

**A NEW SPECIES OF ASTEROGYNE (PALMAE)
FROM FRENCH GUIANA¹**

JEAN-JACQUES DE GRANVILLE AND ANDREW HENDERSON

de Granville, Jean-Jacques (Centre ORSTOM de Cayenne, B.P. 165, 97323 Cayenne Cedex, France) and Andrew Henderson (New York Botanical Garden, Bronx, NY 10458-5126). A new species of *Asterogyne* (Palmae) from French Guiana. *Brittonia* 40: 76-80. 1988.—*Asterogyne guianensis*, a new species from French Guiana, is described and illustrated. The differences between this and the morphologically similar *A. spicata* are given. A map and discussion of distribution is given for all five species of the genus.

During a 1984 expedition to Mont Belvédère, in southeastern French Guiana, various palms were collected in a swamp forest. Study of these specimens showed that one represented an undescribed species of *Asterogyne*, a genus previously unknown from the Guianas.

***Asterogyne guianensis* de Granville & Henderson, sp. nov. (Figs. 1 & 2)**

Ab *A. spicata* imprimis fructibus duplo majoribus diversa.

Stem solitary, erect, 1.5-2 m tall, 3.4-5 cm in diam, with very short internodes, at base with a loose cone to 1 m high of thin, branched, yellowish-brown, adventitious roots, these bearing white, conical, minute pneumatodes. Leaves 15-18, older ones arching, younger ones more or less erect; sheath and petiole to 6 dm long, 1 cm in diam at mid-point, shallowly channeled adaxially, rounded abaxially, green, covered with deciduous brown scales, glabrescent; rachis 8-9 dm long, with similar scales to those of petiole; blade entire, membranous, oblanceolate, cuneate at base, deeply bifid at apex, 10-11 dm long, 3.5-4 dm wide at apex of rachis, green adaxially, lighter green abaxially; primary veins ca 25 per side, emerging at 30° angle from the rachis, prominent abaxially. Inflorescence spicate, to 8.5 dm long, erect and interfoliar at anthesis, becoming pendulous as fruits develop; peduncle 5-5.5 dm long, ca 0.5 cm wide, dorsiventrally compressed, densely brown-tomentose; prophyll membranous, tubular, ca 2 dm long, inserted at base of peduncle; peduncular bract tubular, green, 4-4.2 dm long, inserted near base of peduncle; rachis not dorsiventrally compressed, pale green at anthesis and becoming reddish-brown in fruit, 2.6-3 dm long, 1.5 cm in diam, very densely whitish- and brownish-tomentose; flower pits spirally arranged in 7 series, each pit ca 5 mm apart, covered with a reflexed, rounded lower lip; triads surrounded by 3 bracteoles; staminate flowers 10 mm long, white at anthesis; sepals 3, free, imbricate, 7 mm long, glumaceous, keeled, 1 much wider than the other 2; petals 3, connate below, free and valvate above, 8 mm long, glumaceous; stamens 25 or 26; filaments united below into a tube, free above; anthers 1.5 mm long, inflexed in bud, thecae separate and terminal on the arms of the bifid connective; pistillode prominent, to 2 mm long, trifid; pistillate flowers ca 5 mm long in bud; sepals 3, free, imbricate, 4 mm long, glumaceous, keeled, 1 much wider than the other 2; petals 3, connate below, free and valvate above, ca 4 mm long; staminodes united below into a tube, free above with ca 21 dentiform lobes; ovary 3-locular; style terminal, ca 3 mm long; fruit narrowly ellipsoid, strongly keeled apically, 25 × 15 mm; epicarp garnet red and shiny at maturity; mesocarp

¹ Studies on the Flora of the Guianas number 28.

ORSTOM Fonds Documentaire

N° : 25108 ex 1

Cote : B

Date : 880706

76

M

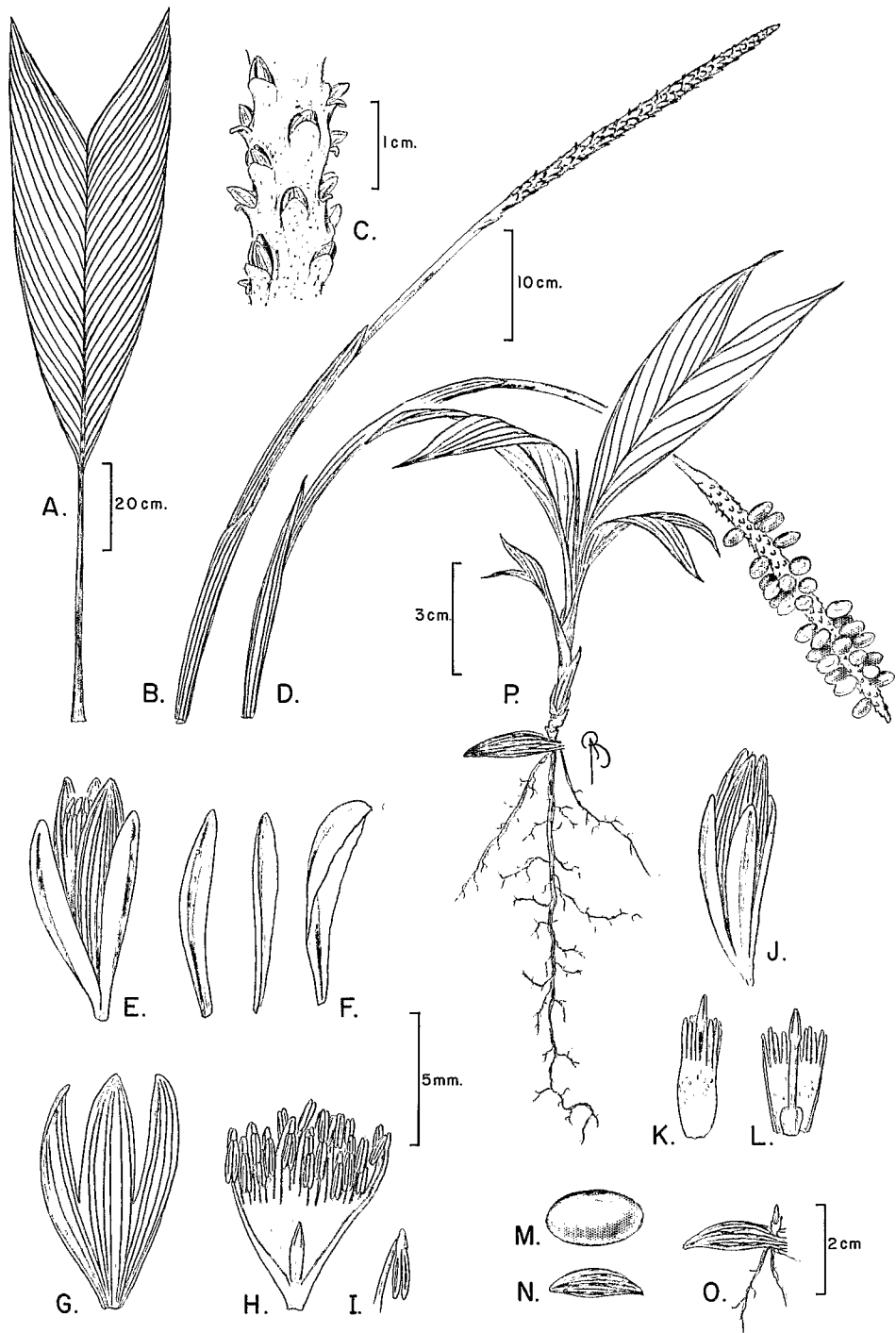


FIG. 1. *Asterogyne guianensis*. A. Leaf. B. Inflorescence before anthesis. C. Detail of inflorescence. D. Inflorescence with ripe fruits. E. Staminate flower. F. Staminate sepals. G. Staminate petals. H. Staminate flower opened. I. Stamen. J. Pistillate flower. K. Staminal tube. L. Staminal tube opened showing pistil. M. Fruit. N. Seed covered by endocarp and fibers. O. Germinating seed. P. Six month old seedling.



FIG. 2. *Asterogyne guianensis* in its natural habitat, growing under *Euterpe oleracea*.

fleshy and juicy; seed narrowly ellipsoid, 20×8 mm, with homogenous endosperm, germinating in 140 days; eophyll entire with bifid apex.

TYPE: FRENCH GUIANA. Camopi River, about 1.5 km NE of Mont Belvédère, in swamp forest, 150 m, 4 Dec 1984, *J.-J. de Granville* 7124 (HOLOTYPE: P; ISOTYPES: B, BR, CAY, NY, US).

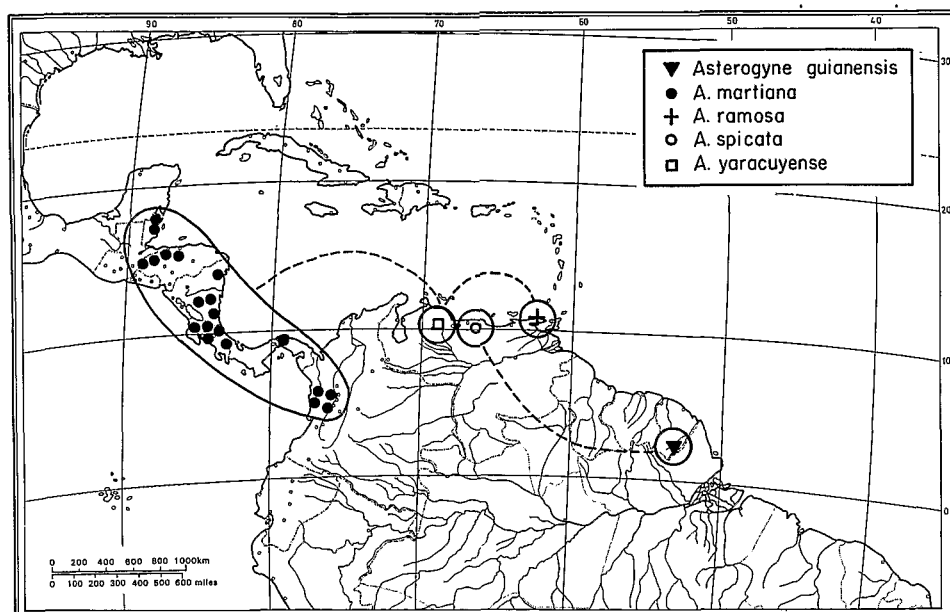


FIG. 3. Map showing distribution of the species of *Asterogyne*. Morphologically similar species are connected by dotted lines.

Asterogyne guianensis and *A. spicata* (Moore) Wessels Boer are morphologically similar species, but differ by the characters given in Table I. The most distinctive feature is the fruit of *A. guianensis*, which is twice as large as that of *A. spicata*. The habitat is also very different. *Asterogyne guianensis* grows in flat, flooded soil, mixed with *Hyospathe elegans* Mart. and overtopped by *Euterpe oleracea* Mart. (Fig. 2). On the other hand, *A. spicata* grows on steep slopes in terra firme forest with other montane species, e.g., *Dictyocaryum fuscum* (Karst.) H. Wendl., *Catoblastus* sp., and *Chamaedorea* spp. (Henderson, pers. obs.). Moore (1966) and Braun (1968) have also briefly noted the habitat of *A. spicata*.

As previously pointed out by Henderson and Steyermark (1986), most species of *Asterogyne* have remarkably limited ranges (Fig. 3), and these are associated

TABLE I
DIFFERENCES BETWEEN *Asterogyne guianensis* AND *A. spicata*

	<i>A. guianensis</i>	<i>A. spicata</i>
Stem	to 2 m long	to 8 m long
Leaf blade	3.5–4 dm wide	3 dm wide
Stamens	25 or 26	21–24
Fruits	25 × 15 mm, narrowly ellipsoid and strongly keeled apically	12–14 × 6–7 mm, ellipsoid-ovoid, slightly keeled apically
Seeds	20 × 8 mm, narrowly ellipsoid	9–10 × 5 mm, ellipsoid to obovoid
Distribution	SE French Guiana	N Venezuela
Habitat	flooded soil in swamp forest	steep slopes in mixed evergreen forest
Altitude	150 m	400–700 m

with proposed refugium. Similarly, *Asterogyne guianensis* is found in the Oyapock refugium of Brown (1982), also called the East Guiana refugium (Prance, 1982). *Asterogyne guianensis* and *A. spicata* probably were once part of a single population, and became isolated as a result of changes in climate. However, even though found in a refugium, *A. guianensis* still has a remarkably limited distribution. It grows in a restricted area measuring 50 × 200 m, and has never been seen elsewhere in French Guiana despite more than 20 years of intensive collecting by ORSTOM. This small palm with entire leaves could not have escaped notice! This surprising distribution may be related to low adaptive and reproductive capacity. *Asterogyne yaracuyense* Henderson & Steyermark also has a very limited distribution, and is presumably in danger of extinction, since the area in which it grows is being destroyed.

Acknowledgments

Figures 1 and 3 were prepared by Bobbi Angell. The Latin diagnosis was composed by Rupert Barneby, and John Dransfield reviewed the manuscript.

Literature Cited

- Braun, A. 1968. The cultivated palms of Venezuela. *Principes* 12: 39-103.
- Brown, K. S. 1982. Paleoeecology and regional patterns of evolution in neotropical forest butterflies. Pages 255-308. *In*: G. T. Prance, editor. *Biological diversification in the tropics*. Columbia University Press, New York.
- Henderson, A. & J. Steyermark. 1986. New palms from Venezuela. *Brittonia* 38: 309-313.
- Moore, H. E. 1966. *Aristeyera*, a new genus of geonomoid palms. *J. Arnold Arbor.* 47: 1-8.
- Prance, G. T. 1982. Forest refuges: evidence from woody angiosperms. Pages 137-158. *In*: G. T. Prance, editor. *Biological diversification in the tropics*. Columbia University Press, New York.