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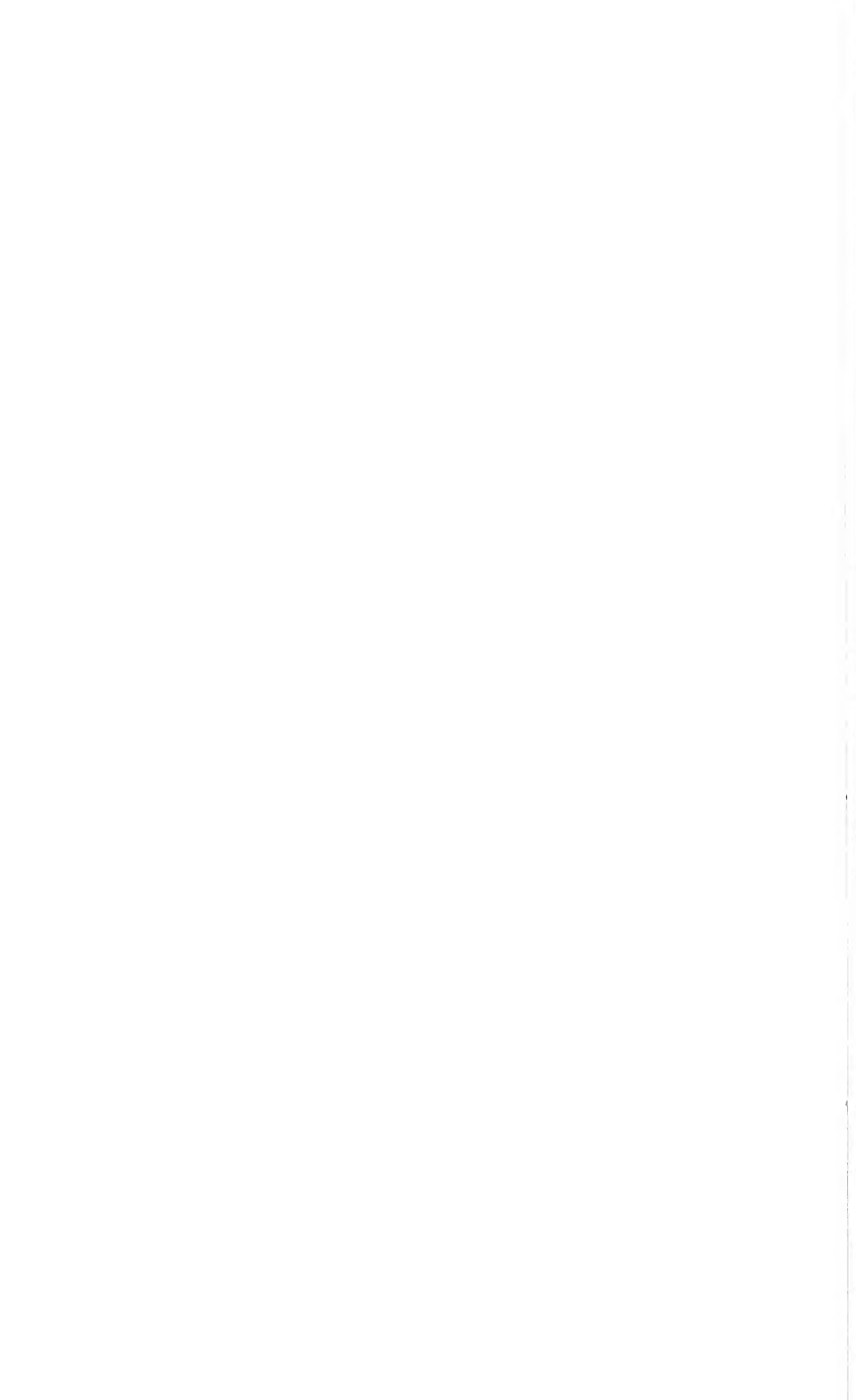
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11-14

NOTES ON THE FLORA OF COSTA RICA, I

WILLIAM C. BURGER

A NEW *EURYSTYLES* FROM NICARAGUA

ALFONSO H. HELLER

NEW SPECIES IN THE PALM GENUS

SYAGRUS MART., II

S. F. GLASSMAN

A REVISION OF THE FAMILY GEASTRACEAE

PATRICIO PONCE DE LEON

FIELDIANA: BOTANY

VOLUME 31, NUMBERS 11, 12, 13, 14

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NEW SPECIES IN THE PALM GENUS *SYAGRUS* MART., II

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New Species in the Palm Genus *Syagrus* Mart., II

Since the preparation of my last paper, bearing the same title as above (Fieldiana: Bot. 31 : 235-245, 1967). I have uncovered three additional species of *Syagrus* which heretofore have not been described. Descriptions of these are given below. This study has been supported by National Science Foundation grant no. GB3737.

***Syagrus allenii* Glassman, sp. nov. Figures 1-3.**

Palma 6-10 m. alta; truncus solitarius, 10-13 cm. in diam. Pinnis utrinque 93 in gregibus dispositis; flores masculi et 11-12 et 8-9 mm. alti; flores feminei 6-7 mm. alti; fructus ca. 2.5 cm. longus et 2.2 cm. diam.

Palm 6-10 m. tall, trunk solitary, 10-13 cm. in diam. Petiole incomplete; rachis of leaf up to 187 cm. long; pinnae about 93 pairs, in loose clusters of 2-3, grayish-green above, yellowish-green below, middle ones up to 50 cm. long and 3.4 cm. wide, mostly with acute or oblique tips; spathe incomplete, up to 9 cm. wide; spadix incomplete, each branch up to 32 cm. long; lower male flowers 11-12 mm. long and those above 8-9 mm. long; female flowers 6-7 mm. long. 4-5 mm. wide, sepals and petals mostly with acute or blunt tips; fruit obovate, up to 2.5 cm. long and 2.2 cm. in diam., endocarp 1.5-2 mm. thick, cavity trivittate, smooth; seed not seen.

COLOMBIA: Dept. Meta, llanos de San Martín, common in forest patches, Oct. 21, 1945, *P. Allen 3352* (MO, holotype; BH).

Another specimen [*P. Allen 3277* (MO, BH) Colombia: Dept. Vaupes, Río Cuduyari, Jan. 23, 1944] may be the same species, but the leaf rachis is shorter, the pinnae are narrower and there are no female flowers for comparison. The fruits, however, are almost identical in size and shape.

S. allenii appears to be most closely related to *S. orinocensis* (Spruce) Burret (Figs. 4-5) from Venezuela and Colombia. Both species are approximately the same size, have their pinnae arranged in loose clusters of two or three, and have female flowers which are similar in size and shape. *S. allenii* can be distinguished from the latter species mainly by the longer leaf rachis (187 cm., rather than 128 cm.), wider pinnae (up to 3.4 cm., rather than up to 2.5 cm.)



FIG. 1. *S. alleni*. Holotype (M). Part of spadix (right) and individual rachillae.



FIG. 2. *S. alleni*. Parts of leaf. Left to right: lower (with part of petiole), middle, and upper.



FIG. 3. *S. alleni*. External view of fruits.

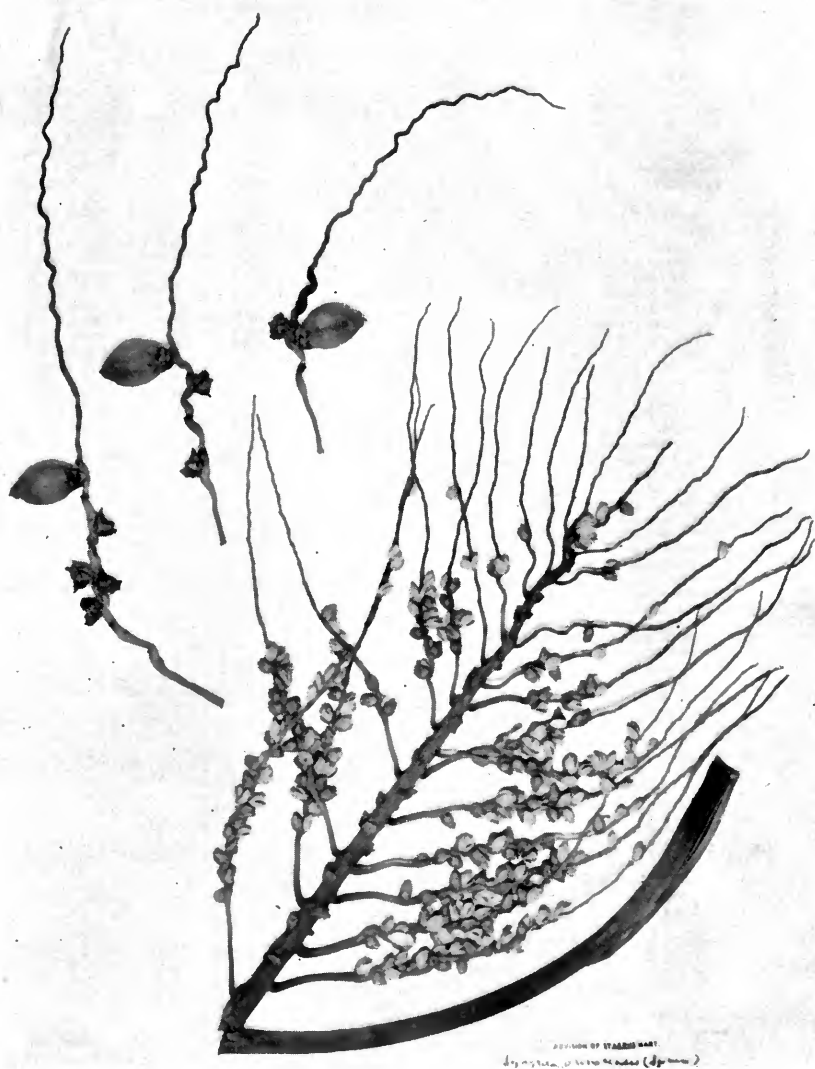


FIG. 4. *S. orinocensis*. Wurdack and Monachino 40852 (BH). Complete flowering spadix (right) and individual rachillae with attached fruits.

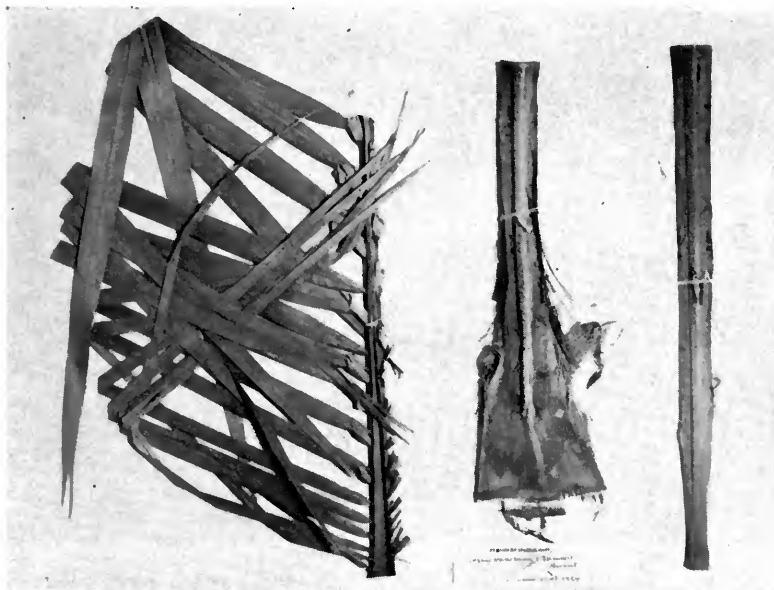


FIG. 5. *S. orinocensis*. Parts of petiole and basal leaf sheath (left and center) and part of leaf blade with pinnae.

which have acute or oblique tips rather than acuminate tips, and shorter, obovate, non-beaked fruits rather than longer, ovate, beaked fruits (2.5×2.2 cm., rather than 3×1.9 cm.). The new species is also related to *S. stenopetala* Burret from Venezuela, but this species has narrower pinnae (up to 2.8 cm. wide) and ovate fruits up to 3.7 cm. long with a beak about 8 mm. long.

Besides *S. allenii* and *S. orinocensis*, *S. sancona* (H.B.K.) Karsten also has been reported from Colombia. The latter species has wider pinnae (up to 4.5 cm.) arranged in tight clusters of three or four, and the perianth of the female flowers has prominent veins. *S. argentea* (Engel) Becc. and *S. chiragua* (Karstan) Wendl., originally described from Colombia, have been relegated to *species dubia* because of inadequate descriptions and lack of type material.

***Syagrus duartei* Glassman, sp. nov. Figures 6-9.**

Palma acaulis. Folia ca. 125 cm. longa; piniis utrinque 64 in gregibus dispositis; spadix (pars ramosa) ca. 35 cm. longa, rachillae ca. 5-8; flores masculi et 16-20 et 10-15 mm. alti; flores feminei 20-25 mm. alti; fructus 3 cm. longus et 3 cm. diam.

Acaulescent palm. Petiole up to 7 cm. long, 1.5 cm. wide, sheathing base up to 20 cm. long, deteriorating into separate marginal fibers with age; rachis of leaf up to 84 cm. long; pinnae up to 64 pairs, mostly in close clusters of 3 (occasionally



FIG. 6. *S. duartei*. Serra do Cipó. Acaulescent plants growing in rocky outcrops.



FIG. 7. *S. duartei*. Serra do Cipó. J.C. Gomes holding leaves and spadices.

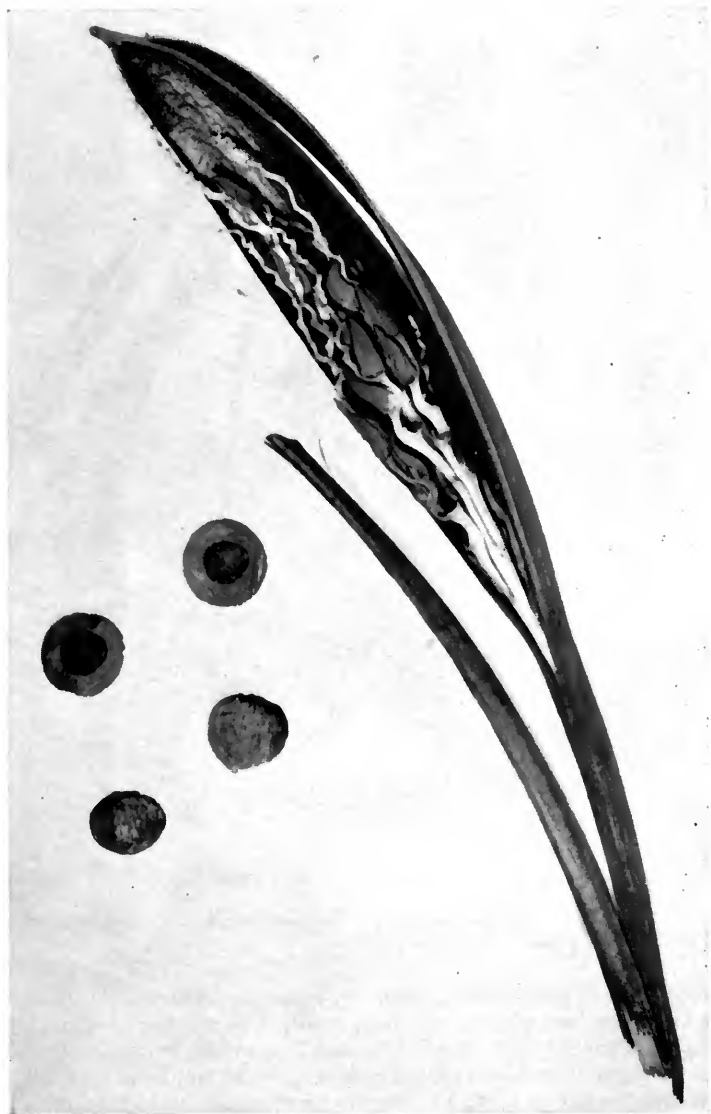


FIG. 8. *S. duartei*. a. Holotype (RB). Spathe and spadix showing rachillae and flowers (right). b. *Glassman and Gomes 8033* (CHI). Sectioned and whole fruits (left).



FIG. 9. *S. duartei*. Holotype (RB). Whole leaf (folded) showing basal leaf sheath, petiole and closely clustered pinnae.

2 or 4 in a cluster), upper surface glaucous, becoming eglaucous with age, middle ones up to 34 cm. long and 2.4 cm. wide, mostly with oblique or obtuse tips; expanded part of spathe up to 45 cm. long and 5 cm. wide, brownish tomentose to glabrous on outside; branched part of spadix up to 35 cm. long, branches 5-8 in number, each branch up to 22 cm. long; lower male flowers 16-20 mm. long and those above 10-15 mm. long, sepals 3-4 mm. long; female flowers mostly 20-25 mm. long and 6-8 mm. wide, occasionally smaller (16-19 mm. long); fruit more or less turbinate, up to 3 cm. long and 3 cm. in diam., endocarp 6-8 mm. thick, cavity smooth; seed not seen.

BRAZIL: State of Minas Gerais, Serra do Cipó, growing between blocks of quartzite, very frequent, Aug. 24, 1961, A. P. Duarte 5706



FIG. 10. *S. glaucescens*. Isotype (F). Glazou 20024. Part of leaf showing folded pinnae with hooked and oblique tips and aristae; and sectioned fruits with attached seeds.



FIG. 11. *S. glaucescens*. Glassman and Gomes 8112 (CHI). Spathes and spadices.

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REVISION OF SYLAGUS WART.

Syagrus mendozensis Standley
HOLOTYPE

S. F. GLAZIER Jan 1907

Syagrus
H. S. GARDNER JR.
BAPTIST HERBARIUM, CHICAGO, ILLINOIS

11691



P. 004546 PLANTS OF BRAZIL
Cocca sp.
(det. Cook)
Vicinity of Mendonça, Minas Gerais.
Stemless lf. 5-1 ft. long, naked at base
for 1 ft. Sept. 28, 1936
No. 4086 W. A. ARTHUR, Collector

FIG. 12. *S. mendozensis*. Holotype (BH). Left to right: Flowering spadix with some very young fruits, spathe and part of leaf.



FIG. 13. *S. mendanensis*. Isotype (US). Left to right: Part of leaf showing loose clusters of pinnae, spadices with fruits in various stages of development, and spathe.



FIG. 14. *S. pleioclada*. Left to right: a. Glassman and Gomes 8041 (CHI). b. Glassman and Gomes 8037 (CHI). c. Mello Barreto 1206 (RB). Relatively wide spathes with twisted and gnarled spadices.

(RB, holotype); same locality data, alt. 1300 m., July 10, 1965, *S. F. Glassman & J. C. Gomes 8033, 8034, 8035, 8036* (CHI).

Syagrus duartei does not seem to be closely related to any other acaulescent species of *Syagrus*; however, it resembles most closely *S. glaucescens* Glaz. ex Becc. (Figs. 10–11), a tree up to 3 m. tall and known only from the vicinity of Diamantina, Minas Gerais. Both species have a spathe and spadix about the same size and clustered pinnae of approximately the same length and width with oblique tips. Besides overall size, the new species differs from *S. glaucescens* in having fewer and longer spadix branches (5–8, rather than 12–16 and up to 22 cm., rather than up to 12 cm.), and turbinate rather than broadly ovate fruits with an endocarp 6–8 mm. thick rather than 2–4 mm. thick.

S. duartei is common in rocky outcrops of Serra do Cipó covering a radius of about 10 km. It does not occur on the lower level areas of this mountain range where a trunkless species of *Allogoptera* is found. *S. pleioclada* Burret, another acaulescent palm, grows in the same general rocky areas as the new species, but at slightly lower elevations and it seems to be less frequent.

***Syagrus mendanhensis* Glassman, sp. nov. Figures 12–13.**

Palma acaulis. Folia ca. 90–120 cm. longa; pinnis utrinque 18 in gregibus dispositis; spadix (pars ramosa) ca. 21 cm. longa, rachillae ca. 9; flores masculi 8–10 mm. alti; flores feminei 12 mm. alti; fructus 3 cm. longus et 0.9 cm. diam.

Acaulescent palm. Leaf 3–4 feet long *vide* Archer; petiole up to 37 cm. long, about 1 cm. wide, sheathing base not seen; rachis of leaf up to 58 cm. long; pinnae about 18 pairs, in loose clusters of 2–4, occasionally single, glabrous on both surfaces, middle ones up to 38 cm. long and 0.9 cm. wide, mostly with acuminate tips, intervals between clusters mostly 3–5 cm.; expanded part of spathe about 30 cm. long and 3.2 cm. wide; branched part of spadix 21 cm. long, branches up to 9 in number, each branch up to 16 cm. long; male flowers 8–10 mm. long; female flower 12 mm. long, 5 mm. wide; fruit (immature) oblong-ovate, up to 3 cm. long and 0.9 cm. in diam.; beak about 4 mm. long; seed not seen.

BRAZIL: State of Minas Gerais, vicinity of Mendanha, along road, Sept. 24, 1936, *W. A. Archer 4086* (BH, holotype-flowering; U. S.-fruiting).

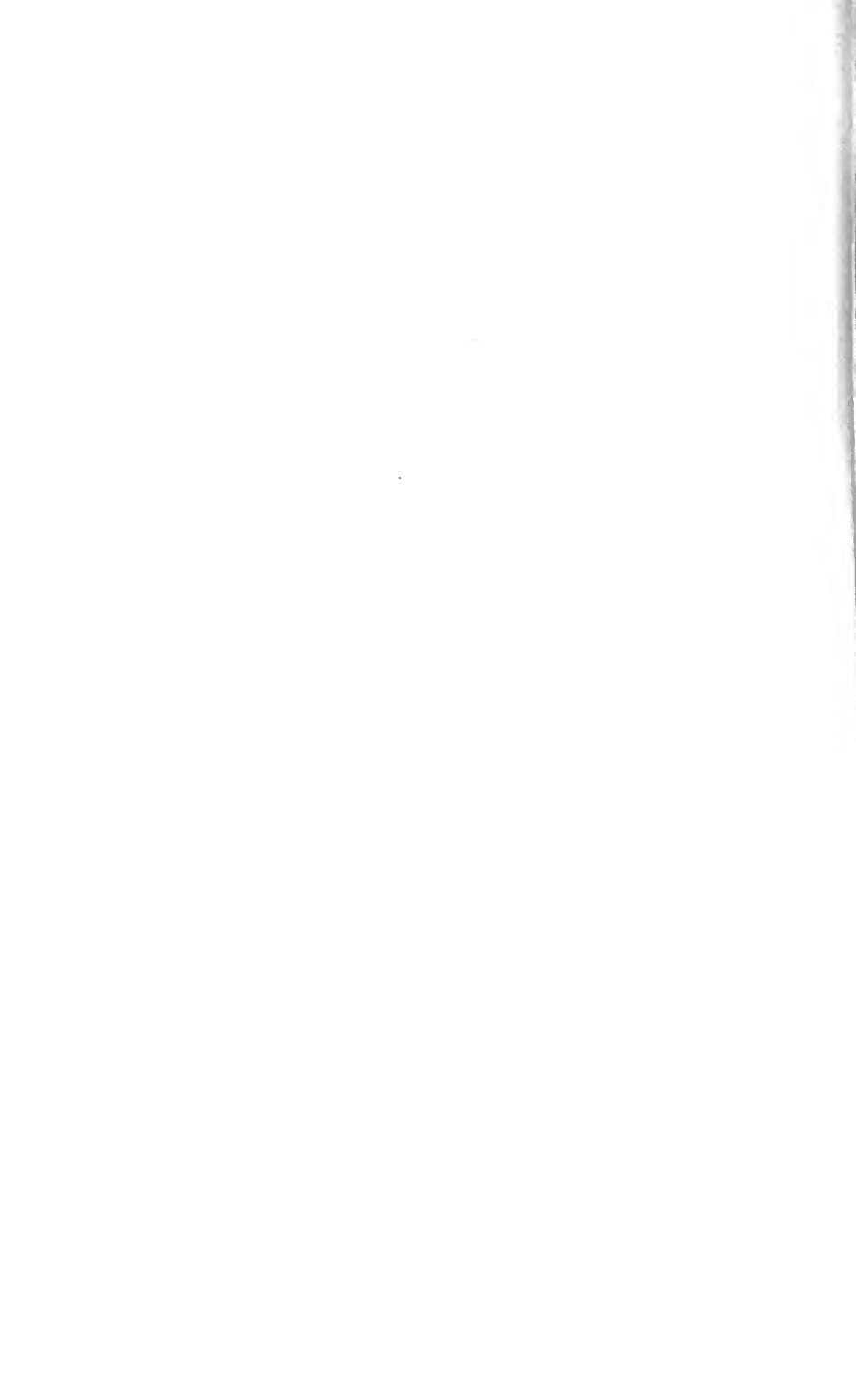
Syagrus mendanhensis has the same general appearance as *S. pleioclada* Burret (Figs. 14–15), another acaulescent palm from Serra do Cipó. Both species have their pinnae arranged in loose clusters (with fairly long intervals between clusters) and have acuminate tips, and the female flowers are approximately of equal length. *S. mendanhensis* can be easily distinguished from the latter species by the longer



FIG. 15. *S. pleioclada*. Glassman and Gomes 8038 (CHI). Whole leaf showing pinnae with loose clusters and long intervals between clusters.

and narrower spathes (30 cm. long and 3.2 cm. wide, rather than 18 cm. long and 8 cm. wide); the longer (21 cm., rather than 9 cm.), erect spadix instead of a short, much twisted and gnarled spadix; and fewer spadix branches (9, rather than 14) which are much longer (up to 16 cm., rather than 1.0–3.5 cm.).

The new species is also found in scattered localities in the vicinity of Diamantina, about 15 km. S.E. of Mendaña. During July, 1965 I collected several sterile specimens of this species, but unfortunately they were lost in transit.



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