

probabilities, 18 variables (plant height, stem diameter, internode length, petiole length, rachis length, rachis width, basal pinna length, basal pinna width, apical pinna length, apical pinna angle, prophyll length, interbract distance, peduncle length, peduncle width, rachilla length, rachilla width, number of rachillae, fruit diameter) differ significantly ($P < 0.05$) between at least one pair of subgroups, although no variable differs amongst all four subgroups. Based on these results and geography, these four subgroups are recognized as subspecies (subsp. *hexasticha*, *maxima*, *multiramosa*, *sigmoidea*).

The second group—with leaves undivided, irregularly pinnate (sometimes with 1-veined pinnae present), or regularly pinnate with 1-veined pinnae—can be divided into six separate subgroups based partly on geography, partly on variables, and on one trait (leaf plication). ANOVA shows that for pair wise comparison probabilities, 22 variables (plant height, stem diameter, leaf number, petiole length, rachis length, rachis width, number of pinnae, basal pinna length, basal pinna width, basal pinna angle, apical pinna length, apical pinna width, apical pinna angle, prophyll length, interbract distance, peduncle length, peduncle width, rachilla length, rachilla width, number of rachillae, fruit length, fruit diameter) differ significantly ($P < 0.05$) between at least one pair of subgroups, although no variable differs amongst all six subgroups. Based on these results and geography, these six subgroups are recognized as subspecies (subsp. *ambigua*, *chelidonura*, *camptoneura*, *compta*, *dispersa*, *spixiana*).

Key to the subspecies of *G. maxima*

- 1 Prophylls 5.6(3.7–7.0) cm long; north of the Amazon region on the Pacific coast and Magdalena valley in Colombia, and eastern Andean slopes in Venezuela..... subsp. *dispersa*
- Prophylls 10.9(4.0–21.8) cm long; Amazon region..... 2
- 2 Leaves regularly pinnate with 3–5-veined pinnae (except for basal and apical ones); rachis 68.4(25.5–120.0) cm long; pinnae 19(4–31) per side of rachis 3
- Leaves undivided, irregularly pinnate (sometimes with 1-veined pinnae present), or regularly pinnate with 1-veined pinnae; rachis 36.6(7.3–98.0) cm long; pinnae 5(1–29) per side of rachis..... 6
- 3 Rachillae 36(21–47); Amazonian Ecuador and adjacent Colombia (Caquetá, Putumayo) and Peru (Loreto) subsp. *multiramosa*
- Rachillae 21(6–50); Amazonian Colombia, Venezuela, Peru, Brazil, Bolivia, and the Guianas 4
- 4 Rachillae 28(16–42), 1.0(0.7–1.2) mm in diameter; Amazonian Colombia (Amazonas, Caquetá).. subsp. *sigmoidea*
- Rachillae 21(6–50), 2.5(1.5–3.6) mm in diameter; Amazonian Colombia (Guainia), Venezuela, Brazil, Bolivia, and the Guianas..... 5
- 5 Rachillae 13(6–25); southern Venezuela and adjacent Colombia (Guainia) and Brazil (Amazonas)..... subsp. *hexasticha*
- Rachillae 31(9–50); central and eastern Amazon region of Brazil and the Guianas..... subsp. *maxima*
- 6 Leaves regularly pinnate with 1-veined pinnae; rachis 44.5(11.0–87.0) cm long; basal pinna 0.3(0.1–0.5) cm wide; mostly south or west of the Amazon in Colombia, Brazil, Peru, and Bolivia subsp. *compta*
- Leaves undivided or irregularly pinnate (sometimes with 1-veined pinnae present); rachis 35.6(7.3–98.0) cm long; basal pinna 6.1(0.2–34.0) cm wide; widespread 7
- 7 Leaves plicate; basal pinna forming an angle of 13(4–20)° with the rachis; central–western Amazon region of Brazil and adjacent Colombia subsp. *spixiana*
- Leaves not plicate; basal pinna forming an angle of 41(10–87)° with the rachis 8
- 8 Rachis 51.9(38.0–70.0) cm long; western Amazonian Brazil (Acre), Peru, and Bolivia subsp. *camptoneura*
- Rachis 28.4(7.3–63.0) cm long; central–western Amazon region of Brazil and adjacent Colombia, Peru, and Bolivia, and the Guianas 9
- 9 Rachis 40.0(13.0–59.0) cm long; Guyana and adjacent Venezuela and Brazil subsp. *ambigua*
- Rachis 25.0(7.3–63.0) cm long; central–western Amazon region of Venezuela, Colombia, Brazil, Peru, and Bolivia subsp. *chelidonura*

37a. *Geonoma maxima* subsp. *maxima*

Geonoma multiflora Martius (1823: 7). Lectotype (designated by Wessels Boer 1968): BRAZIL. Pará: without locality, no date, *C. Martius s.n.* (lectotype M!).

Geonoma paraensis Spruce (1871: 112). Type: BRAZIL. Pará: near Belém, no date, *R. Spruce 69* (holotype K!).

Leaves regularly pinnate with 3–5-veined pinnae (except for basal and apical ones), not plicate; rachis 77.9(49.5–120.0) cm long; pinnae 18(4–31) per side of rachis; basal pinna 0.7(0.2–2.5) cm wide, forming an angle of 57(34–80)° with the rachis. *Inflorescences* rachillae 31(9–50).

Distribution and habitat:—From 5°10'N–5°58'S and 46°30'–60°11'W in central and eastern Amazon region of Brazil, Suriname, French Guiana, with outliers in Guyana and Brazil at 288(50–700) m elevation in lowland rainforest (Fig. 25).

A specimen from French Guiana (*de Granville 16838*) differs from the others in its narrower pinnae. Another specimen from French Guiana (*de Granville 13389*) has only four pinnae per side of the rachis. Both these specimens approach subsp. *ambigua* in their leaf morphology. The geographically isolated specimens (*Henderson 649, 664, 1055, 1075, 1163, Moore 9534, Prance 2239*) from near Manaus in Brazil have longer rachis, more pinnae, and narrower apical pinnae with narrower angles. However, there are too few specimens to test these differences, and it is not clear if the gap between them and other specimens is an artifact caused by incomplete collecting.

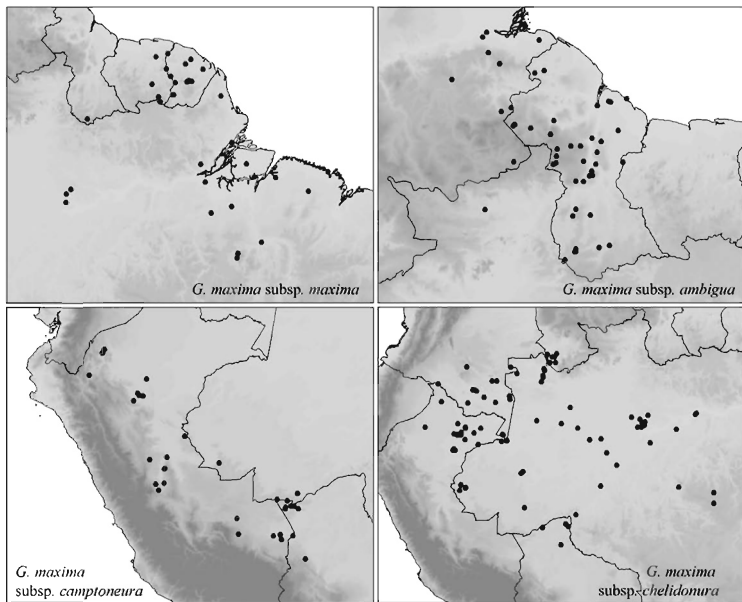


FIGURE 25. Distribution maps of *Geonoma maxima* subsp. *maxima*, *G. maxima* subsp. *ambigua*, *G. maxima* subsp. *camptoneura*, and *G. maxima* subsp. *chelidomura*.

37b. *Geonoma maxima* subsp. *ambigua* (Spruce) Henderson, *comb. & stat. nov.*

Basionym: *Geonoma ambigua* Spruce (1871: 111). *Geonoma maxima* var. *ambigua* (Spruce) Henderson (1995: 278). Type: GUYANA. Without locality, no date, *C. Appun 566* (holotype K!).

Geonoma schomburgkiana Spruce (1871: 111). Type: GUYANA. Without locality, 1837, *R. Schomburgk 705* (holotype K!, excluding leaf).