

Type: NICARAGUA. Yelaya: Cerro La Pimienta, ca. 13°45'N, 84°59'W, ca. 900–980 m, 13 April 1979, *J. Pipoly 5112* (holotype NY!, isotype MO, *n.v.*).

Inflorescences rachillae 17(9–30), 7.5(5.5–9.5) cm long.

Distribution and habitat:—From 12°15'–13°47'N and 84°59'–85°52'W in Nicaragua at 956(350–1500) m elevation in lowland to montane tropical rainforest (Fig. 18).

23. *Geonoma fosteri* Henderson, *sp. nov.* (Appendix IV, Plate 34)

A spectebus affinitibus prophyllis brevibus inaequaliter apiculatis atque rachide brevior, crusta fructuum fibris subepidermalibus brevibus numerosis apicem convergentibus tuberculata, operculo carens differt.

Type: ECUADOR. Sucumbios: Sinangoe Station, Shishicho Ridge, Alto Aguatico drainage, above (south of) Rio Cofanes, west of Puerto Libre, NW of Lumbaqui, 00°12'N, 77°31' W, 1300–1450 m, 14 August 2001, *R. Aguinda, N. Pitman & R. Foster 1315* (holotype F!, isotype QCNE, *n.v.*).

Plants height no data; stems 1.5 m tall, 0.7 cm in diameter, cane-like; internodes 1.0 cm long, yellowish and smooth. *Leaves* irregularly pinnate, not plicate, bases of blades running diagonally into the rachis; sheaths 6.5 cm long; petioles 11.0 cm long, drying green or yellowish; rachis 20.5 cm long, 3.1(2.1–4.1) mm in diameter; veins raised and rectangular in cross-section adaxially; pinnae 3 per side of rachis; basal pinna 19.5 cm long, 1.5 cm wide, forming an angle of 63(58–68)° with the rachis; apical pinna 16.5 cm long, 8.5 cm wide, forming an angle 28° with the rachis. *Inflorescences* branched 3 orders; prophylls and peduncular bracts not ribbed with elongate, unbranched fibers; prophylls 5.2 cm long, short, asymmetrically apiculate, the margins curved around the stem, the surfaces flat with dense, felty, brown tomentum, prophyll equal to and early deciduous with the peduncular bract, the surfaces not ridged, without unequally wide ridges; peduncular bracts no data, inserted 0.4 cm above the prophyll; peduncles 5.7 cm long, 3.4(2.9–3.8) mm in diameter; rachillae 10.5 cm long, 1.0(0.9–1.1) mm in diameter, the surfaces without spiky, fibrous projections or ridges, drying brown, with faint to pronounced, short, transverse ridges, filiform with extended narrowed sections between the flower pits; flower pits alternately arranged (sometimes distorted by twisting and contracting of rachillae), glabrous internally; proximal lips without a central notch before anthesis, not recurved after anthesis, not hood-shaped; proximal and distal lips drying the same color as the rachillae, joined to form a raised cupule, the margins not overlapping; distal lips well-developed; staminate and pistillate petals not emergent, not valvate throughout; staminate flowers deciduous after anthesis; stamens 6; thecae diverging at anthesis, inserted almost directly onto the filament apices, the connectives bifid but scarcely developed; anthers short and curled over at anthesis; non-fertilized pistillate flowers deciduous after anthesis; staminodial tubes crenulate or shallowly lobed at the apex, those of non-fertilized pistillate flowers not projecting and persistent after anthesis; *fruits* size no data, the bases without a prominent stipe, the apices not conical, the surfaces not splitting at maturity, without fibers emerging, bumpy from the numerous, subepidermal, tangential, short fibers present, these coming to a point at fruit apices; locular epidermis without operculum.

Distribution and habitat:—From 0°12'–0°19'N and 77°25'–77°31'W on eastern Andean slopes in Ecuador at 1592(1375–1810) m elevation in montane rainforest (Fig. 19).

Taxonomic notes:—*Geonoma fosteri* is similar to a group of species within the *G. lanata* clade. It differs from *G. bernalii*, *G. dindoensis*, *G. lanata*, and *G. venosa* in having short, asymmetrically apiculate prophylls with the margins curved around the stem and the surfaces flat with dense, felty, brown tomentum; from *G. tenuissima* in its fruit surfaces bumpy from the numerous, subepidermal, tangential, short fibers present; and from *G. operculata* by its locular epidermis without an operculum. Only two specimens are known. These share the same character states as *G. braunii*, but the peduncular bract is unknown in *G. fosteri*. Given the large geographic distance between the two, they are kept separate pending more complete material.

Subspecific variation:—No trait varies within this species.

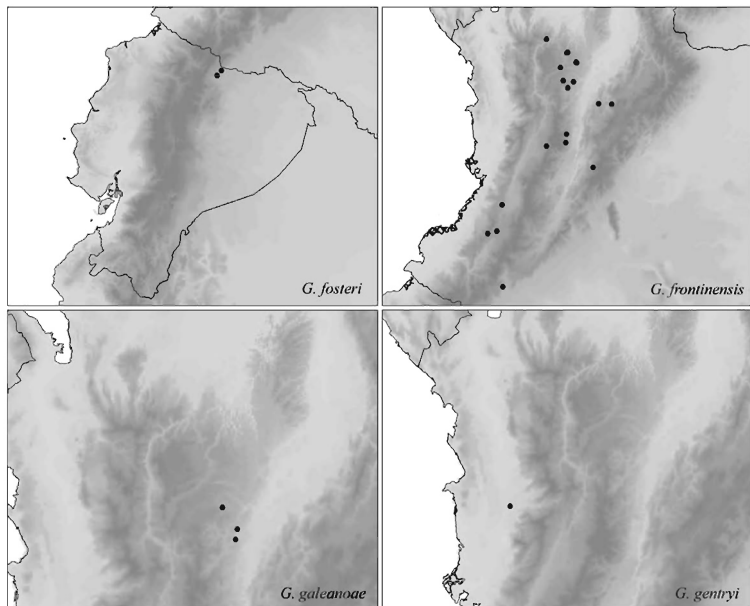


FIGURE 19. Distribution maps of *Geonoma fosteri*, *G. frontinensis*, *G. galeanoae*, and *G. genryi*.

24. *Geonoma frontinensis* Burret (1930a: 170). Type: COLOMBIA. Antioquia: Frontino, 1400–1700 m, September 1871, *F. Lehmann* 7323 (holotype B, destroyed, isotype K!).

Geonoma mucronata Burret (1930a: 171). Type: COLOMBIA. Antioquia: Dos Quebradas, 1500 m, 7 January 1880, *W. Kalbreyer* 1334 (holotype B, destroyed). Neotype (designated by Bernal *et al.* 1989): COLOMBIA. Antioquia: Carretera San Carlos-Granada, Dos Quebradas, 4.5 km E of San Carlos, 1200 m, 20 September 1987, *R. Bernal & L. Tobón* 1383 (neotype COL!, isoneotypes MO!, NY!).

Plants 1.1(0.5–2.0) m tall; stems 0.2(0.2–0.3) m tall, solitary or clustered; internodes no data. *Leaves* 6(4–8) per stem, undivided or irregularly pinnate, not plicate, bases of blades running diagonally into the rachis; sheaths 30.0 cm long; petioles 68.8(26.0–110.0) cm long, drying green or yellowish; rachis 40.0(22.5–65.0) cm long, 3.3(2.0–4.5) mm in diameter; veins raised and rectangular in cross-section adaxially; pinnae 5(1–8) per side of rachis; basal pinna 35.5(19.0–47.5) cm long, 3.6(0.3–8.7) cm wide, forming an angle of 46(30–61)° with the rachis; apical pinna 24.8(19.0–30.0) cm long, 9.8(2.0–21.5) cm wide, forming an angle of 26(20–34)° with the rachis. *Inflorescences* unbranched or branched 1 order; prophylls and peduncular bracts not ribbed with elongate, unbranched fibers, persistent; prophylls 19.8(13.4–26.2) cm long, not short and asymmetrically apiculate, the surfaces not ridged, without unequally wide ridges; peduncular bracts 20.2(14.3–26.5) cm long, well-developed, inserted 9.7(4.0–17.0) cm above the prophyll; peduncles 37.4(21.0–58.0) cm long, 2.9(1.6–4.5) mm in diameter; rachillae 2(1–4), 14.7(7.5–20.5) cm long, 3.9(2.9–5.2) mm in diameter, the surfaces without spiky, fibrous projections or ridges, drying brown or yellow-brown, without short, transverse ridges, not filiform and not narrowed between the flower pits; flower pits spirally