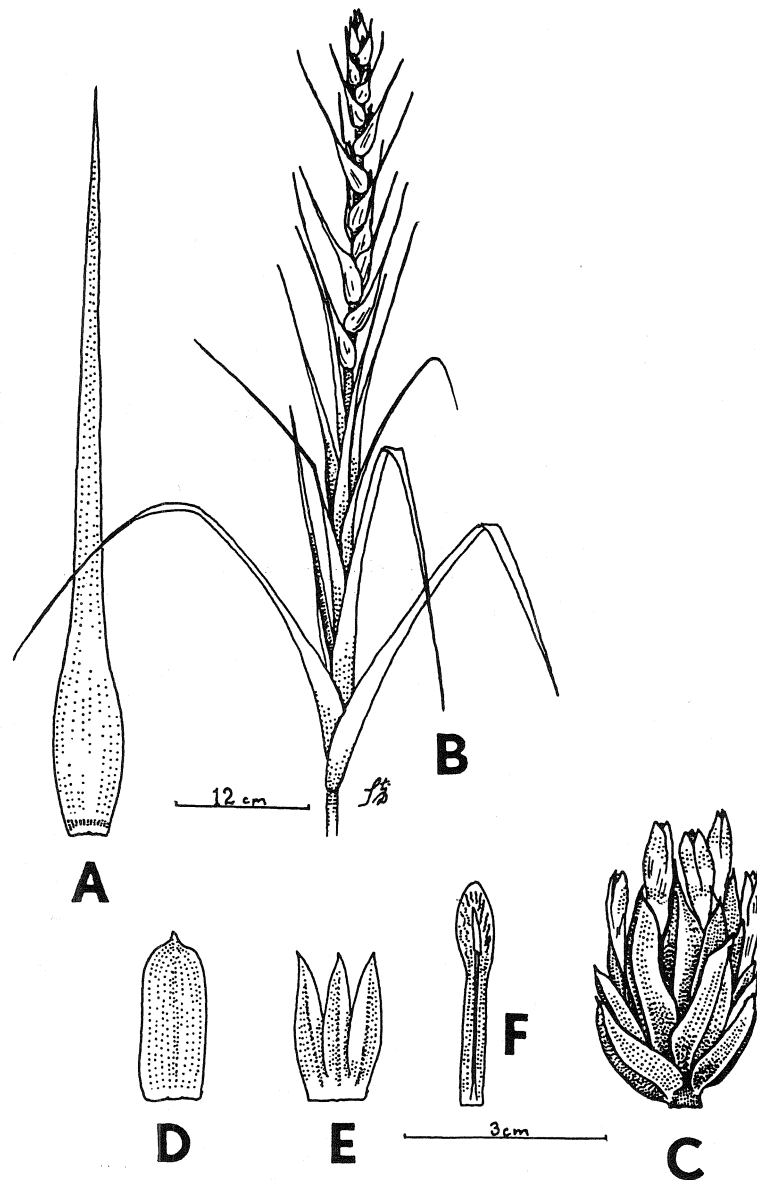


FIGURE 2. *Guzmania bergii*. A, leaf, adaxial surface; B, inflorescence; C, branch; D, floral bract; E, calyx; F, petal and single stamen.

cealing the branches; the elliptic sheaths dark castaneous, the foliaceous blades reddish-bronze to reddish-green. **Branches** with a 3–5 mm long sterile base, spreading to ca. 45° from the main axis, 30–45 × 15–25 mm, polystichously 6 to 10-flowered. **Floral bracts** ligulate, acute to rounded and apiculate, cucullate, 20–25 × 8–10 mm, sharply- to obtusely-carinate, somewhat nerved, thin-coriaceous, brown punctate-lepidote, yellow-green to light green. **Flowers** erect

to very slightly spreading, 1–3 mm, pedicellate, opening during the day. **Sepals** narrowly elliptic, acute to attenuate, 18–20 mm long, 3–5 mm connate, the adaxial pair carinate, thin-coriaceous, brown punctate-lepidote, green. **Corolla** erect, tubular. **Petals** ligulate to somewhat spatulate, 25–35 mm long, conglutinated for 15–20 mm, bright orange-yellow. **Stamens and style** included in the corolla tube.

PARATYPES: **ECUADOR**. Prov. Morona-Santia-

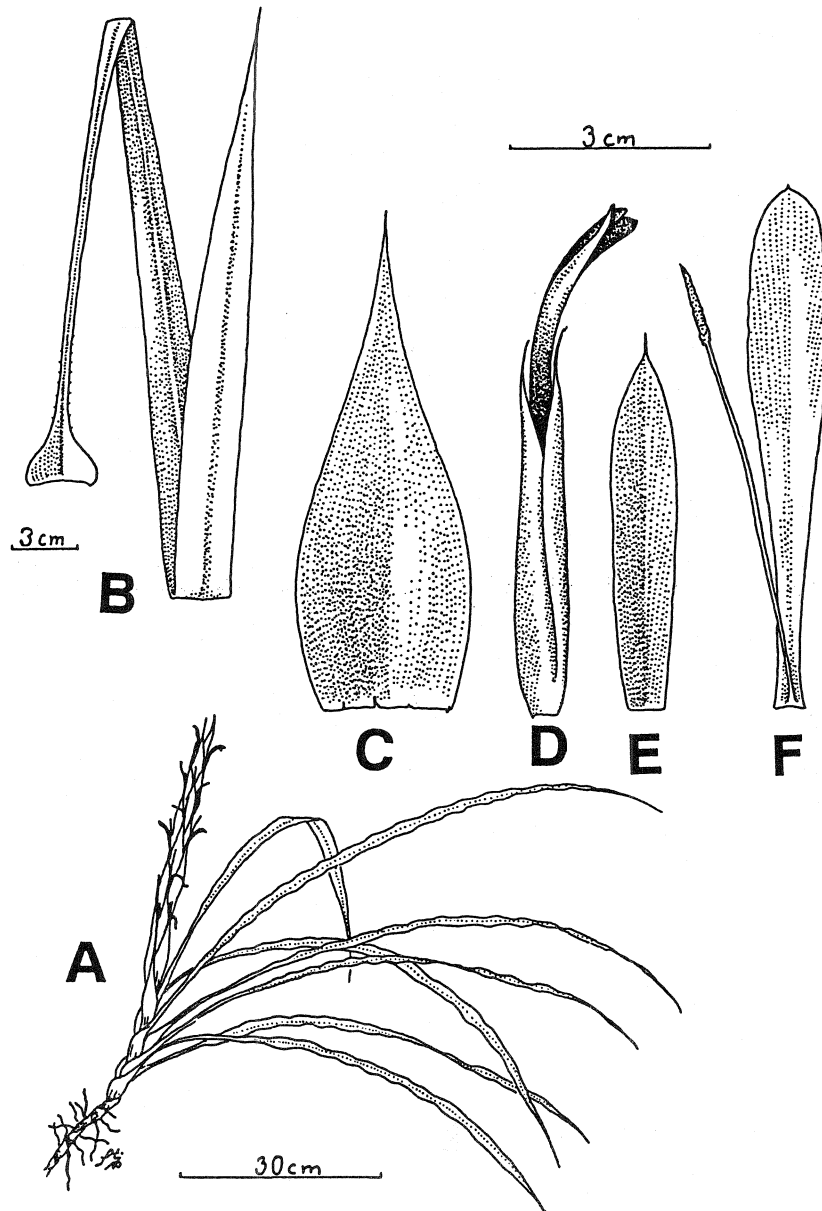


FIGURE 3. *Pitcairnia clarkii*. A, habit; B, leaf; C, floral bracts; D, flower; E, sepal; F, petal and stamen.

go: near Mendez, 1200–1500 m, Sept. 1991, *Skotak, Berg, Bak & Soerries legit.* flowered in cultivation, 2 April 1993, *C. Skotak s.n.* (SEL, QCNE).

Guzmania bergii appears to be very closely related to *G. verecunda* from southern Colombia, but is a larger plant with dark green to reddish-green (not bright green) leaves, reddish-green to reddish-bronze (not purple) primary

bracts and bright orange-yellow (not white) petals.

Pitcairnia clarkii H. Luther, sp. nov. FIGURE 3.

TYPE: ECUADOR. Prov. Esmeraldas: Quinindé, Bilsa Biological Station, Mache Mountains, 35 km W of Quinindé, 5 km W Santa Isabel, 00°21'N 79°44'W, 400–600 m. Premontane wet forest. 28 Mar–11 April, 1995 *John L. Clark &*

Yvonne Troya 528 (Holotype: SEL; Isotypes: MO, QCNE, QCA).

A *Pitcairnia arcuata* (André) André, cui affinis, sed foliis perangustioribus, inflorescentia erecta non declinata et petalis violaceis non flavis differt.

Plant terrestrial or a scandent hemiepiphyte, flowering to 1.5 m tall. **Leaves** laxly imbricate along the stem, polymorphic, the larger leaves spreading, 0.5–1.3 m long, the margins slightly undulate. **Leaf sheaths** elliptic to broadly ovate, entire or somewhat serrate toward the blade, somewhat nerved, castaneous, brown floccose-lepidote. **Leaf blades** lacking or narrowly triangular or pseudopetiolate; the pseudopetiole 10–25 cm × 4–8 mm, channeled, entire to laxly serrate; the blade very narrowly lanceolate, acute to attenuate, 10–28 mm wide, entire, channeled, thin-coriaceous, bright green, somewhat paler abaxially. **Scape** erect, 10–28 × 1 cm, nearly glabrous. **Scape bracts** erect, densely and tightly imbricate, elliptic, attenuate, very thin-coriaceous, somewhat nerved, brown floccose-lepidote, green to bright red. **Inflorescence** simple, cylindrical, erect to slightly arching, 30–50 × 2–4 cm, 25 to 40-flowered. **Floral bracts** erect, imbricate, elliptic, acute to long-attenuate, 7–10 × 2–3 cm, very thin-coriaceous, nerved, brown floccose-lepidote, bright red. **Flowers** with a 3–5 mm long pedicel, erect to very slightly spreading at anthesis. **Sepals** narrowly elliptic, acuminate, 45–55 mm long, thin-coriaceous, nerved, fugaciously brown-lepidote to nearly glabrous. **Corolla** somewhat zygomorphic, arcuate. **Petals** narrowly oblanceolate, acute to rounded and apiculate, 6–8 cm long, naked, dark purple. **Stamens** (bright orange !M.S. Bass) and **style** included. **Ovary** at least $\frac{2}{3}$ superior.

PARATYPES: **ECUADOR**. Prov. Esmeraldas: Type locality. 15 Sept. 1994, *J. L. Clark & B. Adnepos 67* (MO, QCNE); 29 Sept. 1994, *M.S. Bass, L. Kueppers & N. Pitman 110* (SEL, MO, QCNE).

This new species appears to be closely related to the potentially sympatric *P. arcuata* but differs by having much narrower leaf blades (10–28 mm vs 6–10 cm wide), an erect (not pendulous) inflorescence and dark purple (not yellow) corolla. *Pitcairnia clarkii* may be a very local endemic and is known only from the Bilsa Biological Station. This plant would make an interesting ornamental but has, unfortunately, not yet been introduced into horticulture.

MEXICO

Tillandsia occulta H. Luther, sp. nov. FIGURE 4.
TYPE: MEXICO. Sinaloa: along a logging road

NE of Panuco, 1100 m. elev. along a small stream, epiphytic on Bombaceae in a pine/oak forest with *Tillandsia caput-medusae*, *T. makoyana* and *T. pseudosetacea*, 6 March 1993, *Luther, Schuster, Baker, High & Quick 2950A* (Holotype: SEL; Isotype: MEXU).

A *Tillandsia simulata* Small, cui similis, bracteis florigeris majoribus sparse lepidotisque et sepalis majoribus differt.

Plants growing in small clusters or single, flowering 18–40 cm tall. **Leaves** erect to spreading, twelve to twenty-five in number, 15–32 cm long, somewhat succulent, densely cinereous-lepidote, grey-green or tinged reddish. **Leaf sheaths** elliptic, 3–5 × 1–2 cm, inflated and forming an elongate pseudobulb, densely ferruginous-lepidote especially adaxially. **Leaf blades** very narrowly triangular to linear, attenuate, 2–5 mm wide, inconspicuously ribbed, involute, the apex subulate. **Scape** erect, 12–20 cm × 2–3 mm, nearly glabrous, green. **Scape bracts** subfoliaceous, erect, imbricate, densely cinereous-lepidote, grey-green tinged reddish. **Inflorescence** digitate with two to six branches, 4–10 cm long. **Primary bracts** elliptic, acute to attenuate, much shorter than the branches, cinereous-lepidote, grey-green tinged red. **Branches** erect to spreading, 4–8 cm × 7–11 mm, with one to three sterile basal bracts. **Floral bracts** elliptic, acute, 17–23 × 8–10 mm, thin-coriaceous, somewhat carinate toward the apex, nerved, sparsely pale-lepidote both adaxially and abaxially, imbricate when fresh, slightly spreading when dried, green or tinged red or purple. **Flowers** subsessile, erect, opening in the morning. **Sepals** elliptic, acute, 16–20 mm long, the adaxial pair carinate and 8–10 mm connate at the base, thin-coriaceous, slightly nerved, glabrous, green. **Corolla** tubular, exceeded by the stamens and style. **Petals** ligulate, broadly acute, 33–38 mm long, unappendaged, purple. **Stamens** in two unequal series of three, the filaments flattened, purple, the anthers bright yellow. **Stigma** white. **Capsules** slenderly cylindrical, 3 cm long.

A collection of Dr. Werner Rauh (*Rauh RM-15855* at US) and also cultivated by Renate Ehlers of Stuttgart, Germany is very similar although somewhat smaller. This was collected in 1968 near Acapulco but the plants have not been relocated (Ehlers, pers. comm., 1993) from this area. This collection was misidentified as *Tillandsia ortgiesiana* E. Morr. ex Mez, a poorly known species originally collected somewhere in Mexico by Benedikt Roezler in 1873. *Tillandsia ortgiesiana* differs from *T. occulta* by having less conspicuous subtriangular leaf sheaths and nearly glabrous floral bracts; it is very similar to

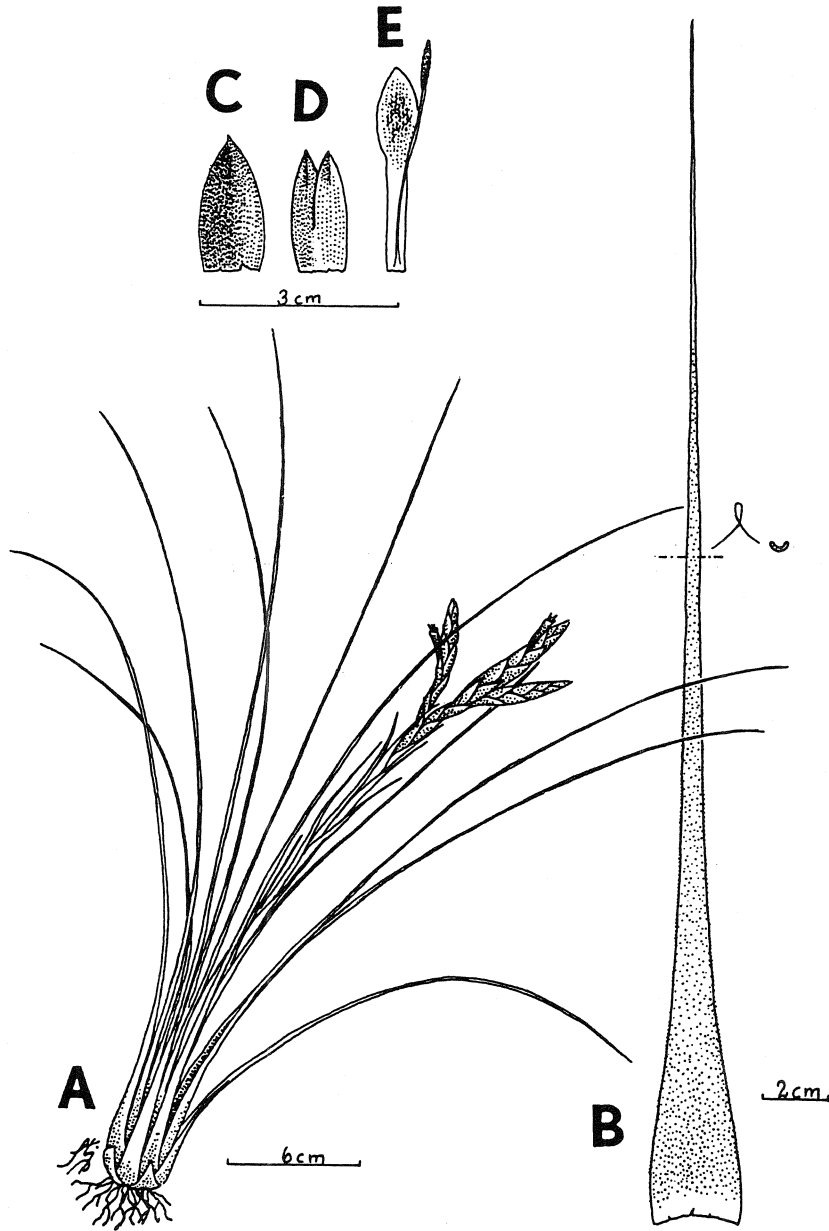


FIGURE 4. *Tillandsia occulta*. A, habit; B, leaf, abaxial view; C, floral bract; D, adaxial sepals; E, petal and stamen.

T. hammeri Rauh in many features and may be conspecific.

Tillandsia occulta seems most similar to the Florida endemic *T. simulata*, but differs from it by having less densely lepidote, longer floral bracts (17–23 mm vs 14–18 mm) and longer sepals (16–20 mm vs 13–16 mm). In addition, the Florida plant has bright-colored, pink floral

bracts in contrast to the mostly green floral bracts of *T. occulta*. *Tillandsia simulata* was “lost” for many years, incorrectly treated as a synonym of *T. bartramii* Elliot.

A case could probably be made to relate *T. occulta* to *T. baileyi* Rose ex Small of NE Mexico and SE Texas. They share a somewhat pseudobulbous habit, lepidote floral bracts and a very

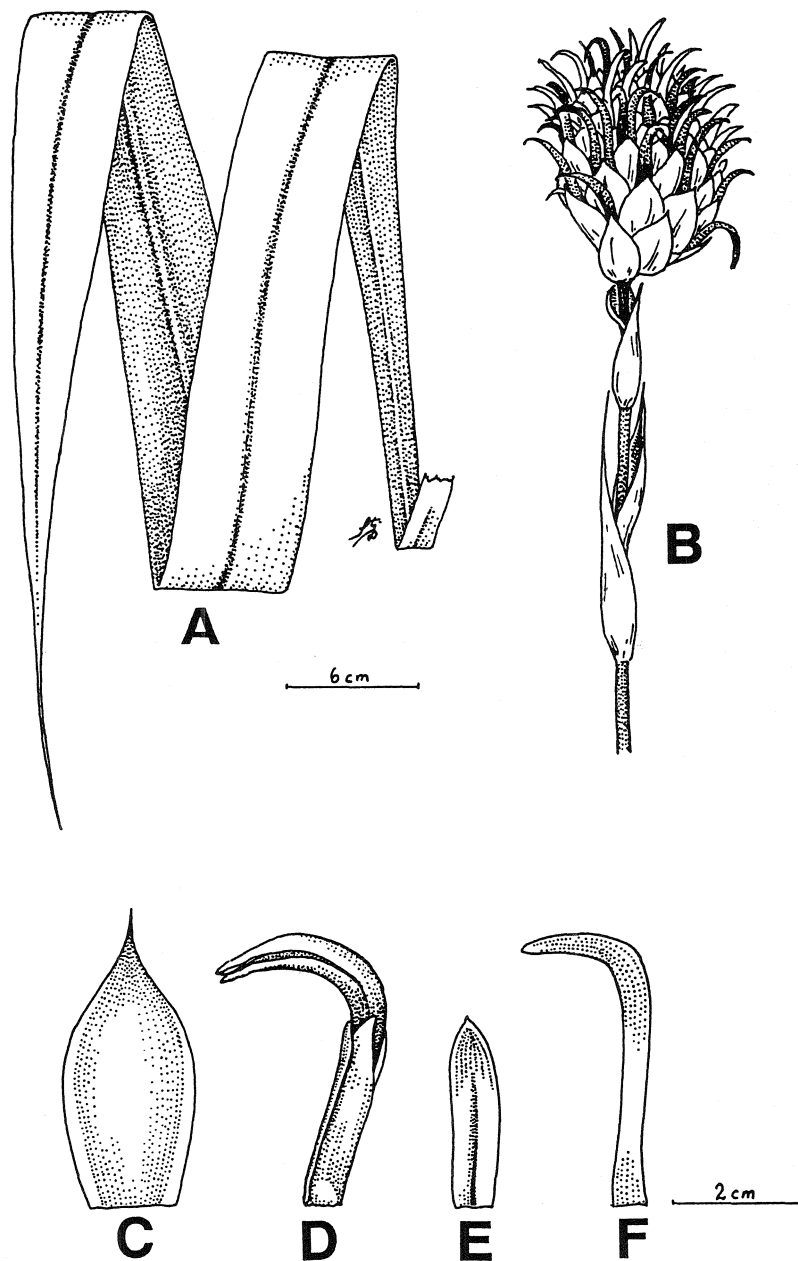


FIGURE 5. *Pitcairnia croatii*. A, leaf blade; B, inflorescence; C, floral bract; D, flower; E, sepal; F, petal.

similar floral morphology. I suspect that all of these taxa, and possibly *T. exserta* L.B. Smith and *T. elizabethiae* Rauh in addition, represent disjunct relic derivatives of a circum-Gulf of Mexico *Tillandsia* taxon that had its range fragmented by climate change.

The specific epithet of this tillandsia is based

on the fact that it was "unseen" or "hidden" by being misidentified as *T. ortgiesiana*.

PANAMA

Pitcairnia croatii H. Luther, sp. nov. FIGURE 5.

TYPE: PANAMA. Prov. Chiriqui: vicinity of

Boquete, Cerro Pate de Macho, upper NE slopes and along soggy ridge of Continental Divide. 8°46'N, 82°25'W. 1900–2000 m. 19 June 1987, T. Croat 66448 (Holotype: MO).

A *P. barrigae* L.B. Smith et *P. lindae* Betancur similis et affinis sed bracteis florigeris, sepalis petalisque minoribus differt.

Plant incompletely known, flowering to 1.5 m tall (!Croat). **Leaves** (only two partial ones known) to at least 1.2 m long. **Leaf sheaths** unknown but judging from the upper scape bracts probably elliptic, thin-coriaceous, pale brown lepidote. **Leaf blades** pseudopetiolate; the pseudopetiole 18–22 cm × 15–25 mm, channeled, nerved, entire, pale brown lepidote; the blade narrowly elliptic, attenuate at both ends, 3–5 cm wide, channeled, entire, pale brown lepidote especially abaxially, green. **Scape** erect, 75 cm (!Croat) × 5–6 mm, pale brown lepidote, drying very dark. **Scape bracts** erect, the uppermost very laxly imbricate, narrowly elliptic, attenuate, entire, green. **Inflorescence** erect, simple, subglobose, 11 × 9 cm. **Floral bracts** imbricate, slightly spreading with somewhat recurving apices, broadly elliptic to ovate, acute to attenuate, 25–50 × 20–25 mm, very thin-coriaceous to membranaceous, nerved, entire, sparsely pale brown lepidote to glabrous, red (!Croat). **Flowers** with a stout 2 mm long pedicel, erect to slightly spreading. **Sepals** free, lanceolate, acute, 28–30 × 6–7 mm, the adaxial pair carinate, thin-coriaceous, nerved, sparsely pale brown lepidote. **Corolla** somewhat zygomorphic. **Petals**

ligulate, broadly acute, 45–52 mm long, arcuate, unappendaged, white (!Croat). **Stamens and style** included. **Ovary** more than 2/3 superior.

Pitcairnia croatii is similar to the Colombian *P. barrigae* and *P. lindae*. From the former it can be separated by its entire leaves (vs. basally serrate), shorter petals (45–52 mm vs 80 mm long), shorter sepals (28–30 mm vs 34 mm long), and shorter floral bracts (25–50, mm vs 55 mm long). From the newly described *P. lindae*, *P. croatii* can be distinguished by its somewhat recurving (vs strictly erect), shorter floral bracts (25–50 mm vs 70–80 mm long), shorter petals (45–52 mm vs 60–70 mm long), and shorter sepals (28–30 mm vs 38–43 mm long).

In the key presented for the genus *Pitcairnia* in Flora Mesoamericana (Utley in Davidse *et al.* 1994), *Pitcairnia croatii* would come out in the vicinity of *P. guzmanioides* L.B. Smith or *P. carioana* Wittmack but can be easily distinguished by bract and flower size.

ACKNOWLEDGMENTS

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