

Revision of the Genus *Pandanus* Stickman. Part 37
***Pandanus* on Aldabra Island, Indian Ocean¹**

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KEY TO SECTIONS AND SPECIES

- A. Fruits with 1–3 stigmas,
 - B. Phalanges with 2–3 (–1) stigmas, these contiguous; syncarp subglobose; leaves 5.6 cm wide § *Mammillarisia*. *P. aldabraensis*.
 - B. Drupes with a single stigma; syncarp ellipsoid; leaves 5.6 cm wide § *Microstigma*. *P.* sp. V. 1a.
- A. Phalanges with 9–17 stigmas, these separated § *Pandanus*.
 - C. Phalanges 6–7 cm long; central apical sinuses 8–13 mm deep; leaf middle 5.5 cm wide, and there with 50 parallel secondary veins in each half *P. chelyon*.
 - C. Phalanges 4.1–6 cm long; central apical sinuses 1–7 mm deep,
 - D. Central apical sinuses 2–4 mm deep, but the near marginal ones 1–2 mm deep; phalanges 5.3–6 cm long; leaf middle 4.7 cm wide, and there with 45 parallel secondary veins in each half *P. impar*.
 - D. Central apical sinuses 4–7 mm deep,
 - E. Phalanges 4.1–4.5 cm long; the near marginal apical sinuses 2–4 mm deep *P. alloios*.
 - E. Phalanges 5–5.8 cm long; the near marginal sinuses as deep or deeper than the central apical ones,
 - F. Phalanges 5–5.3 cm long; central apical sinuses 6–7 mm deep *P. subcubicus*.
 - F. Phalanges 5.3–5.8 cm long; central apical sinuses 4–6 mm deep *P. intraconicus*.

ALDABRA is an uninhabited island in the Indian Ocean, to the north of Madagascar. Until recently there was known from it only a single collection of *Pandanus*, made in 1895, of an immature pistillate specimen. Now, due to the threat of wide destruction of the terrain and its biota, in order to construct an airfield, intensive biological studies have been made on the island. In 1968 F. R. Fosberg gathered collections of *Pandanus*, and submitted them to the writer. They form the basis for the bulk of this report.

Pandanus aldabraensis sp. nov. (sect. *Mammillarisia*)

Fig. 328

DIAGNOSIS HOLOTYPI: Arbor 2.5 m alta sparse ramosa est, radicibus incognitis, trunco cum cortice stramineo ad subbadio lucido laevi fere inermi, citatricibus foliorum congestis, ramulis 2.5–3 cm diametro, foliis 42–63 cm longis proxima basem 2.8–3.4 cm latis in medio 2.6–4.2 cm latis coriaceis V-sulcatis 2-plicatis supra viridibus lucidis infra pallide viridibus in sectione mediali cum 27–28 nervis parallelis secundariis in dimidio quoque nervis tertiis transversis supra paene evidentis infra conspicuis et reticula oblonga vel quadrata

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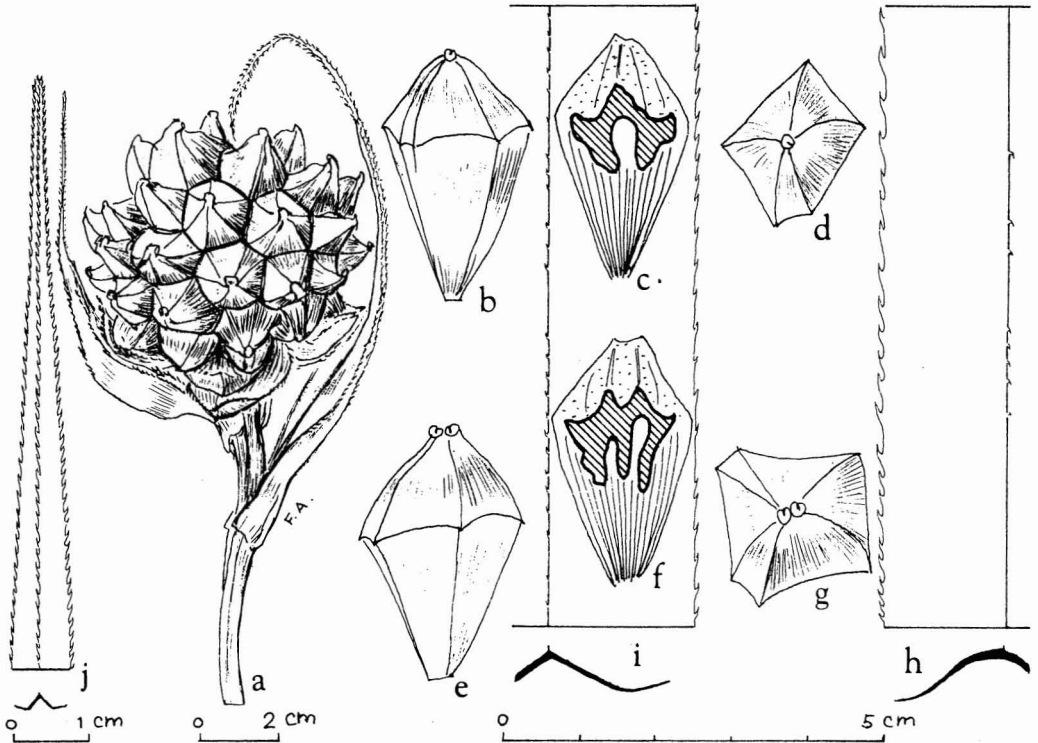


FIG. 328. *Pandanus aldabraensis* St. John, from holotype. *a*, inflorescence, $\times \frac{1}{2}$; *b*, 1-celled drupe, lateral view, $\times 1$; *c*, 1-celled drupe, longitudinal median section, $\times 1$; *d*, 1-celled drupe, apical view, $\times 1$; *e*, 2-celled phalange, lateral view, $\times 1$; *f*, 2-celled phalange, longitudinal median section, $\times 1$; *g*, 2-celled phalange, apical view, $\times 1$; *h*, half of leaf base, lower side, $\times 1$; *i*, half of leaf middle, lower side, $\times 1$; *j*, leaf apex, lower side, $\times 1$.

formantibus lamina subligulata sed in parte $\frac{1}{3}$ apicali in apice 8 cm longo trigono subulato eo in puncto 10 cm ex apice 8 mm lato basi inermi pallida, ex 4–5 cm marginibus cum aculeis 0.7–2.2 mm longis 1–7 mm separatis subarcuatis crasse subulatis compressis valde adscendentibus stramineis, ex 6.5–8.5 cm midnervo infra cum aculeis 0.7–1 mm longis 1.5–5 mm separatis arcuatis subulatis adpese reflexis stramineis cum aculeis 1–2.2 mm longis 2–5 mm separatis arcuatis crasse subulatis compressis valde adscendentibus stramineis cum apicibus rubris parte majoribus minoribus alternantibus, midnervo infra vicinali cum aculeis 0.5–1 mm longis 1–4 mm separatis subarcuatis subulatis valde adscendentibus stramineis, apice subulato cum marginibus et midnervo infra cum aculeis 1–3 mm separatis biformatis eis majoribus 0.3–0.7 mm longis arcuatis crasse subulatis com-

pressis valde adscendentibus stramineis et plerumque cum illis minoribus 0.2–0.3 mm longis subarcuatis crasse subulatis adscendentibus stramineis alternantibus, infrutescentia cum syncarpio solitario, pedunculo 13–15 cm longo in apice 15 mm diametro clavato trigono et cum 2–3 bracteis foliosis ea majora 29 cm longa 4.4 cm lata lanci-gladiata aculeata, bractea mediali 18 cm longa 4 cm lata lanceolata, bracteis apicalibus compluribus eis cum corpore 3.5–5 cm longo 3–4.5 cm lato naviculari chartacea aculeata et cum apice subulato 1–11 cm longo foliaceo, syncarpio 7–8 cm diametro subgloboso viridi cum 44–50 phalangibus eis 3.2–3.4 cm longis 1.8–2.4 cm latis 1.5–2.1 cm crassis rhomboideis parte $\frac{3}{8}$ supera libera pyramidali 5–6-angulosa, phalangibus basalibus et lateralibus cum apicibus paulo inclinatis sinibus apicalibus clausis, stigmatibus (1–) 2–3 et 1.5–2.5 mm

latis reniformibus apicalibus horizontalibus pallide badiis papillosis, endocarpio in parte $\frac{3}{8}$ supera et 13–17 mm longo osseoso rubri-badio corpore late cuniformatis sed lateribus cum lobis sinuosis apice cum projectionibus lanceoloideis supra semines humeris rotundatis adscendentibus lateribus lateralibus 1.5–4 mm crassis intra laevibus lucidis clare rubri-badiis, seminibus 7–8 mm longis ellipsoideis, mesocarpio apicali 7–9 mm longo indiviso parenchymatoso cum fibris longitudinalibus, mesocarpio basali 14–15 mm longo fibroso et carnosio, drupis 1-loculatis cum endocarpio in parte $\frac{3}{8}$ supera et 11–12 mm longo patelliformi sed lateribus cum lobis brevibus sinuosis apice conico lateribus lateralibus 4–5 mm crassis, semine 6 mm longo late ellipsoideo, mesocarpio basali 15–16 mm longo.

DIAGNOSIS OF HOLOTYPE: Tree 2.5 m tall, sparsely branched; prop roots not recorded; bark of trunk straw-colored to brownish, shining, smooth, almost without prickles, the leaf scars crowded; branchlets 2.5–3 cm in diameter; leaves 42–63 cm long, 2.8–3.4 cm wide near the base, 2.6–4.2 cm wide at the middle, coriaceous, V-sulcate, 2-pleated, above green and shiny, below pale green, at midsection with 27–28 parallel secondary veins in each half, the tertiary cross veins scarcely visible above, but conspicuous below, forming short oblong or square meshes, the blade subligulate, but in the outer $\frac{1}{3}$ narrowing into the 8 cm trigonous subulate apex, this at the point 10 cm down 8 mm wide, the base unarmed, pale; beginning at 4–5 cm the margins with prickles 0.7–2.2 mm long, 1–7 mm apart, subarcuate thick subulate, compressed, strongly ascending, stramineous; beginning at 6.5–8.5 cm the midrib below with prickles 0.7–1 mm long, 1.5–5 mm apart, arcuate subulate, appressed reflexed, stramineous with red tips; at midsection the margins with prickles 1–2.2 mm long, 2–5 mm apart, arcuate thick subulate, compressed, strongly ascending, stramineous with red tips, partly large and small alternating; the nearby midrib below with prickles 0.5–1 mm long, 1–4 mm apart, subarcuate subulate, strongly ascending,

stramineous; on the subulate apex the margins and midrib below with prickles 1–3 mm apart, mostly of 2 kinds, large ones 0.3–0.7 mm long, arcuate thick subulate, compressed, strongly ascending, stramineous, mostly alternating with small ones 0.2–0.3 mm long, subarcuate thick subulate, ascending, stramineous; infructescence of a solitary syncarp; peduncle 13–15 cm long, 15 mm in diameter at apex, clavate, trigonous, with 2–3 foliaceous bracts along the stem, the lowest one 29 cm long, 4.4 cm wide, lance gladiate, prickly, the median ones 18 cm long, 4 cm wide, lanceolate, at the apex with several bracts subtending the syncarp, these with a body 3.5–5 cm long, 3–4.5 cm wide, navicular, chartaceous, prickly, and bearing a subulate, foliaceous apex 1–11 cm long; syncarp 7–8 cm in diameter, subglobose or slightly more elongate, green, bearing 44–50 phalanges, these 3.2–3.4 cm long, 1.8–2.4 cm wide, 1.5–2.1 cm thick, rhomboidal, the upper $\frac{3}{8}$ free, pyramidal, 5–6-angled, the apices of the basal and lateral ones slightly inclined and some with a concave trough leading to the apex, the sinuses between the (1–)2–3 stigmas closed; stigmas 1.5–2.5 mm wide, reinform, apical, horizontal, light brown, papillose; endocarp in the upper $\frac{3}{8}$ and 13–17 mm long, bony, reddish brown, the body broadly cuniform, but the sides with sinuous lobes, the apex with a conic or lanceoloid projection over each seed, the shoulders rounded, ascending, lateral walls 1.5–4 mm thick, within smooth, shining, bright reddish brown; seeds 7–8 mm long, ellipsoid; apical mesocarp 7–9 mm long, undivided, of solid tissue of parenchyma traversed by longitudinal fibers; basal mesocarp 14–15 mm long, fibrous and fleshy; the 1-celled drupes with the endocarp in the upper $\frac{3}{8}$ and 11–12 mm long, patelliform, but the sides with short sinuous lobes, the apex conic and half as wide as the drupe, lateral walls 4–5 mm thick; seed 6 mm long, and broadly ellipsoid; basal mesocarp 15–16 mm long.

EXPANDED DESCRIPTION: Tree 2.5–3 m tall; stem with scattered sharp prickles; syncarp 7–9.5 cm long, ellipsoid to subglobose; phalanges 2.5–3.4 cm long, 1.4–2.4 cm wide,

1–2.1 cm thick.

HOLOTYPE: Western Indian Ocean, Aldabra Island, South Island, Takamaka Area, lagoon side, occasional locally in mixed scrub on somewhat rough limestone, Jan. 26, 1968, *F. R. Fosberg 49,058* (BISH).

SPECIMENS EXAMINED: Aldabra Island, South Island, Takama (Wilson's) Well, from same tree as the type, Feb. 12, 1968, *Fosberg 49,379* (BISH, K, US); ditto, Gionnet Channel Camp area, occasional in mixed scrub forest in moderately rough limestone, Feb. 27, 1968, *Fosberg 49,589* (BISH, K, US); ditto, *Fosberg & K. A. McKenzie 49,590* (BISH, K, US).

DISCUSSION: *P. aldabraensis* is a member of the section *Mammillarisia*, as is its closest relative, *P. Pervilleanus* Kurz, of the eastern shore of Madagascar, a species with the syncarp 6.5 cm in diameter, globose; phalanges 3.4–3.6 cm long; basal mesocarp 5 mm long; endocarp apex subtruncate; leaf middle with 33 parallel secondary veins in each half, and there the margins with prickles 0.7–1.3 mm long, 7–10 mm apart, arcuate stout subulate, strongly ascending, stramineous. *P. aldabraensis* has the syncarp 7–9.5 cm long, 7–8 cm in diameter, ellipsoid to subglobose; phalanges 2.5–3.4 cm long; basal mesocarp 14–16 mm long; endocarp with conic or lanceoloid projections over the seeds; leaf middle with 27–28 parallel secondary veins in each half, and there the margins with prickles 1–2.2 mm long, 2–5 mm apart, arcuate thick subulate, compressed, strongly ascending, stramineous with red tips, partly large and small alternating.

The new epithet is formed from the name of the type locality, Aldabra, and *-ensis*, the Latin adjectival locality suffix.

Pandanus alloios sp. nov. (sect. *Pandanus*)

Fig. 329

DIAGNOSIS HOLOTYPI: Partes alteres incognitae sunt, phalangibus 4.1–4.5 cm longis

3.8–4.8 cm latis 3.7–4 cm crassis cuboidi-uniformatis apice subconvexo ad subtruncato 4–5-anguloso angulis secundariis nullis lateribus inferis planis sinibus lateribus nullis parte $\frac{1}{4}$ supra libera cum lateribus subconvexis laevibus lucidis, carpelis 11–14 radiatis hinc phalangibus proxima apicem latissimis, carpelis marginalibus cum apicibus oblate hemisphaericis ad convexis et cum areola concava 3–5 mm lata distali, stigmatibus 1.5–2 mm latis reniformibus ad orbicularibus truncatis apicalibus elevatis obliquis badiis papillois, sinibus proximalibus fissura angusta $\frac{2}{3}$ ad fundam extensa, carpelis centralibus cum apicibus conicis subangulosis et $\frac{1}{4}$ – $\frac{1}{2}$ tam grandis quam illis marginalibus, stigmatibus ellipticis ad ovatis, sinibus centralibus apicalibus 2–4 mm profundis V-formatis sed sinibus fere marginalibus 1–2 mm profundis late V-formatis, endocarpio in parte $\frac{2}{5}$ infera et 15–17 mm longo osseoso obscure rubri-badio transverse ellipsoideo et in apice supra semines cum projectionibus lanceoloideis brevibus humeris elevatis curvatis fere horizontalibus lateribus lateralibus 2–3 mm crassis intra pallide rubri-badiis laevibus lucidis, mesocarpio in apice carpelae cuiusque cavernam 12–19 mm longam cum aerenchyma membranis albis multis et fibris longitudinalibus paucis formanti, mesocarpio basali 6–7 mm longo fibroso et carnosio.

DIAGNOSIS OF HOLOTYPE: Vegetative parts all unknown; phalanges 4.1–4.5 cm long, 3.8–4.8 cm wide, 3.7–4 cm thick, cuboid cuneiform, the apex low convex to subtruncate, 4–5-angled, the secondary angles wanting, lower sides flat, lateral sinuses wanting, the upper $\frac{1}{4}$ free, its sides gently convex, smooth, shining; carpels 11–14, radial, hence the phalanges broadest near the top; marginal carpels with apices oblate hemispheric to convex, with a shallow concave platform 3–5 mm wide, distal of the stigma; their stigmas 1.5–2 mm wide, reniform to orbicular, truncate, apical, elevated and oblique, brown, papillose; proximal sinuses a narrow crack running $\frac{2}{3}$ way to valley bottom; central carpels with apices slightly angled conic, $\frac{1}{4}$ – $\frac{1}{2}$ as large as the

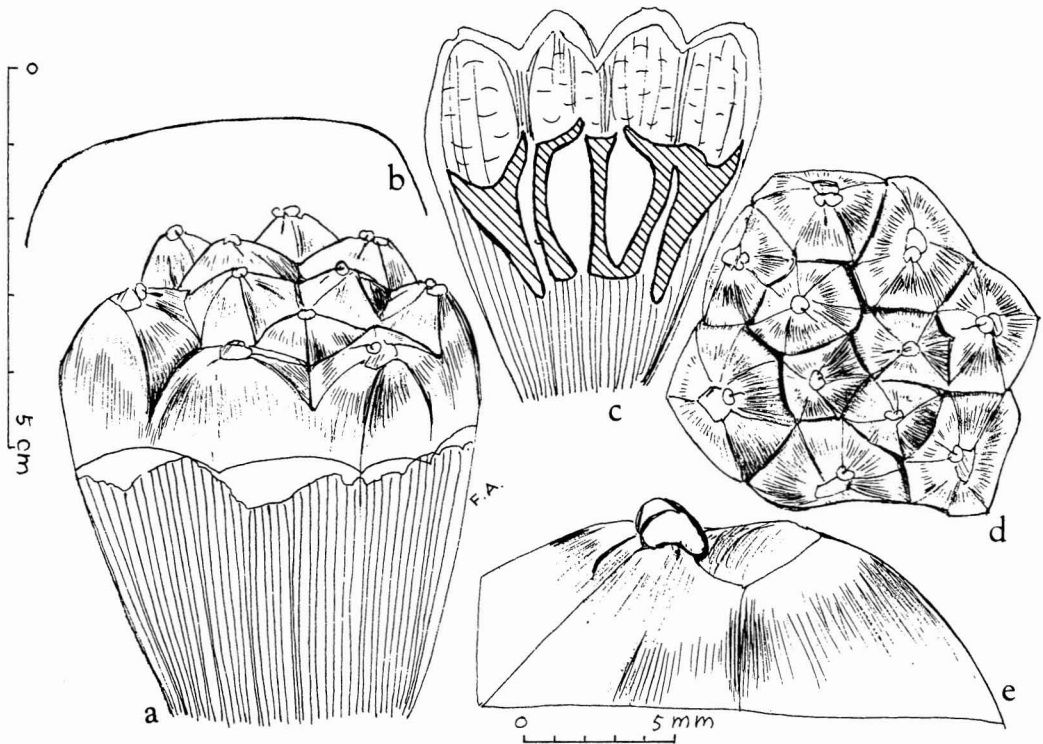


FIG. 329. *Pandanus alloios* St. John, from holotype. *a*, phalange, lateral view, $\times 1$; *b*, profile of phalange apex, $\times 1$; *c*, longitudinal median section of phalange, $\times 1$; *d*, apical view of phalange, $\times 1$; *e*, carpel apex with stigma, platform, and proximal sinus, oblique view, $\times 4$.

marginal ones; the stigmas elliptic to ovate; central apical sinuses 2–4 mm deep, V-shaped, but the near marginal sinuses 1–2 mm deep, wide V-shaped; endocarp in the lower $2/5$ and 15–17 mm long, bony, dark reddish brown, transversely ellipsoid, the apex with a short lanceoloid projection over each seed, the shoulders high up, curved, but nearly horizontal, the lateral walls 2–3 mm thick, within light reddish brown, shining, smooth; mesocarp forming in the apex of each carpel a cavern 12–19 mm long, with aerenchyma of many white membranes and a few longitudinal fibers; basal mesocarp 6–7 mm long, fibrous and fleshy.

HOLOTYPE: Western Indian Ocean, Aldabra Island, South Island, northwest of Cinq Cases Dune, mixed scrub forest, largely *Guettarda* on moderately rough limestone (from the same population as no.

49,196 to show variation), Feb. 6, 1968, *F. R. Fosberg* 49,233 (BISH). Isotypes (K, US).

DISCUSSION: *P. alloios* is a member of the section *Pandanus*, as is its closest relative, *P. impar* St. John, also of Aldabra Island, a species with the phalanges 5.3–6 cm long, 4.8–5.8 cm wide, 4.5–5.1 cm thick, the apex low convex; marginal carpels with apices low convex; central carpels with apices $2/3$ as large as the marginal and oblate pyramidal; central apical sinuses 2–4 mm deep, V-shaped, but the near marginal ones 1–2 mm deep and very shallow; endocarp in the upper $3/7$ and 17–18 mm long; basal mesocarp 19–22 mm long. *P. alloios* has the phalanges 4.1–4.5 cm long, 3.8–4.8 cm wide, 3.7–4 cm thick, the apex low convex to subtruncate; marginal carpels with apices oblate hemispheric to convex; central carpels $1/4$ – $1/2$ as large as the marginal and their apices slightly

angled conic; central apical sinuses 2–4 mm deep, V-shaped, but the near marginal sinuses 1–2 mm deep, wide V-shaped; endocarp in the lower 2/5 and 15–17 mm long; basal mesocarp 6–7 mm long.

The new epithet is the Greek adjective *allos*, different, and it is given with reference to the different inner and outer sinuses on the phalange apex.

Pandanus chelyon sp. nov. (sect. *Pandanus*)

Fig. 330

DIAGNOSIS HOLOTYPE: Arbor depressa decumbens est (caulibus radicibusque incognitis), foliis 1.25–1.33 (+0.05–0.2?) m longis proxima basem 6.5–6.8 cm latis in medio 5.5 cm latis coriaceis supra viridibus lucidis infra pallide viridibus glaucis in sectione mediali cum 50 nervis parallelis secundariis in dimidio quoque, nervis tertiis transversis supra proxima basem evidentis et reticula anguste oblonga formantibus lamina gladiata ex basi ad apicem trigonum subulatum deminuenti (apice interito et basi non visa), proxima basem marginibus cum aculeis 2–3.3 mm longis 2.5–8 mm separatis rectis subulatis compressis eis inferis cum basi geniculata illis sequentibus cum basi curvata stramineis cum apicibus clare rubris, ex fere 15 cm midnervo infra cum aculeis 2–3 mm longis 10–23 mm separatis arcuatis subulatis adpresse reflexis rubris, in sectione mediali marginibus cum aculeis 2–3 mm longis 3–5 mm separatis subarcuatis subulatis adpresse adscendentibus basibus stramineis apicibus rubris, midnervo vicinali infra cum aculeis 1–1.8 mm longis 3–6 mm separatis subarcuatis subulatis adpresse adscendentibus stramineis majoribus minoribus alternantibus, proxima apicem marginibus et midnervo infra cum aculeis 0.4–0.8 mm longis 3–7 mm separatis crasse subulatis adpresse adscendentibus pallide badiis, syncarpiis in fructu pendentibus solitariis et cum 49 phalangibus, pedunculo 35 cm longo 2 cm diametro cernuo foliosibracteato, phalangibus 6–7 cm longis 4.5–7.3 cm latis 4.3–5.3 cm crassis late cuniformalis 4–6-angulosis apice alte con-

vexo vel convexo lateribus lateralibus inferis planis sinibus lateralibus nullis parte 1/3 supera libera cum lateribus laevibus lucidis subplanis tum supra curvatis, carpelis 11–16 radiatis, carpelis marginalibus cum apicibus hemisphaericis ad late ovoideis cum stigmatibus 2.2–2.5 mm diametro horizontalibus prostratis suborbicularibus apicalibus badiis papillosis, sinibus proximalibus fissura 1/4–1/2 ad fundam extensa, carpelis interioribus cum apicibus subaequalibus ad 1/2 tam grandibus quam marginalibus ovoideis ad lanceoloideis cum stigmatibus simulantibus sed ellipticis, sinibus centralibus apicalibus 8–15 mm profundis rectis anguste V-formatis, endocarpio in parte 1/3 infera et 27–30 mm longo oblate subsphaerico osseoso excludere rubri-badio apice subconico et supra semines cum projectionibus brevis lanceoloideis humeris minime supramedialibus crassis divergentibus et curvate adscendentibus lateribus lateralibus 4–7 mm crassis intra obscure badii laevibus lucidis, seminibus 13–15 mm longis ellipsoideis, mesocarpio in apice carpelae cuiusque cavernam 15–23 mm longam cum aerenchyma fibris longitudinalibus et parenchyma formanti, mesocarpio basali 9–13 mm longo fibroso et carnoso.

DIAGNOSIS OF HOLOTYPE: Low sprawling tree (stems and roots unknown); leaves 1.25–1.33 (+0.05–0.2?) m long, 6.5–6.8 cm wide near the base, 5.5 cm wide at the middle, coriaceous, above green and shiny, below pale green and glaucous, at midsection with 50 parallel secondary veins in each half, the tertiary cross veins visible above near the base, forming narrow oblong meshes, the blade sword-shaped, tapering from base to the trigonous subulate apex (the tip lost, and the base not seen); beginning near the base the margins with prickles 2–3.3 mm long, 2.5–8 mm apart, straight subulate, compressed, the lower ones from a geniculate base, the following ones from a curving base, stramineous with bright red tips; beginning at about 15 cm the midrib below with prickles 2–3 mm long, 10–23 mm apart, arcuate subulate, appressed reflexed, red; at midsection the margins with prickles 2–3 mm long, 3–5 mm apart, subarcuate

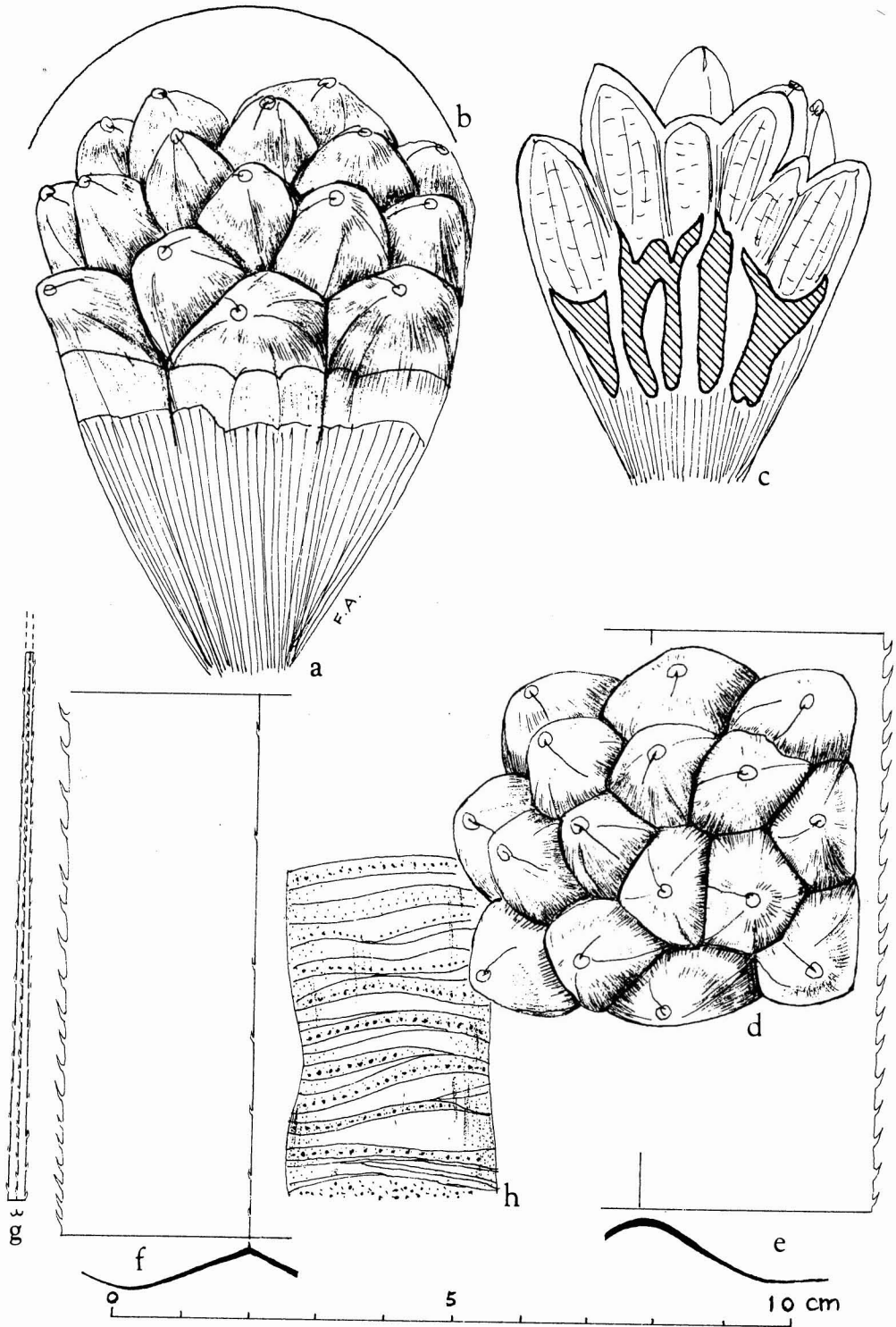


FIG. 330. *Pandanus chelyon* St. John, from holotype. *a*, phalange, lateral view, $\times 1$; *b*, profile of phalange apex, $\times 1$; *c*, longitudinal median section of phalange, $\times 1$; *d*, apical view of phalange, $\times 1$; *e*, half of leaf base, lower side, $\times 1$; *f*, half of leaf middle, lower side, $\times 1$; *g*, leaf apex, lower side, $\times 1$; *h*, branchlet with leaf scars, $\times 1$.

subulate, appressed ascending, the base stramineous, the tip red; the nearby midrib below with prickles 1–1.8 mm long, 3–6 mm apart, subarcuate subulate, appressed ascending, stramineous, distinctly large and small alternating; near the apex the margins and midrib below with prickles 0.4–0.8 mm long, 3–7 mm apart, thick subulate, appressed ascending, pale brownish; the pleats unarmed; fruiting syncarps pendent, evidently solitary, bearing 49 phalanges; peduncle 35 cm long, 2 cm in diameter, cernuous, leafy bracted; phalanges 6–7 cm long, 4.5–7.3 cm wide, 4.3–5.3 cm thick, broadly cunifform, 4–6-angled, the apex high convex to convex, the lower lateral sides flat, lateral sinuses none, upper $\frac{1}{3}$ free, the sides smooth, shining, flattish, then upward curving; carpels 11–16, radial; marginal carpels with apices hemispheric to broadly ovoid, their stigmas 2.2–2.5 mm in diameter, horizontal, flush, suborbicular, apical, brown, papillose; proximal sinuses a crack running $\frac{1}{4}$ – $\frac{1}{2}$ way to valley bottom; inner carpels with apices subequal to or less commonly as much as $\frac{1}{2}$ smaller than the marginal, ovoid to lanceoid, their stigmas similar but elliptic; central apical sinuses 8–15 mm deep, straight, narrowly V-shaped; endocarp in the lower $\frac{1}{3}$ and 27–30 mm long, oblate subspherical, bony, dull reddish brown, the apex low conic, with a short lanceoid projection over each seed, the shoulders slightly suprmedian, thick, widespreading and curved ascending, lateral walls 4–7 mm thick, within dark brown, smooth, shining; seeds 13–15 mm long, ellipsoid; mesocarp forming in the apex of each carpel a cavern 15–23 mm long, with aerenchyma of longitudinal fibers and parenchyma; basal mesocarp 9–13 mm long, fibrous and fleshy.

EXPANDED DESCRIPTION: Central apical sinuses 6–13 mm deep; endocarp in the lower $\frac{1}{3}$ – $\frac{1}{2}$.

HOLOTYPE: Western Indian Ocean, Aldabra Island, South Island, just n.w. of Cinq Cases Dune, common locally in mixed *Guettarda-Pandanus* forest on moderately rough limestone, Feb. 4, 1968, *F. R. Fosberg 49,196* (BISH). Isotypes (K, US).

SPECIMENS EXAMINED: Western Indian Ocean, Aldabra Island, ditto, from the same population as *49,196* to show variation, Feb. 6, 1968, *Fosberg 49,234* (BISH, K, US); ditto, *49,235* (BISH, K, US).

DISCUSSION: *P. chelyon* is a member of the section *Pandanus*, as is its closest relative, *P. maximus* Martelli, of Ile Grande Comore, a species with the phalanges 7.3–8.5 cm long, 5.2–8.5 cm wide; central apical sinuses 6–14 mm deep; apices of marginal carpels with a distal concave platform 3–7 mm wide; stigmas raised, oblique; endocarp in the upper $\frac{2}{5}$ and 3–4 cm long; basal mesocarp 15–40 mm long; leaf margins beginning at 7–8 cm from the base with prickles 2–3.5 mm long, 4–12 mm apart, arcuate subulate, ascending, white. *P. chelyon* has the phalanges 6–7 cm long, 4.5–7.3 cm wide; central apical sinuses 8–15 mm deep; apices of all carpels lacking the platform; stigmas horizontal, flush; endocarp centering from lower $\frac{1}{3}$ to the middle; basal mesocarp 9–13 mm long; leaf margins near the base with prickles 2–3.3 mm long, 2.5–8 mm apart, straight subulate, compressed, the lower ones from a geniculate base, the following ones from a curving base, stramineous with bright red tips.

The new epithet is the genitive plural of the Greek noun *chelyx*, of the tortoises, and it is given because of the multitude of land tortoises in the habitat.

Pandanus impar sp. nov. (sect. *Pandanus*)

Fig. 331–333

DIAGNOSIS HOLOTYPE: Arbor 5 m alta (ramis et radicibus incognitis), foliis 1.19–1.26 m longis proxima basem 6–7 cm latis in medio 4.6–4.8 cm latis coriaceis U-sulcatis 2-plicatis supra viridibus lucidis infra pallide viridibus glaucis in sectione mediali cum 45 nervis parallelis secundariis in dimidio quoque sed nervis tertiis non evidentis lamina gladiata ex basi in apice trigono gracile subulato deminuenti eo in puncto 10 cm ex apice 2 mm lato basi pallida inermi, ex 3 cm marginibus cum aculeis

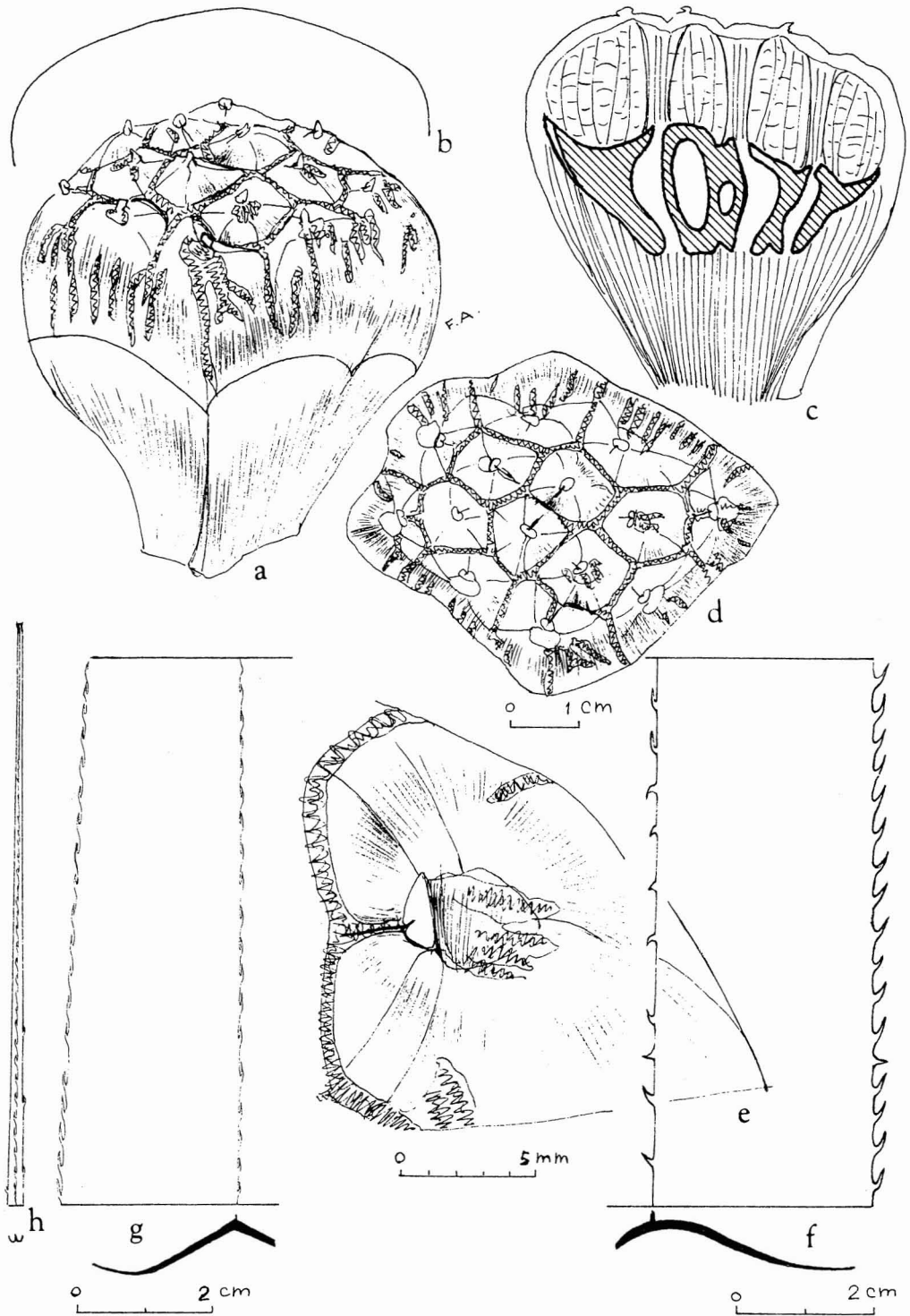


FIG. 331. *Pandanus impar* St. John, from holotype. *a*, phalange, lateral view, $\times 1$; *b*, profile of phalange apex, $\times 1$; *c*, phalange, longitudinal median section, $\times 1$; *d*, phalange, apical view, $\times 1$; *e*, carpel apex, with stigmas, proximal sinus, $\times 4$; *f*, half of leaf base, lower side, $\times 1$; *g*, half of leaf middle, lower side, $\times 1$; *h*, leaf apex, lower side, $\times 1$.

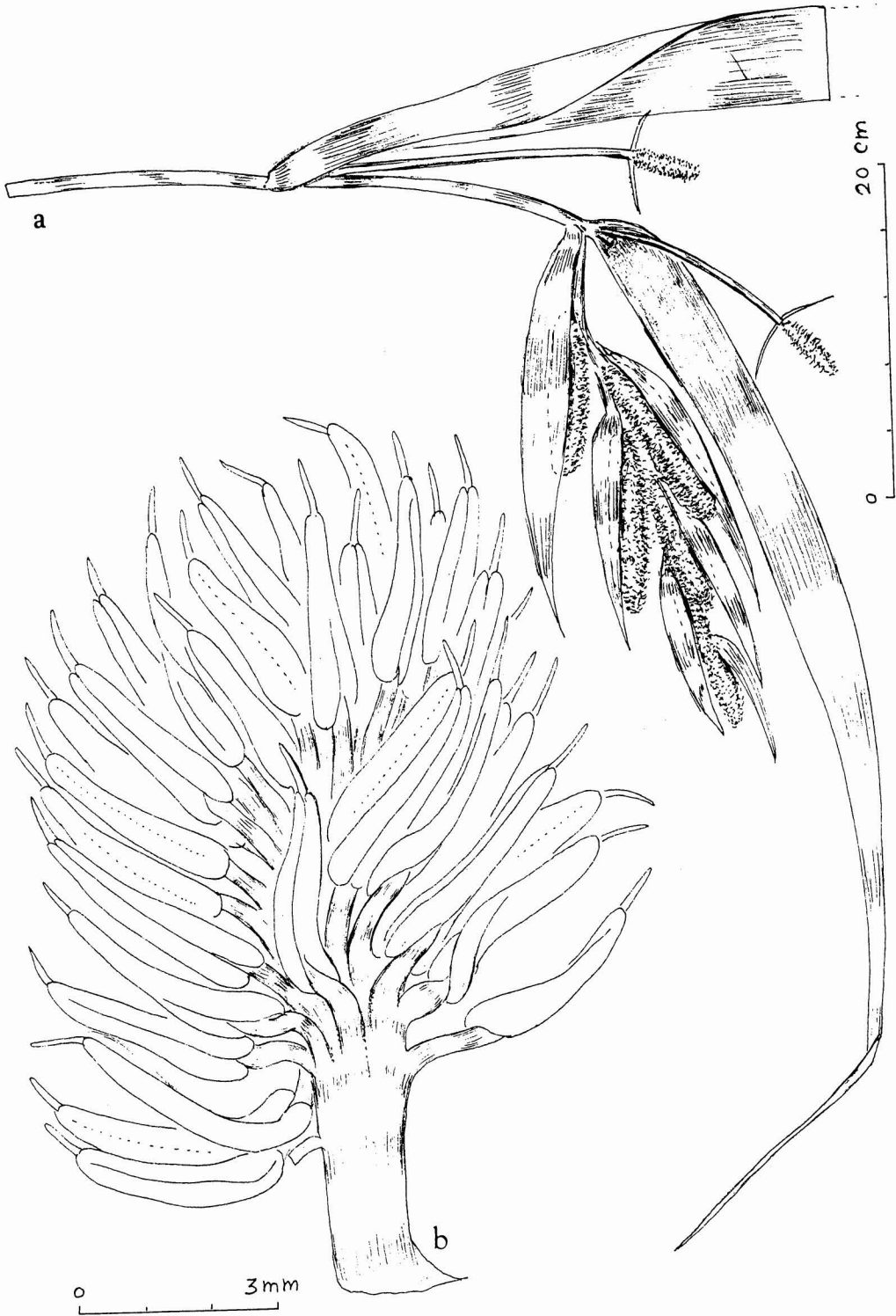


FIG. 332. *Pandanus impar* St. John (from Fosberg 48, 998). a, staminate inflorescence, $\times 1/4$; b, staminal fascicle, $\times 10$.

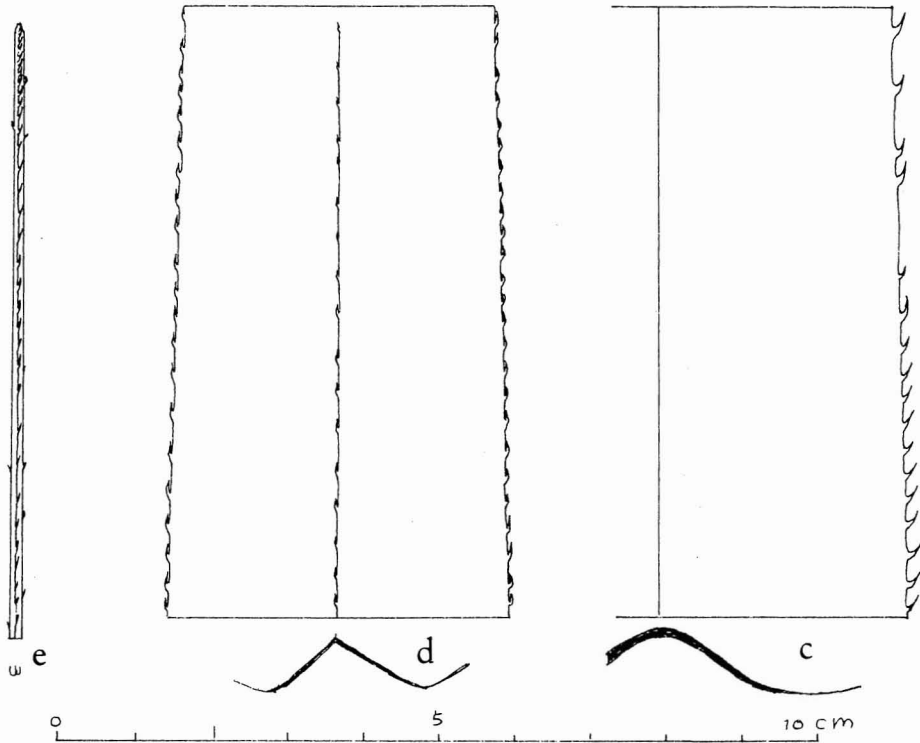


FIG. 333. *Pandanus impar* St. John (from Fosberg 48,998). c, half of leaf base, lower side, $\times 1$; d, leaf middle, lower side, $\times 1$; e, leaf apex, lower side, $\times 1$.

1.8–3 mm longis 2.5–5 mm separatis rectis crasse subulatis ex basi geniculata adscendentibus stramineis cum apicibus rosaceis, ex 10.5–12 cm midnervo infra cum aculeis 1.5–2.5 mm longis 7–18 mm separatis arcuatis subulatis valde reflexis ex basi conica stramineis cum apicibus obscure rubris, in sectione mediali marginibus cum aculeis 2.5–3 mm longis 3–5 mm separatis subsigmoideis vel rectis subulatis ex basi curvata compressa adpresse adscendentibus stramineis cum apicibus obscure rubris, midnervo vicinali infra cum aculeis 3–5 mm separatis eis majoribus multis 2.2–2.5 mm longis rectis subulatis ex basi curvata adpresse adscendentibus stramineis et cum illis minoribus paucis 0.7–1.5 mm longis simulantibus intermixtis, in apice subulato marginibus cum aculeis 0.5–0.7 mm longis 1–3 mm separatis rectis subulatis valde adscendentibus stramineis, in apice midnervo infra cum aculeis 0.5 mm longis 3–25

mm separatis crasse subulatis adscendentibus cum apicibus rubris, infructescentia cum syncarpio solitario, pedunculo 37 cm longo 13 mm diametro trilaterato cernuo parte 2/5 basali inermi parte supera cum 2–3 bracteis foliaceis, eis superis 25–15 cm longis 3–4 cm latis ligulatis acutis crasse chartaceis albis marginibus et midnervo cum aculeis exilibus, syncarpio in flore 9.5 cm longo 5.5 cm diametro ellipsoideo viridi, syncarpio in fructu fere 20 cm longo 15 cm diametro ellipsoideo pendenti, phalangibus 5.3–6 cm longis 4.8–5.8 cm latis 4.5–5.1 cm crassis cuneati-cuboideis apice subconvexo 4–5-anguloso in apice latissimo lateribus inferis subplanis sinibus lateralibus nullis parte 3/7 supera libera cum lateribus subconvexis laevibus lucidis angulis secundariis nullis, carpelis 12–15 radiatis, carpelis marginalibus cum apicibus subconvexis et paucis sine sed multis cum areola anguste concava distali, stigmatibus 1.5–2.7 mm

latis reniformibus obliquioribus et late truncatis badiis papillois, sinibus proximalibus fissura angusta $\frac{1}{2}$ vel tota ad fondam extensa, sinibus centralibus apicalibus 2–4 mm profundis late V-formatis sed illis exterioribus 1–2 mm profundis et vadosioribus, carpels centralibus cum apicibus $\frac{2}{3}$ tam grandibus quam illis marginalibus et oblate pyramidalibus, endocarpio in parte $\frac{3}{7}$ supera et 17–18 mm longo osseoso rubri-badio late cuniformalis apice subconvexo humeris ex margine supero et crassis divergentibus concavis subadscendentibus lateribus lateralibus 3–6 mm crassis intra pallide rubri-badiis lucidis sublaevibus sed spiraliter rugosis, seminibus 9–14 mm longis late ellipsoideis, mesocarpio in apice carpelae cuiusque cavernam 13–16 mm longam cum aerenchyma parenchymatosa et fibris longitudinalibus paucis formanti, mesocarpio basali 19–22 mm longo fibroso et carnosio.

DIAGNOSIS OF HOLOTYPE: Tree 5 m tall (branches and roots unknown); leaves 1.19–1.26 m long, 6–7 cm wide near the base, 4.6–4.8 cm wide at the middle, coriaceous, U-sulcate 2-pleated, above green and shiny, below pale green and glaucous, at midsection with 45 parallel secondary veins in each half, but no evident tertiary veins, the blade sword-shaped, tapering from base to the trigonous slender subulate apex, this at the point 10 cm down 2 mm wide, the base unarmed, pale; beginning at 3 cm the margins with prickles 1.8–3 mm long, 2.5–5 mm apart, thick straight subulate from a geniculate base, ascending, stramineous with pink tips; beginning at 10.5–12 cm the midrib below with prickles 1.5–2.5 mm long, 7–18 mm apart, arcuate subulate, strongly reflexed from a conic base, stramineous with dark red tips; at midsection the margins with prickles 2.5–3 mm long, 3–5 mm apart, subsigmoid or straight subulate from a curving compressed base, appressed ascending, stramineous with dark red tips; the nearby midrib below with prickles 3–5 mm apart, many large ones 2.2–2.5 mm long, straight subulate from a curved base, appressed ascending, stramineous, and intermingled are fewer small similar ones 0.7–1.5 mm long; on the

subulate apex the margins with prickles 0.5–0.7 mm long, 1–3 mm apart, straight subulate, strongly ascending, stramineous; on the subulate apex the midrib below with prickles 0.5 mm long, 3–25 mm apart, arcuate thick subulate, ascending, red tipped; pistillate inflorescence with a solitary syncarp; peduncle 37 cm long, 13 mm in diameter, 3-sided, cernuous, the lower $\frac{2}{5}$ naked, the upper $\frac{3}{5}$ with 2–3 foliaceous bracts; those near the flowers 25–15 cm long, 3–4 cm wide, ligulate, acute, thick chartaceous, white, the margins and midrib with weak prickles; flowering syncarp 9.5 cm long, 5.5 cm in diameter, ellipsoid, green; fruiting syncarp about 20 cm long, and 15 cm in diameter, ellipsoid, pendent; phalanges 5.3–6 cm long, 4.8–5.8 cm wide, 4.5–5.1 cm thick, cuneate cuboid, the apex low convex, 4–5-angled, without secondary angles, broadest at the top, the lower sides flattish, lateral sinuses wanting, the upper $\frac{3}{7}$ free, the sides gently convex, smooth, shining, without secondary angles; carpels 12–15, radial; marginal carpels with apices low convex, and a few without but mostly with a narrow concave platform distal of the stigma; stigmas 1.5–2.7 mm wide, reniform, very oblique and broadly truncate, brown, papillose; proxima sinuses a narrow crack running half to all the way to the valley bottom; central apical sinuses 2–4 mm deep, wide V-shaped, but the outer ones 1–2 mm deep and very shallow; central carpels $\frac{2}{3}$ as large as the marginal ones and with the apices oblate pyramidal; endocarp in the upper $\frac{3}{7}$ and 17–18 mm long, bony, reddish brown, wide cuniform, the apex low convex, and the shoulders at the upper rim, heavy and widespreading, concave and slightly ascending, lateral walls 3–6 mm thick, within light reddish brown, shining, smoothish but spirally rugose; seeds 9–14 mm long, broadly ellipsoid; mesocarp forming in the apex of each carpel a cavern 13–16 mm long, with aerenchyma of white parenchyma and a few longitudinal fibers; basal mesocarp 19–22 mm long, fibrous and fleshy.

EXPANDED DESCRIPTION: Prop roots branching; leaves 0.79–1.26 m long, 4.5–7 cm wide near the base, 3–4.8 cm wide at the

middle, at midsection with 37–45 parallel secondary veins in each half; phalanges 7 cm wide in a double with 20 carpels.

STAMINATE PLANT (*Fosberg 48,998*): Tree 5 m tall (roots, trunk, and branches unknown); leaves 1.2–1.27 m long, 6.2–6.7 cm wide near the base, 4.2–4.4 cm wide at the middle, U-sulcate, 2-pleated, above green and shiny, below pale green and glaucous, at midsection with 47 parallel secondary veins in each half, but no visible tertiary veins, the blade sword-shaped, tapering from base to the trigonous slender subulate apex, this at the point 10 cm down 1 mm wide, the base unarmed, pale; beginning at 4–5 cm the margins with prickles 1.3–2.5 mm long, 3–11 mm apart, straight subulate, ascending from a conic base, stramineous; beginning at 11–20 cm the midrib below with prickles 2–2.3 mm long, 11–20 mm apart, arcuate subulate, ascending, stramineous with slight red tips; at midsection the margins with prickles 1.5–2 mm long, 2–5 mm apart, slender subulate, appressed ascending, stramineous with red tips; the nearby midrib below with prickles 1.2–1.4 mm long, 3–6 mm apart, slender subulate, appressed ascending, compressed, stramineous with red tips; on the subulate apex the margins with prickles 0.4–0.6 mm long, 1.5–5 mm apart, subulate, almost appressed ascending, stramineous; on the subulate apex the midrib below unarmed for the last 6 cm, but below that with prickles 0.3 mm long, 11–19 mm apart, subulate, appressed ascending, red; the pleats unarmed; staminate inflorescences 60–77 cm long, cernuous, pendent, with white, showy bracts; peduncle 20–25 cm long, 12–14 mm in diameter, fleshy, brittle, early breaking and falling; the lowest bract 90 cm long, 5.5 cm wide near the base, 3 cm wide at the middle, fully foliaceous; upper bract of the peduncle 63 cm long, 5 cm wide near the base, 4.4 cm wide at the middle, foliaceous except for the lower $\frac{1}{3}$ which is softer and white; rhachis 27–30 cm long, sinuous; flowering nodes and spikes 8–14, their bracts chartaceous, white, with pale weak prickles on margins and midrib; middle bract 22 cm long, 4 cm wide, ligulate lanceolate; spikes 6–11 cm long, 2–2.5 cm in

diameter, cylindric, dense; staminate fascicle 13–17 mm long, bearing 45–87 anthers; column 1–6 mm long; free filament tips 0.5–2 mm long; anther body 3–3.5 mm long, lance oblong, bearing at apex a 0.8–1 mm slender subulate prolongation of the connective.

HOLOTYPUS: Western Indian Ocean, Aldabra Island, South Island, Cinq Cases Camp, common locally in open to sparse forest on “platin” (flat limestones), Jan. 22, 1968, *F. R. Fosberg 48,997* (BISH). Isotypes (K, US).

SPECIMENS EXAMINED: Western Indian Ocean, Aldabra Island, South Island, Cinq Cases Camp, common locally in open to sparse forest on “platin,” Jan. 22, 1968, *Fosberg 48,998* (BISH, K, US); ditto, Jan. 30, 1968, *Fosberg 49,135* (BISH, K, US); ditto, Takamaka (Wilson’s) Well, solitary tree in thick scrub forest, Feb. 12, 1968, *Fosberg 49,348* (K, US); ditto, Middle Island, Gionnet Channel Camp area, forming small thickets in coastal mixed scrub forest on rough limestone terrace back of low cliffs, Mar. 2, 1968, *Fosberg 49,658* (BISH, K, US); ditto, locally common on low sand dune back of small beach, staminate, Mar. 2, 1968, *Fosberg 49,656* (BISH, K, US).

DISCUSSION: *P. impar* is a member of the section *Pandanus*. It resembles *P. Hartmanni* St. John, of the Maldive Islands, but it actually seems closest to *P. cuneatus* St. John, of Kigombe, Tanzania, a species with the syncarp 10 cm long, 8 cm in diameter; phalanges 3.8–4.3 cm long, 2.8–4.3 cm wide; carpels 5–9; stigmas 2.5–4 mm wide, reniform to elliptic, horizontal; endocarp median, the apex with lanceoloid projections over the seeds; basal mesocarp 10–12 mm long; leaf margins beginning at 9 cm from the base with prickles 1.5–3 mm long, 2–5 mm apart, arcuate or subarcuate subulate, from a heavy base, ascending, pale with brown tips. *P. impar* has the syncarp 20 cm long, 15 cm in diameter; phalanges 5.3–6 cm long, 4.8–5.8 cm wide; carpels 12–15; stigmas 1.5–2.7 mm wide, reniform, broadly truncate, elevated and strongly tilted; endocarp in the upper $\frac{3}{7}$, the apex low con-

vex; basal mesocarp 19–22 mm long; leaf margins beginning at 3 cm from the base with prickles 1.8–3 mm long, 2.5–5 mm apart, thick straight subulate from a geniculate base, ascending, stramineous with pink tips.

The new epithet is the Latin adjective *impar*, unequal, and it is given with reference to the unequal inner and outer apical sinuses of the phalanges.

Pandanus intraconicus sp. nov. (sect. *Pandanus*)

Fig. 334

DIAGNOSIS HOLOTYPI: Habitus radices truncus rami foliaque incognit sunt, phalangibus 5.3–5.8 cm longis 4.7–5.3 cm latis 3.8–4.8 cm crassis late cuniformalis 5–6-angulosis apice subconvexo lateribus inferis planis sinibus lateralibus nullis parte $\frac{1}{4}$ supera libera cum lateribus laevibus lucidis subcurvatis et tarde rimosis, carpelis 14–17 eis marginalibus cum apicibus hemisphaericis (vel ovoidei-conicis) et cum areola concava vadosa distali 2–3 mm lata, stigmatibus fere omnibus 2.2–3 mm latis truncatis reniformibus ad suborbicularibus elevatis obliquis sed uno solo 3–3.5 mm longo cordato prostrato horizontali, sinibus proximalibus fissura $\frac{2}{3}$ vel tota ad fundam extensis, carpelis centralibus cum apicibus $\frac{1}{2}$ tam grandibus ad subaequalibus quam illis exterioribus conicis ad oblatis-conicis cum stigmatibus 2–2.7 mm longis ellipticis elevatis obliquis, sinibus centralibus apicalibus 4–6 mm profundis late V-formatis, endocarpio in parte $\frac{2}{5}$ infera et 20 mm longo osseoso mahogani-colorato biconvexo apice supra semines cum projectionibus conicis humeris in parte $\frac{1}{4}$ supera affixis crassis concavis curvatis adscendentibus lateribus lateralibus 5–7 mm crassis intra pallide rubri-badiis, seminibus 12–14 mm longis ellipsoideis, mesocarpio in apice carpelae cuiusque cavernam 17–23 mm longam cum aerenchyma fibris longitudinalibus et membranibus albis formanti, mesocarpio basali 12–15 mm longo fibroso et carnoso.

DIAGNOSIS OF HOLOTYPE: Habit, roots, trunk, branches, and leaves unknown; phalanges 5.3–5.8 cm long, 4.7–5.3 cm wide, 3.8–4.8 cm thick, broad cuniform, 5–6-angled, the apex low convex, the lower sides flat, lateral sinuses none, the upper $\frac{1}{4}$ free, its sides smooth, shining, gently convex, and developing longitudinal brown cracks; carpels 14–17, the marginal carpels with apices hemispheric (or ovoid-conic), with a shallow concave platform 2–3 mm wide, distal of the stigma, the stigmas all but one 2.2–3 mm wide, truncate, reniform to suborbicular, elevated, oblique, but a solitary one 3–3.5 mm long, cordate, flush, horizontal; proximal sinuses a crack running $\frac{2}{3}$ to all the way to the valley bottom; central carpels with apices from $\frac{1}{2}$ as large to subequal to the outer ones, conic to oblate conic, their stigmas 2–2.7 mm long, elliptic, elevated, oblique; central apical sinuses 4–6 mm deep, wide V-shaped; endocarp in the lower $\frac{2}{5}$ and 20 mm long, bony, mahogany-colored, biconvex, the apex with a conic projection over each seed, the shoulders at the upper $\frac{1}{4}$, thick, concave, curved ascending, the lateral walls 5–7 mm thick, within light reddish brown; seeds 12–14 mm long, ellipsoid; mesocarp forming in the apex of each carpel a cavern 17–23 mm long, with aerenchyma of longitudinal fibers and white membranes; basal mesocarp 12–15 mm long, fibrous and fleshy.

HOLOTYPE: Western Indian Ocean, Aldabra Island, South Island, n.w. of Cinq Cases Camp Dune, mixed scrub forest, largely *Guettarda*, on moderately rough limestone, Feb. 6, 1968, *F. R. Fosberg 49,236* (BISH). Isotype (US).

SPECIMENS EXAMINED: Western Indian Ocean, Aldabra Atoll, South Island, grove in dunes, 1 mile w. of Trou Nenez, 20 Aug., 1967, *D. R. Stoddart 988* (BISH, K).

DISCUSSION: *P. intraconicus* is a member of the section *Pandanus*, as is its closest relative, *P. subcubicus* St. John, also of Aldabra Island, a species with the phalanges 5–5.3 cm long, the upper $\frac{1}{5}$ free; carpels 9–14; stigmas 1.8–2.5 mm wide, suborbicu-

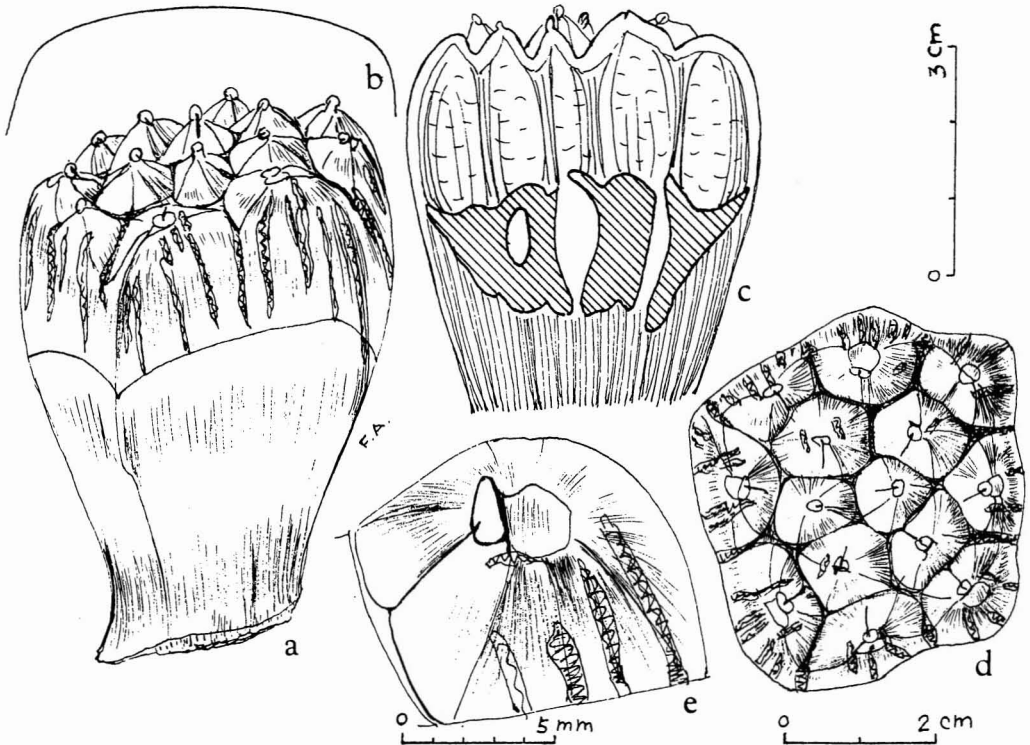


FIG. 334. *Pandanus intraconicus* St. John, from holotype. *a*, phalange, lateral view, $\times 1$; *b*, profile of phalange apex, $\times 1$; *c*, phalange, longitudinal median section, $\times 1$; *d*, phalange, apical view, $\times 1$; *e*, carpel apex, with stigma, platform, and proximal sinus, $\times 4$.

lar, flush, horizontal; inner carpels with apices suborbicular to rounded conic; central apical sinuses 6–7 mm deep; endocarp median and 22 mm long, funnellform. *P. intraconicus* has the phalanges 5.3–5.8 cm long, the upper $\frac{1}{4}$ free; carpels 14–17; stigmas all but one 2.2–3 mm wide, truncate, reniform to suborbicular, elevated, oblique, but a solitary one 3–3.5 mm long, cordate, flush, horizontal; the inner carpels with apices conic to oblate conic; central apical sinuses 4–6 mm deep; endocarp in the lower $\frac{2}{5}$ and 20 mm long, biconvex.

The new epithet is formed from the Latin *intra*, within; *conicus*, conic, and it refers to the shape of the inner carpel apices.

Pandanus subcubicus sp. nov. (sect. *Pandanus*)

Fig. 335

DIAGNOSIS HOLOTYPI: Arbor 4 m alta est (radices truncus rami et folia incogniti sunt), phalangibus 5–5.3 cm longis 4.4–5.3 cm latis 4.3–4.8 cm crassis late cuneati-cuboideis apice subconvexo 5–6-angulosis lateribus inferis planis sinibus lateralibus nullis, parte $\frac{1}{5}$ supra libera angulis secundariis nullis lateribus laevibus lucidis subplanis ad subconvexis, carpelis 9–14 radiatis, carpelis marginalibus cum apicibus hemisphaericis minime angulosis et cum areola subconca 3–5 mm lata distali, stigmatibus 1.8–2.5 mm latis suborbicularibus prostratis horizontalibus badiis papillosis, sinibus proximalibus fissura $\frac{1}{3}$ – $\frac{1}{2}$ ad fondam extensa, carpelis interioribus cum apicibus $\frac{1}{3}$ – $\frac{2}{3}$ tam grandibus quam illis marginalibus et suborbicularibus ad rotundati-conicis, sinibus centralibus apicalibus 6–7 mm profundis rectis V-formatis, endocarpio mediali et 22 mm longo infundibuliformi osseoso obscure aurantiaci-rubro apice convexo et supra

semines cum projectionibus subconicis humeris in parte $\frac{2}{3}$ supera affixis et concavis curvatis adscendentibus lateribus lateralibus 3–4 mm crassis intra clare subluti-aurantiacis laevibus sed spiraliter striatis, seminibus 13–14 mm longis ellipsoideis, mesocarpio in apice carpelae cuiusque cavernam 12–20 mm longam cum aerenchyma fibris longitudinalibus et membranis albis formanti, mesocarpio basali 12–14 mm longo fibroso et carnoso.

DIAGNOSIS OF HOLOTYPE: Tree 4 m tall (roots, trunk, branches, and leaves unknown); phalanges 5–5.3 cm long, 4.4–5.3 cm wide, 4.3–4.8 cm thick, broad cuneate cuboid, the apex low convex, 5–6-angled, lower sides flat, lateral sinuses none, upper $\frac{1}{5}$ free, without secondary angles, the sides smooth, shining, flattish to gently convex; carpels 9–14, radial; marginal carpels with

apices hemispheric, faintly angled, and with a shallow concave platform 3–5 mm wide, distal of the stigma; stigmas 1.8–2.5 mm wide, suborbicular, flush, horizontal, brown, papillose; proximal sinuses a crack running $\frac{1}{3}$ – $\frac{1}{2}$ way to valley bottom; inner carpels with apices $\frac{1}{3}$ – $\frac{2}{3}$ as large as the marginal, suborbicular to rounded conic; central apical sinuses 6–7 mm deep, straight, V-shaped; endocarp median and 22 mm long, funnelform, bony, dark orange red, the apex convex, and low conic over each seed, the shoulders at the upper $\frac{2}{3}$ and concave curved ascending, the lateral walls 3–4 mm thick, within bright yellowish orange, smooth, but spirally striate; seeds 13–14 mm long, ellipsoid; mesocarp forming in the apex of each carpel a cavern 12–20 mm long, with aerenchyma of longitudinal fibers and white membranes; basal mesocarp 12–14 mm long, fibrous and fleshy.

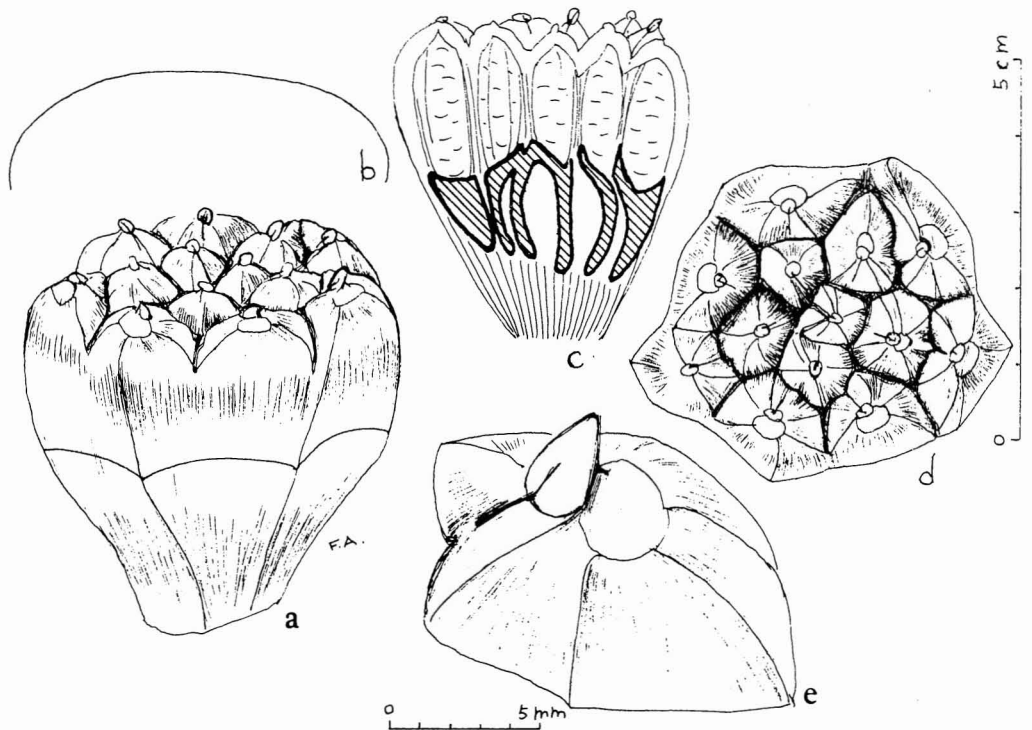


FIG. 335. *Pandanus subcubicus* St. John, from holotype. *a*, phalange, lateral view, $\times 1$; *b*, profile of phalange apex, $\times 1$; *c*, phalange, longitudinal median section, $\times 1$; *d*, phalange, apical view, $\times 1$; *e*, carpel apex, with stigma, platform, and proximal sinus, $\times 4$.

HOLOTYPE: Western Indian Ocean, Aldabra Island, South Island, Takamaka (Wilson's) Well, occasional in patch of thick scrub forest, Feb. 12, 1968, *F. R. Fosberg* 49,347 (BISH). Isotypes (K, US).

DISCUSSION: *P. subcubicus* is a member of the section *Pandanus*, as is its closest relative, *P. alloios* St. John, also of Aldabra Island, a species with the phalanges 4.1–4.5 cm long, 3.8–4.8 cm wide, the apex low convex to subtruncate; marginal carpels with apices oblate hemispheric to convex, their stigmas 1.5–2 mm wide, reniform to orbicular, truncate, elevated and oblique; central carpels with apices slightly angled conic; endocarp in the lower 2/5 and 15–17 mm long, the lateral walls 2–3 mm thick; basal mesocarp 6–7 mm long. *P. subcubicus* has the phalanges 5–5.3 cm long, 4.4–5.3 cm wide, the apex low convex; marginal carpels

with apices hemispheric, faintly angled, their stigmas 1.8–2.5 mm wide, suborbicular, flush, horizontal; central carpels with apices suborbicular to rounded conic; endocarp median and 22 mm long, the lateral walls 3–4 mm thick; basal mesocarp 12–14 mm long.

The new epithet is formed from the Latin *sub-*, somewhat, and *cubicus*, cubical, and it is given with reference to the shape of the phalanges.

Pandanus sp. (sect. *Microstigma*)

Fig. 336

There is another species of *Pandanus* on Aldabra, represented by a collection made in 1895, *Dr. A. Voeltzkow 1a*, preserved in the Zurich Botanical Garden herbarium. It consists of leaves and a pickled young pistil-

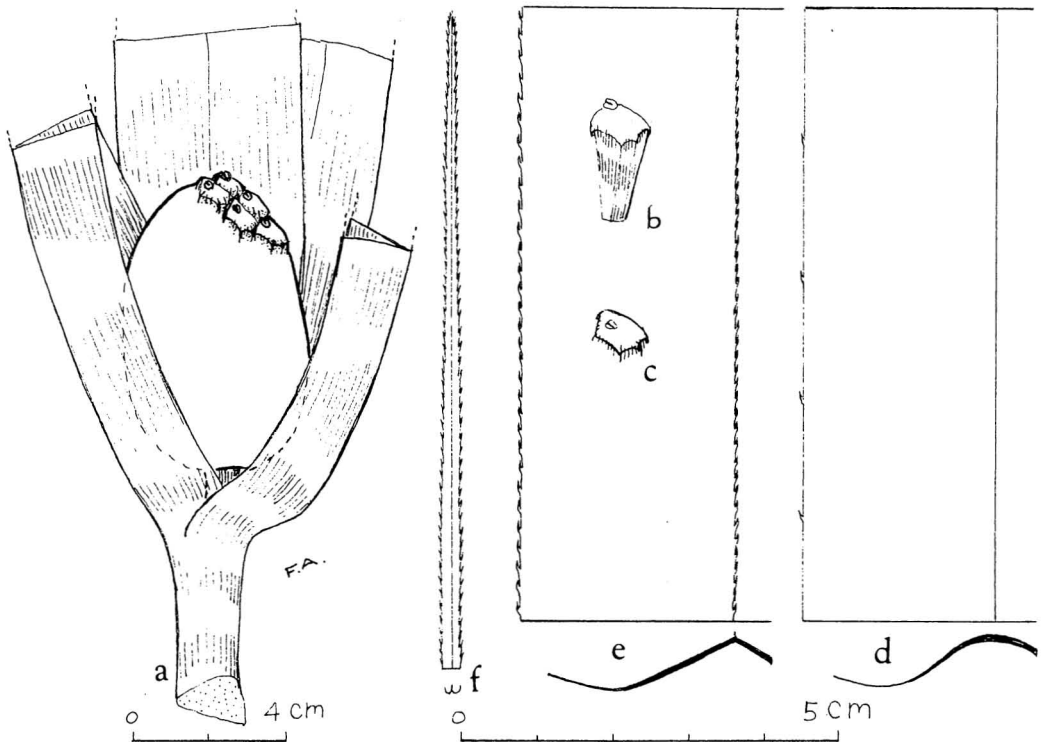


FIG. 336. *Pandanus* sp. *a*, pistillate inflorescence, lateral view, $\times 1$; *b*, carpel, lateral view, $\times 1$; *c*, carpel, apical view, $\times 1$; *d*, leaf base, lower side, $\times 1$; *e*, leaf middle, lower side, $\times 1$; *f*, leaf apex, lower side, $\times 1$.

late inflorescence. The solitary syncarp is 7.6×5 cm and bears numerous immature drupes $16 \times 9 \times 6$ mm, each with a single, very excentric stigma, 2–4 mm long, ovate, gray, horizontal. The pileus is 5 mm high, hemispheric. No endocarp or seed has been formed. The leaf is 99 (+3?) cm long, 5.6 cm wide at the middle, and there with 47 parallel secondary veins in each half, but no tertiary cross veins are evident.

Excellent collections of six species, representing the sections *Mammillarisia*, and *Pandanus*, were gathered on Aldabra in 1968 by F. R. Fosberg. None of them were in the section *Microstigma*, and none remotely resemble this earlier collection by Voeltzkow, which, though different, is too immature for identification. It was previously misidentified as *P. Vandermeeschii* Balf. f. in Baker, an endemic of Mauritius and a member of the section *Mammillarisia*.