

14c. *Geonoma cuneata* subsp. *indivisa* Henderson, subsp. nov. (Appendix IV, Plate 17)

A subspectebus aliis follis simplicibus venis haud prominentibus atque rachide longiore differt

Type: PANAMA. San Blas: Cerro Brewster, 9°18'N, 79°16'W, 800–850 m, 20 November 1985, *G. de Nevers, A. Henderson, H. Herrera, C. McPherson & L. Brako* 6293 (holotype NY!, isotype MO!).

Leaves undivided; petioles drying green or yellowish; veins not raised or slightly raised and triangular in cross-section adaxially; rachis 56.6(40.0–88.0) cm long; pinnae 1 per side of rachis. *Inflorescences* staminate flowers deciduous after anthesis; non-fertilized pistillate flowers deciduous after anthesis.

Distribution and habitat:—From 8°34'–9°00'N and 78°55'–81°07'W in central Panama (Santa Fé to the western end of the Serranía de San Blás) at 541(50–1000) m elevation in lowland rainforest (Fig. 14).

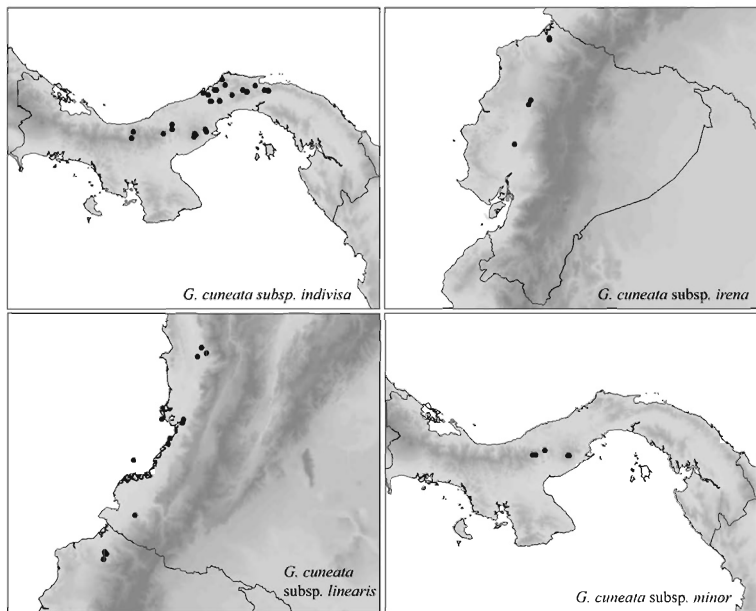


FIGURE 14. Distribution maps of *Geonoma cuneata* subsp. *indivisa*, *G. cuneata* subsp. *irena*, *G. cuneata* subsp. *linearis*, *G. cuneata* subsp. *minor*.

14d. *Geonoma cuneata* subsp. *irena* (Borchsenius) Henderson, comb. & stat. nov.

Basionym: *Geonoma irena* Borchsenius (1996: 605). Type. ECUADOR. Pichincha: Hacienda Irena, km 35 on the road Sto. Domingo de los Colorados-Quevedo, 280) m, 16 September 1995, *F. Borchsenius, C. Asmussen & J. Knudsen* 286 (holotype AAU!, isotypes COL!, F!, NY!).

Leaves pinnate; petioles drying green or yellowish; veins raised and rectangular in cross-section adaxially; rachis 68.6(36.0–105.0) cm long; pinnae 6–7 per side of rachis. *Inflorescences* staminate flowers persistent after anthesis; non-fertilized pistillate flowers persistent after anthesis.

Distribution and habitat:—From 1°03'N–0°28'S and 78°55'–79°42'W in western Ecuador at 253(185–300) m elevation in lowland rainforest (Fig. 14).

14c. *Geonoma cuneata* subsp. *linearis* (Burret) Henderson, comb. & stat. nov.

Basionym: *Geonoma linearis* Burret (1933a: 861). Type: COLOMBIA. Nariño: Barbacoas, Río Telembi, 10 August 1880, *F. Lehmann 51* (holotype B, destroyed). Neotype (selected by Galeano & Skov (1989): COLOMBIA. Nariño: Mun. Barbacoas, Río Telembi, entre Barbacoas y ca. 15 km río arriba, 160) m, 20 November 1986, *R. Bernal & B. Hammel 1320* (neotype COL!, isoneotype AAU!).

Leaves pinnate; petioles drying green or yellowish; veins raised and rectangular in cross-section adaxially; rachis 40.3(24.0–80.5) cm long; pinnae 7(4–10) per side of rachis. *Inflorescences* staminate flowers deciduous after anthesis; non-fertilized pistillate flowers deciduous after anthesis.

Distribution and habitat:—From 0°35'–5°45'N and 76°25'–78°56'W in western Colombia and Ecuador at 112(10–300) m elevation in lowland rainforest along the banks of fast-flowing streams (Fig. 14).

14f. *Geonoma cuneata* subsp. *minor* Henderson, subsp. nov. (Appendix IV, Plate 18)

A subspeciebus aliis foliis simplicibus venis haud prominentibus atque rachide breviora differt.

Type: PANAMA. Coclé: El Valle de Antón, Cerro Gaital, 8°37'N, 80°06'W, 26 November 1985, *G. de Nevers, A. Henderson, H. Herrera, G. McPherson & L. Brako 6355* (holotype NY!, isotype MO!).

Leaves undivided; petioles drying green or yellowish; veins not raised or slightly raised and triangular in cross-section adaxially; rachis 22.6(19.0–29.0) cm long; pinnae 1 per side of rachis. *Inflorescences* staminate flowers deciduous after anthesis; non-fertilized pistillate flowers deciduous after anthesis.

Distribution and habitat:—From 8°37'–8°42'N and 80°05'–80°39'W in central Panama (El Copé, Cocleito Road, El Valle) at 810(700–1030) m elevation in lowland rainforest (Fig. 14).

14g. *Geonoma cuneata* subsp. *procumbens* (Wendland ex Spruce) Henderson, comb. & stat. nov.

Basionym: *Geonoma procumbens* Wendland ex Spruce (1871: 105). *Geonoma cuneata* var. *procumbens* (Wendland ex Spruce) Skov ex Govaerts & Dransfield (2005: 114). Type: COSTA RICA. Heredia: Sarapiquí, 1857, *H. Wendland s.n.* (holotype K!).

Leaves pinnate; petioles drying green or yellowish; veins not raised or slightly raised and triangular in cross-section adaxially; rachis 71.3(42.0–108.0) cm long; pinnae 12(1–28) per side of rachis. *Inflorescences* staminate flowers deciduous after anthesis; non-fertilized pistillate flowers deciduous after anthesis.

Distribution and habitat:—From 7°24'–11°43'N and 77°40'–85°20'W in Nicaragua, Costa Rica, and Panama at 221(50–700) m elevation in lowland rainforest (Fig. 15).

There are two separate populations, in Nicaragua and Costa Rica, and eastern Panama. These do not differ from each other except for two variables (apical pinna width, rachilla width—both wider in the Panama population) (*t*-test, *P* < 0.05).

Two specimens (*Herrera 752, 973*) from the same locality in eastern Panama, and from the same locality as other specimens of subsp. *procumbens*, differ in their undivided leaves.

14h. *Geonoma cuneata* subsp. *rubra* Henderson, subsp. nov. (Appendix IV, Plates 19 & 20)

A subspeciebus aliis petiolis in sicco brunneo-rubris differt.

Type: COLOMBIA. Valle: Río Yurumangui, Quebrada Querré, arribe de Venerel, 50 m, 9 February 1990, *R. Bernal, W. Devia, E. Linhares & J. Angulo 1770* (holotype COL!).