

53. *Geonoma sanmartinensis* Henderson, sp. nov. (Appendix IV, Plate 57)

A species affinis crusta fructuum fibris epidermalibus brevibus numerosis apicem convergentibus differt.

Type: PERU. San Martín: Prov. Rioja, Dist. Naranjillo, sector San Augustin, Bosque de Protección de Alto Mayo, 5°48'S, 77°21'W, 1250 m, 13 November 1996, I. Sánchez Vega & M. Dillon 8658 (holotype NY!, isotypes CPUN n.v., F!).

Plants 1.2(0.5–2.0) m tall; stem branching no data; stem type no data; stem height no data; stem diameter no data; internode color no data; internode length no data. *Leaves* irregularly pinnate, not plicate, bases of blades running diagonally into the rachis; sheaths no data; petioles drying green or yellowish; rachis 38.6(35.8–41.0) cm long, 3.2(2.3–4.0) mm in diameter; veins raised and rectangular in cross-section adaxially; pinnae 4(3–7) per side of rachis; basal pinna 28.1(27.0–29.5) cm long, 4.3(0.9–6.8) cm wide, forming an angle of 46(30–60)° with the rachis; apical pinna length no data, 12.3(9.2–15.0) cm wide, forming an angle of 27(22–32)° with the rachis. *Inflorescences* unbranched; prophylls and peduncular bracts ribbed with elongate, unbranched fibers, both bracts tubular, narrow, elongate, closely sheathing the peduncle, more or less persistent; prophylls 12.6(11.0–14.2) cm long, not short and asymmetrically apiculate, the surfaces not ridged, without unequally wide ridges; peduncular bracts 23.0(16.0–30.0) cm long, well-developed; inserted 1.1(0.8–1.4) cm above the prophyll; peduncles 63.5(63.0–64.0) cm long, 2.9(2.6–3.1) mm in diameter; rachillae 1.21.1(18.5–24.7) cm long, 3.6(3.1–3.9) mm in diameter, the surfaces with 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 arranged, glabrous internally; proximal lips without a central notch before anthesis, not recurved after anthesis, hood-shaped at anthesis, sometimes splitting post-anthesis; proximal and distal lips drying the same color as the rachillae, not joined to form a raised cupule, the proximal lip margins overlapping the distal lip margins; distal lips a scarcely raised rim; 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, smooth, without pores.

Distribution and habitat:—From 5°45'–5°54'S and 77°21'–77°45'W in Andean regions of Peru (San Martín) at 1525(1250–1850) m elevation in montane rainforest (Fig. 36).

Taxonomic notes:—*Geonoma sanmartinensis* appears most similar to *G. brongniartii*. It differs in its fruits which are bumpy from the numerous, subepidermal, tangential, short fibers present.

Subspecific variation:—No trait varies within this species, nor is there any geographic disjunction.

54. *Geonoma santanderensis* Galeano & Bernal (2002: 282). Type: COLOMBIA. Santander: Suaite, San José de Suaite, ca. 6°10'N, 73°27'W, 1700–1900 m, 30 July 2001, G. Galeano, J. Betancur, N. Castaño, L. Clavijo & N. García 6884 (holotype COL!, isotypes HUA n.v., NY n.v., UIS n.v.).

Plants height no data; stems 1.3(1.0–1.5) m tall, 0.8(0.6–0.9) cm in diameter, solitary or clustered, cane-like; internodes 1.5(1.0–2.2) cm long, covered with reddish or brownish scales, especially in their distal part. *Leaves* 9(7–12) per stem, irregularly pinnate, not plicate, bases of blades running diagonally into the rachis; sheaths 8.0(6.0–11.0) cm long; petioles 15.9(8.0–29.0) cm long, drying green or yellowish; rachis 20.5(15.5–25.0) cm long, 1.6(1.4–2.2) mm in diameter; veins not raised or slightly raised and triangular in cross-section

arranged, glabrous internally; proximal lips with a central notch before anthesis, often the two sides of the notch overlapping, not recurved after anthesis, not hood-shaped; proximal and distal lips drying the same color as the rachillae, not joined to form a raised cupule, the proximal lip margins overlapping the distal lip margins; distal lips well-developed; staminate and pistillate petals not emergent, not valvate throughout; staminate flowers deciduous after anthesis; stamens 6; thecae diverging or not diverging at anthesis, inserted onto well-developed, non-split, jointed connectives, connectives alternately long and short; anthers short at anthesis, remaining straight and parallel; non-fertilized pistillate flowers deciduous after anthesis; staminodial tubes lobed at the apex, the lobes spreading at anthesis, acuminate, those of non-fertilized pistillate flowers not projecting and persistent after anthesis; *fruits* 8.8(7.9–9.5) mm long, 7.2(6.4–8.0) mm in diameter, the bases without a prominent stipe, the apices not conical, the surfaces not splitting at maturity, without fibers emerging, not bumpy, not apiculate; locular epidermis with operculum, smooth, with pores.

Distribution and habitat:—From 7°45'N–8°00'S and 47°10'–70°11'W in the eastern and central Amazon region of the Guianas, Venezuela, Colombia, and Brazil, at 242(1–725) m elevation in lowland rainforest (Fig. 36).

Taxonomic notes:—*Geonoma poiteauana* was recognized by Henderson (1995) as a variety of *Geonoma macrostachys*, but is here recognized at the species level. The two are closely related, *G. poiteauana* differing by its fruits which are not bumpy and not apiculate. It belongs to a group of species within the *G. macrostachys* clade, comprising *G. macrostachys*, *G. multisecta*, *G. paradoxa*, and *G. schizocarpa*.

Subspecific variation:—Only one trait (leaf division) varies within this species.

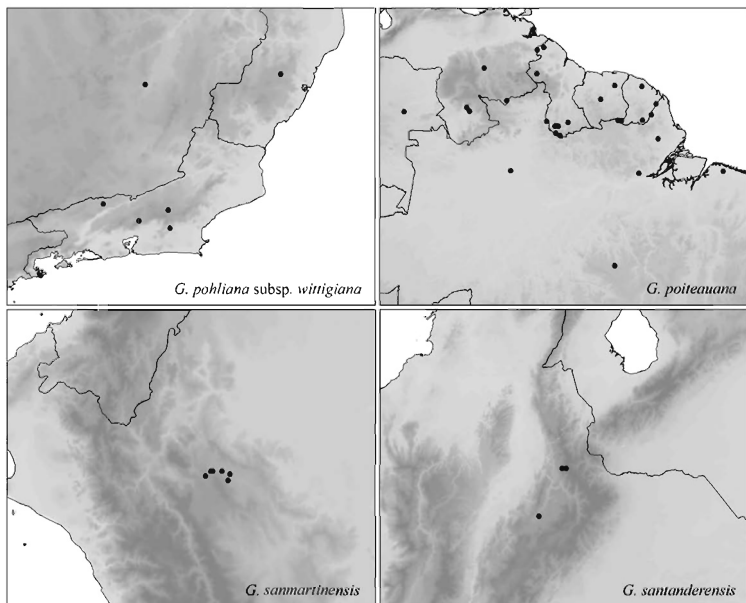


FIGURE 36. Distribution maps of *Geonoma pohliana* subsp. *wittigiana*, *G. poiteauana*, *G. sanmartinensis*, and *G. santanderensis*.