

## Family 21. PALMAE

### Literature:

- Corner, E.J.H. 1966. The Natural History of Palms. London  
Dransfield, J. 1974. A short guide to rattans. Biotrop, Bogor.  
Mogea, J.P. 1978. Palm Indonesia, LBN 13, Bogor.  
Uhl, N & J Dransfield. 1987. Genera Palmarum, Ithaca.

### 1. Adonidia

**Adonidia merrillii** (Becc.) Becc., PJS 14 (1919) 329; Brown & Merr. in Philip Bur. Forestry Bull. 18 (1919) 15, t. 2, 3; --Normanbya merrillii Becc. in PJS 14 (1909) Bot. 606, t. 30, 31, LPB 8 (1919) 3009; Merr. Fl. Manila (1912) 127. --Type: Plates 30 & 31, Becc. *l.c.*

Borneo (Sabah), Philippines. CORON, LANGEN, PALAWAN (Taytay Bay: APULIT; Brookes Point). Karst limestone formations, sandy coastal areas, often subgregarious in Coron and N Palawan. Common in cultivation worldwide as an ornamental.

The genus is now reportedly known from Borneo (Sabah), fide ES Fernando, citing LG Saw, 2005, pers. com.).

### 2. Areca Linnaeus

Ca. 50 species, India to S. China, through Malesia to the Solomon Islands; 9 species in the Philippines, all endemic except 2 species)

**1. Areca caliso** Becc. in Elmer, LPB 8 (1919) 2998; PJS 14 (1919) 310. --Type: Elmer 11898 (FI, holo; iso BM, BO, CAS, K, NY\*, ). Mindanao: Davao, Mt Apo, Todaya, altitude c. 1000m, May 1909;

LUZON: Sorsogon (Mt Bulusan), BILIRAN (Naval, Mt Sayao), LEYTE (Dagami; Lake Danao; Mt Pangasugan), SAMAR, MINDANAO: Davao (Mt Apo), Agusan del Norte (Mt Urdaneta), Agusan del Sur (Trento), Surigao del Sur (Tandag). Moist humus-covered soil along streams in forested slopes, 350-1000m. Apparently flowering and fruiting throughout the year.

Conservation status: Near Threatened (NT)

**2. Areca camarinensis** Becc., PJS 14 (1919) 309. --Type: FB 14268 Aguilar (FI, holo). Luzon: Camarines Sur prov., Mt Isarog.

LUZON: Camarines Norte (Bicol National Park), Camarines Sur (Mt Isarog). Lowland evergreen rain forest.

**3. Areca catechu** L., Sp. Pl. (1753) 1189 (err. cathecu); --Blanco Fl. Filip. (1837) 714, ed. 2 (1845) 494, ed. 3, 3 (1879) 129, t. 350; --Miq., Fl. Ind. Bat. 3 (1855) 8; --Vidal, Sinopsis Atlas (1883) 42, t. 94, Fig. A; --Naves, Novis. App. (1882) 278; --Becc. in PJS 3 (1908) Bot. 340, 6 (1911) Bot. 229; --Merr., PJS 1 (1906) Suppl. 32, Fl. Manila (1912) 128, Sp. Blancoanae (1918) 89; --Becc. in LPB 8 (1919) 2997, PJS 14 (1919) 304; Brown & Merr. in Philip. Bur. Forestry Bull. 18 (1919) 20, t. 4, 5.

*Areca alba* "Rumph.;" Naves Novis. App. (1882) 278.

*Areca catechu* var. *alba* Becc.,

*Areca catechu* var. *batanensis* Becc., PJS 14 (1919) 304. --Type: BS 3824 Fénix (FI, holo; iso US). Batan: Basco, along a mountain stream.

*Areca catechu* var. *longicarpa* Becc., PJS 6 c (1911) Bot. 229, 14 (1919) 304, t. 2, Fig. 2. --Type: BS 10470 McGregor. Polillo, Probably from planted trees.

**Areca catechu var. portoricensis** Becc.

**Areca catechu var. semisilvatica** Becc.

*Areca catechu* var. *silvatica* Becc., PJS 14 (1919) 304, t. 1, Fig. 2. --Type: Merrill 9447 (FI, holo; iso US). Palawan: near Lake Manguao, in primary forest at a place where an old trail crosses a small stream.

*Areca macrocarpa* Becc., PJS 4 (1909) Bot. 601, 14 (1919) 306, t. 3, Fig. 2. --Type: FB 9103 Whitford & Hutchinson (FI, holo). Mindanao: Zamboanga del Sur prov., Port Banga, Jan. 1908.

Old World Tropics generally, introduced in the New World. Generally cultivated throughout the settled areas of the Philippines, in some places spontaneous. SABTANG, BATAN (Basco; Mt Iraya), LUZON: Cagayan, Isabela (Jones), Bataan (Lamao River), Rizal (Antipolo), Laguna (Mt Makiling), Quezon (Lucban; Tiaong), Camarines Norte (Labo), PALAWAN (Lake Manguao), Zamboanga peninsula (La Paz, Camp Suzana), Zamboanga del Sur (Port Banga). Misamis Occidental (Mt Malindang).

Thought to be possibly indigenous in the Philippines, having been found once spontaneous in primary forests in Palawan.

Conservation status: Least Concern (LC)

**4. *Areca costulata*** Becc., PJS 14 (1919) 310. --Type: *BS 15236 Ramos* (FI, holo; iso K). Leyte: Dagami

LEYTE, DINAGAT, MINDANAO: Surigao del Sur (Diwata Mtns). Low and medium altitude primary forests.

Conservation status: Near Threatened (NT)

**5. *Areca hutchinsoniana*** Becc., PJS 14 (1919) 312; --*Areca mammillata* Becc. var. *mindanaoensis* Becc., PJS 4c (1909) 602. --Type: FB 9141 Whitford & Hutchinson (FI, holo). Mindanao: Zamboanga del Sur prov., Port Banga, altitude 20m.

SIASI, BASILAN (Maliqui; Mt Bulanting), MINDANAO: Zamboanga del Sur (Port Banga; Kabasalan, Dipala; Muralong Mt.; Malangas), Zamboanga del Norte (Malayal; Siocon, Laclacan); Lanao, Low to medium altitude primary forests.

Conservation status: Vulnerable (VU).

**6. *Areca ipot*** Becc. in Elmer, LPB 2 (1909) 639. --Type: Elmer 9292 (FI, lecto; isolecto BM, BO, NSW, NY). Luzon: Quezon prov., Lucban.

*Areca catechu* L. var. *humilis* Blanco, FI. Filip. ed. 2 (1837) 716.

*Areca ipot* Becc. var. *pollilensis* Becc., PJS 6 c (1911) 229. --Type: 6938 Robinson (holo FI; iso BM). Polillo Island

LUZON: Aurora, Laguna (Nagcarlan, Luisiana), Quezon (Lucban; Sampaloc), POLILLO (Burdeos). Forest along streams at low and medium altitudes. Also planted in and about towns.

Conservation status: Vulnerable (VU)

**7. *Areca parens*** Becc., PJS 14 (1909) 307. --Type: FB 21712 Peñas, Soriano & Abellanosa (FI\*, holo). Luzon: Camarines prov., precise locality not known, 23 April 1914.

LUZON: Camarines Norte (Mt Labo), Camarines Sur (Bicol National Park). In lowland forests, often in damp, semi-swampy areas, also along streams, altitude up to 600m.

Conservation status: Critically Endangered (CR)

**8. *Areca vidaliana*** Becc., PJS 2 c (1907) Bot. 222. --Type: Vidal 3955 (FI, holo; iso K). Paragua (=Palawan). No exact locality.

*Areca mammillata* Becc., PJS 2 c (1907) Bot. 220. --Type: FB 3816 Curran (FI, holo). Palawan: Sariban River

Balembangan, Banggi and SW Philippines. BUSUANGA, PALAWAN (Puerto Princesa):

St Paul's Bay National Park, Mt Beaufort; Mt Binohan; Bagumbayan; Brookes Point, Aribungos. Lowland swampy forest, also on forested slopes.

Conservation status – Near Threatened (NT)

**9. *Areca whitfordii*** Becc., PJS 2 c (1907) Bot. 219, *ibid.* 14 (1919) 306; --Merr., EPFP 1 (1922) 169; --Type: Whitford 1372 (FI, holo). Mindoro: Mindoro Oriental prov., Bongabon River.  
*Areca whitfordii* Becc. var. *luzonensis* Becc., PJS 14 (1919) 306; --Merr., EPFP 1 (1922) 169. --Type: BS 11384 McGregor (FI, holo; iso BM). Luzon: Nueva Vizcaya prov., Dupax.  
LUZON: Cagayan (Mt Narig), Isabela (Palanan), Nueva Vizcaya, Sorsogon, MINDORO: Mindoro Oriental (Bongabon River). Semi-swampy forests at low altitude.  
Conservation status: Near Threatened (NT)

### 3. *Arenga* Labillardière

c. 21 species, India to S. China and Ryukyus, through Malesia and N. Australia; 4 species in the Philippines, 1 endemic.

**1. *Arenga brevipes*** Becc., Malesia 3 (1889) 95. --Type from Borneo.  
Sumatra, Borneo, Philippines: PALAWAN (Puerto Princesa, St Paul's Bay National Park; Aborlan, Talakaigan Watershed). Low altitude forests.  
Conservation status: Near Threatened (NT).

**2. *Arenga pinnata*** (Wurmb.) Merr., *Interpr. Herb. Amboin.* (1917) 119; --*Saguerus pinnatus* Wurmb, *Verh. Batav. Genootsch. Kunsten* 1 (1779) 351. --Type:  
*Caryota onusta* Blanco, *Fl. Filip.* (1837) 741. --Type:  
S China, Indochina, Sumatra, Peninsular Malaysia, Java, Philippines, Sulawesi, Ambon.  
LUZON: Rizal, Laguna (Mt Makiling), Cavite, Quezon (Mt Banahaw de Lucban), POLILLO, BOHOL (Bilar), BILIRAN, MINDANAO. Widely cultivated and abundant in some forested areas, but never venturing far from human settlements. It has all the appearance of an introduced palm that has become naturalized. Sugar palm, kaong, kabo-negro.  
Conservation status: Least Concern (LC)

**3. *Arenga tremula*** (Blanco) Becc., PJS 4 c (1909) Bot. 612, *quoad syn. excl. descr.*; --Merr. *Sp. Blancoanae* (1918) 87; Brown & Merr. in *Philip. Bur. Forestry Bull.* 18 (1919) 34, t. 9; --*Didymosperma tremulum* (Blanco) Wendl. & Drude in *Kerch. Palm.* (1878) 243; --*Wallichia tremula* (Blanco) Mart. *Hist. Nat. Palm.* 3 (1849) 315; Naves *Novis. App.* (1882) 280; --Vidal *Rev. Pl. Vasc. Filip.* (1886) 279; --*Caryota tremula* Blanco *Fl. Filip.* (1837) 744, ed. 2 (1845) 512, ed. 3, 3 (1879) 144; Merr. in *Govt. Lab. Publ. (Philip.)* 27 (1905) 88. --Type:  
*Saguerus mindorensis* (Becc.) OF Cook, *Invent. Seeds Import. U. S. Dept. Agr.* 33 (1915) 10; --*Arenga mindorensis* Becc. in *Perk. Frag. Fl. Philip.* (1904) 48, *Webbia* 1 (1905) 329, PJS 14 (1919) 355. --Type: Merrill 1790 (holo ??). Mindoro: Mindoro Oriental prov., Calapan.  
LUZON: Bataan, Laguna (Mt Makiling; Calauan), Quezon (Mauban; Pagbilao; Unisan; Atimonan), Batangas (Lobo), Camarines Sur (Liguanan), MINDORO: Mindoro Oriental (Calapan), MINDANAO: Davao. Low altitude thickets and secondary forests, occurring in large clumps.  
Conservation status – Near Threatened (NT)

**4. *Arenga undulatifolia*** Becc., Malesia 3 (1886) 92; --Type:  
*Saguerus undulatifolius* (Becc.) Kuntze, *Revis. Gen. Pl.* 2 (1891) 736.  
*Arenga ambong* Becc., PJS 2 c (1907) Bot. 229. --Type: Copeland 1681 (FI, holo). Mindanao: Zamboanga, San Ramon  
Borneo, Philippines, Sulawesi. LUZON: Quezon, Sorsogon, PALAWAN (Puerto

Princesa; Irawan; Aborlan, Mt Tabiey; Brookes Point, Aribungos & Addison's Peak), BALABAC, SULU, BASILAN, MINDANAO: Zamboanga (San Ramon), Zamboanga del Norte (Baliguian). Low altitude forests.  
Conservation status – Near Threatened (NT)

#### 4. *Calamus* Linnaeus

Ca. 370 species, Africa, India and S. China, through Malesia to New Guinea, N. Australia and Fiji; c. 45 species in the Philippines, including 2 new species and 1 new variety, 33 species endemic.

**1. *Calamus aidaie*** Fernando, Gard. Bull. Sing. 41 (1988) 49, Fig. 1A-F. --Type: Baja-Lapis 123 (K, holo; iso LBC). Samar: Western Samar prov., Basey, Guirang, Rawis.  
LUZON: Sorsogon (Irosin, Mt Bulusan), BILIRAN (Naval, Mojon), SAMAR: Western Samar (Basey), DINAGAT, MINDANAO: Agusan del Sur (Trento), Surigao del Norte, Surigao del Sur (Bislig). Dipterocarp forest, 50-500m.  
Conservation status – Near Threatened (NT)

**2. *Calamus arugda*** Becc., PJS 4 c (1909) Bot. 622; 14 (1919) 352; --Merr., EPFP 1 (1922) 147.  
--Type: FB 6649 Klemme (FI, holo). Luzon: Cagayan prov., Lallo, altitude 50m.  
LUZON: Ifugao (Damag), Cagayan (Lallo), Isabel. Low altitude primary forests.  
Conservation status: Near Threatened (NT)

**3. *Calamus balerensis*** Fernando, Gard. Bull. Sing. 41 (1988, publ. 1989) 51, Fig. 2A-D. --Type: Fernando 478 (LBC, holo; iso K). Luzon: Aurora prov., Baler.  
LUZON: Aurora (Baler: Digisit & Semento). In forest over ultramafics with large boulders, facing the sea, alt. c. 50m. Thus far known only from two collections from the general vicinity of the type locality.  
Conservation status: Endangered (EN)

**4. *Calamus batanensis*** (Becc.) Baja-Lapis, Sylvatrop 12 (1987 publ. 1989) 73; --*Calamus siphonospathus* Mart. var. *batanensis* Becc., PJS 3 c (1908) 342. --Type: BS 3611 Fenix (FI, holo). Batan: Mt Iraya. Lowland forest.  
BATAN (Mt Iraya). Lowland forest.  
Conservation status: Critically Endangered (CR)

**5. *Calamus bicolor*** Becc. in Elmer, LPB 8 (1919) 3055; PJS 14 (1919) 356; --Merr., EPFP 1 (1922) 147. --Type: *Elmer 10541* (holo FI, iso BM, BO, CAS, K, NY, US). Mindanao: Davao prov., Mt Apo, Todaya, altitude 1300m.  
MINDANAO: Zamboanga, Davao. Primary forests, 1200-1800m.  
Conservation status – Near Threatened (NT)

**6. *Calamus caesius*** Blume, Rumphia 3 (1847) 57. --Type:  
Peninsular Thailand, Peninsular Malaysia, Sumatra, Borneo and SW Philippines.  
PALAWAN.  
Conservation status: Near Threatened (NT).

**7. *Calamus cumingianus*** Becc., Rec. Bot. Surv. India 2 (1902) 210; PJS 14 (1919) 351; --Merr., EPFP 1 (1922) 147. --Type: Cuming 762 (BM, iso). Luzon.  
LUZON: Quezon, MINDANAO: Agusan del Norte. Low and medium altitude primary forests.

Distribution – Philippines: Luzon (Quezon), Mindanao (Agusan). Endemic.  
Conservation status – Near Threatened (NT)

**8. Calamus diepenhorstii** Miq., Fl. Ind. Bat. Suppl. (1860-61) 594; --Ann. Bot. Gard. Calcutta 11 (1908) 96, 322, t. 126.

**var. exulans** Becc., PJS 4 c (1909) Bot. 627; *ibid.*, 6 c (1911) Bot. 230; 14 (1919) 350; --Merr., EPFP 1 (1922) 147. --Type: FB 756 Foxworthy (FI, holo). Palawan: Mt Victoria  
LUZON: Quezon, POLILLO, PALAWAN. Low altitude primary forests. The variety endemic, the species in Peninsular Malaysia, Sumatra, and Borneo  
Conservation status: Near Threatened (NT).

**9. Calamus dimorphacanthus** Becc., Rec. Bot. Surv. India 2 (1902) 214; PJS 4 c (1909) Bot. 631; *ibid.* 14 (1919) 355; --Merr., EPFP 1 (1922) 148. --Type: Elmer 6238 (FI, holo). Luzon: Benguet prov., Mt Sto Tomas.

**var. dimorphacanthus**  
LUZON, SIBUYAN, PANAY.

**var. benguetensis** Baja-Lapis, Sylvatrop 12 (1987 publ. 1989) 72. --Type:  
LUZON.  
Conservation status: Near Threatened (NT)

**var. halconensis** (Becc.) Baja-Lapis, Sylvatrop 12 (1987 publ. 1989) 73; --*Calamus halconensis* Becc., PJS 4 c (1909) Bot. 633; 14 (1919) 356; --Merr., EPFP 1 (1922) 149. --Type: FB 4399 Merritt (FI, holo). Mindoro: Mindoro Oriental prov., Mt Halcon, altitude 1500m.  
LUZON: Laguna (Laguna), MINDORO: Mindoro Oriental (Mt Halcon), PANAY, MINDANAO. Primary forests, altitude 450-1500m.

**var. montalbanicus** Becc., PJS 4 c (1909) Bot. 631; 14 (1919) 355; --Merr., EPFP 1 (1922) 148. --Type: Loher 7085 (K, holo). Luzon: Rizal prov., Montalban, Mt Batay, altitude 1380m.  
LUZON: Bataan, Rizal. Medium altitude primary forests.  
Conservation status: Near Threatened (NT).

**var. zambalensis** Becc., PJS 4 c (1909) Bot. 632; 14 (1919) 355; --Merr., EPFP 1 (1922) 148. --Type: FB 8412 Curran & Merritt. (FI, holo; iso US) Luzon: Zambales prov., Mt Tapulao, altitude 2000m.  
LUZON: Zambales, MINDORO, LEYTE. Mossy forest on exposed ridges, altitude c. 2000m in Zambales.

**10. Calamus discolor** C Martius, Hist. Nat. Palms 3 (1838) 341; --Becc., PJS 4 c (1909) Bot. 635; 14 (1919) 350; --Merr., EPFP 1 (1922) 148.

**var. discolor**  
LUZON: Laguna, Quezon, Sorsogon. Low to medium altitude primary forests. Young plants commonly cultivated in Manila for ornamental purposes.

**var. negrosensis** Becc., PJS 4 c (1909) Bot. 635; --Merr., EPFP 1 (1922) 148. --Type: FB 12432 Danao. Negros Island, Cadiz, 50 m alt.  
NEGROS, SIARGAO, MINDANAO: Surigao. Primary forests at low to medium altitudes.

**11. Calamus elmerianus** Becc. in Elmer, LPB 2 (1909) 647; PJS 14 (1919) 353; --Merr., EPFP 1 (1922) 148. --Type: *Elmerianus*  
Quezon Prov., Lucban  
LUZON: Quezon, DINAGAT, MINDANAO: Davao, Agusan. Primary forests, often in mossy forests at 1300-1800m, sometimes also at low altitude.  
Conservation status – Near Threatened (NT)

**12. Calamus erinaceus** (Becc.) Becc., Ann. Roy. Bot. Gard. Calcutta 12(1): 232 (1911) *auct. non* Dransf., Kew Bull. 32 (1978) 484; --*Daemonorops erinacea* Becc., Rec. Bot. Surv. India 2: 225 (1902). -- Type: *Beccari P.B. 2192* (holotype FI), Borneo, Sarawak, Sibö

**var. erinaceus**

S. Thailand, Peninsular Malaysia, Sumatra, Borneo and the Philippines: PALAWAN.  
Conservation status – Near Threatened (NT)

**13. Calamus filispadix** Becc., PJS 6 c (1911) 230; 14 (1919) 350; --Merr., EPFP 1 (1922) 148. -- Type: *Curran F.B. 10630* (holotype FI), Philippines, Luzon Island, Albay Prov., Adlumay Hills.  
LUZON: Rizal, Quezon, Camarines, Sorsogon, POLILLO, CATANDUANES, MASBATE, SAMAR, PALAWAN, MINDANAO: Agusan. Low and medium altitude forests, ascending to 1200m.

Conservation status – Near Threatened (NT)

**14. Calamus foxworthyi** Becc., PJS 14 (1919) 352, *nomen nudum*; Ann. Bot. Gard. Calcutta 11 Suppl. 116, t. 65. --Merr., EPFP 1 (1922) 149. --Type: BS 690 Foxworthy (FI\*, holo). Palawan: Victoria Peaks, March-April 1906.

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Conservation status – Near Threatened (NT)

**15. Calamus grandifolius** Becc., PJS 4 c (1909) Bot. 629; --Merr., EPFP 1 (1922) 149. --Type: *Loher 7088* (holotype K), Philippines, Luzon Island, Laguna Prov., Mt Banahaw  
LUZON: Laguna, Quezon, CATANDUANES. Low and medium altitude forests.

**16. Calamus javensis** Blume, Rumphia 3 (1837) 62.

S Thailand, Peninsular Malaysia, Sumatra, Borneo, Java and the Philippines: PALAWAN  
Distribution – Pen. Thailand to W. Malesia, Philippines (Palawan). 41 THA 42 BOR JAW  
MLY PHI SUM.

Conservation status – Near Threatened (NT)

**17. Calamus jenningsianus** Becc., PJS 4 c (1909) Bot. 623. --Type: FB 4400 Merritt (FI, holo).  
Mindoro: Mindoro Oriental prov., Mt Halcon, altitude 1500m.

MINDORO: Mindoro Oriental (Mt Halcon). Mossy forest, c. 1500m.

Conservation status – Critically Endangered (CR)

**18. Calamus maliwaliensis** Dransf., Kew Bull. 36 (1982) 805.

Distribution – Borneo (Sabah) to Philippines. PALAWAN: Maliwali.

Conservation status – Near Threatened (NT)

**19. Calamus manillensis** (C Martius) Wendl. in Kerch. Palm. (1878) 237; --Becc. in Elmer, LPB 8 (1919) 3052; PJS 14 (1919) 352; --*Daemonorops ?manillensis* Mart., Hist. Nat. Palm 3 (1849) 330, t. 175, Fig. 1-3.

LUZON: Cagayan, Nueva Vizcaya, Quezon, DINAGAT, MINDANAO: Davao, Agusan, Surigao. In humid forests, 600-1000m.

Conservation status – Near Threatened (NT)

**20. Calamus marginatus** (Blume) C Martius, Hist. Nat. Palm. 3 (1849) 342; --*Daemonorops marginata* Blume, Rumphia 3: 24 (1847). Type:

Sumatra, Borneo and the Philippines: PALAWAN.

Conservation status – Near Threatened (NT)

**21. Calamus megaphyllus** Becc., Ann. Roy. Bot. Gard. (Calcutta) 11(App.): 66 (1913). Type: *Elmer 11878* (holotype FI; isotypes CAS, K, NY, US), Philippines, Mindanao Island, Davao Prov., Todaya, Mt Apo, 914 m alt.

LEYTE, MINDANAO: Agusan, Davao. Forests, up to 900m.

Conservation status – Near Threatened (NT)

**22. Calamus melanorrhynchus** Becc., Ann. Roy. Bot. Gard. (Calcutta) 11(App.): 30 (1913). Type: *Elmer 11708* (holotype FI; isotypes CAS, K, NY, US), Philippines, Mindanao Island, Davao Prov., Todaya, Mt Apo, 1200 m alt.

MINDANAO: Davao. Forest, c. 1200m.

Conservation status – Near Threatened (NT)

**23. Calamus merrillii** Becc. in Martelli, Webbia 1 (1905) 347; PJS 4 c (1909) 629; 14 (1919) 351; -- Merr., EPFP 1 (1922) 149, under synonymy of *C. maximus* Blanco. –Type: *Merrill 1893* (B, holo; iso FI), Philippines, Luzon Island, Rizal Prov., Bosoboso.

*Calamus maximus* Blanco, Fl. Filip. (1837) 266; ed. 2 (1845) 185; ed. 3, 1 (1877) 331. –Type: None thought to exist, possible neotype: *Merrill Sp. Blancoanae 879* (US\*). Luzon: Rizal prov., Caytimon, forested slopes, 13 March 1915.

**var. merrillii**

LUZON: Rizal, Laguna, Quezon, MASBATE, PALAWAN, PANAY, MINDANAO: Lanao, Davao, Agusan, BASILAN. Medium altitude primary forests, ascending to 1200m.

Conservation status – Near Threatened (NT)

**var. merrittianus** Becc., PJS 14 (1919) 351. –Type: FB 3912 Merritt. (holotype FI, ?K, US), Philippines, Mindoro Island, Bongabong River.

*Calamus maximus* var. *merrittianus* (Becc.) Merr., EPFP 1 (1922) 150.

LUZON: Quezon, MINDORO. Low altitude primary forests.

Conservation status – Near Threatened (NT)

**var. nanga** Becc., PJS 14 (1919) 351; Becc. in Elmer, LPB 8 (1919) 3057. –Syntypes: *Elmer 11110* (L\*), *Elmer 11874* (GH\*, US\*). Both from Mindanao: Davao, Mt Apo, Todaya, May 1909. Type: ? *Elmer 11874* (holotype FI; isotypes US), Philippines, Mindanao Island, Davao Prov., Todaya, Mt Apo, 300 - 600 m alt.

*Calamus maximus* Becc. var. *nanga* (Becc.) Merr., EPFP 1 (1922) 150.

MINDANAO: Davao (Mt Apo). Primary forest, altitude 600-1000m.

Conservation status – Near Threatened (NT)

**24. Calamus microcarpus** Becc., Rec. Bot. Surv. India 2 (1902) 213, PJS 4 c (1909) Bot. 627; *ibid.* 14 (1919) 356; in Elmer, LPB 8 (1919) 3055; --Merr., EPFP 1 (1922) 150. –Type: *Elmer 10676* (NY\*, iso). Mindanao: Davao, Mt Apo, Todaya, May 1909.

**var. microcarpus**

LUZON: Rizal, Laguna, Quezon, Camarines, Sorsogon, POLILLO, MINDORO, LEYTE, MINDANAO: Lanao, Davao (Mt Apo), Agusan. Low and medium altitude primary forests, ascending to 1200m.

**var. diminutus** Becc., PJS 14 (1919) 356; --Merr., EPFP 1 (1922) 151. –Type: BS 16599. Luzon: Laguna prov., San Antonio.

LUZON: Laguna, Quezon (Kabibihan, BS 13240 Ramos possibly belongs here according to Beccari). Low altitude primary forests.

**var. longiocrea** Baja-Lapis, Sylvatrop 12 (1987 publ. 1989) 68.

LUZON

Conservation status – Near Threatened (NT)

**25. Calamus microsphaerion** Becc. in Perkins, Frag. Fl. Philipp. (1904) 45; --PJS 4 c (1909) Bot. 627; *ibid.* 14 (1919) 353; --Merr., EPFP 1 (1922) 151. --Type: Merrill 507. Culion: Halsey Harbor,

**var. microsphaerion**

Borneo and the Philippines: LUZON, BUSUANGA, PALAWAN

**var. spinosior** Becc., Philipp. J. Sci., C 14: 354 (1919). Type: *Merrill 9358* (holotype FI; isotype US), Philippines, Palawan Island, Taytay  
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**26. Calamus mindorensis** Becc., Philipp. J. Sci., C 2: 235 (1907). Type: *McGregor 309* (holotype FI; isotype US), Philippines, Mindoro Island, Balete, Baco River

LUZON: Laguna, MINDORO. Low altitude forests.

Conservation status – Near Threatened (NT)

**27. Calamus mitis** Becc., Philipp. J. Sci., C 3: 341 (1909). Type: *Fenix B.S. 3817* (holotype FI), Philippines, Batanes Prov., Batan Is.

BATANES, BABUYAN, LUZON

Conservation status – Near Threatened (NT)

**28. Calamus moseleyanus** Becc., Rec. Bot. Surv. India 2: 211 (1902). Type: *Moseley s.n.* (holotype K), Philippines, Malanipa Island

MINDANAO: Zamboanga, Davao, BASILAN, MALANIPA. Low altitude forests, ascending to 1000m.

Conservation status – Near Threatened (NT)

**29. Calamus multinervis** Becc., Ann. Roy. Bot. Gard. (Calcutta) 11(App.) (1913) 88. --Type: *Elmer 11791* (holotype FI; isotypes CAS, K, US) Philippines, Mindanao Island, Davao Prov., Todaya, Mt Apo, Baruring River, 1200 m alt.

MINDANAO: Davao (Mt Apo). Primary forest, c. 1200m.

Conservation status – Near Threatened (NT)

**30. Calamus ornatus** Blume ex Schultes *f.*, Syst. Veg., ed. 15 bis [Roemer & Schultes] 7, 2 (1830) 1326.

*Calamus ornatus* var. *philippinensis* Becc., *Webbia* 1: 346 (1905).

Distribution – Pen. Thailand to W. & C. Malesia, including Philippines (Luzon, Polillo, Mindoro, Negros, Panay, Leyte, Mindanao, Basilan). 41 THA 42 BOR JAW MLY PHI SUL SUM.

LUZON: Cagayan, Isabel, Bataan, Rizal, Laguna, Quezon, Sorsogon, POLILLO, MINDORO, NEGROS, PANAY, LEYTE, MINDANAO: Davao, Surigao, BASILAN. Low and medium altitude primary forests.

Conservation status – Near Threatened (NT)

**var. pulverulentus** Fernando, Gard. Bull. Sing. 41 (1988) 53, Fig. 3A-I. --Type: Fernando 599 (LBC, holo; iso K). Mindanao: Zamboanga del Norte prov., La Paz.

PALAWAN (Puerto Princesa, Bagumbayan; Aborlan, Talakaigan River), MINDANAO: Zamboanga del Norte (Malayal; La Paz). In dipterocarp forest, c. 100-800m.

Conservation status – Near Threatened (NT)

**31. Calamus ramulosus** Becc., in G.H.Perkins & al., Fragm. Fl. Philipp. 1: 46 (1904). Type: *Merrill 2070* (holotype FI), Philippines, Luzon Island, Quezon Prov., Guinayangan

LUZON



Conservation status – Near Threatened (NT)

**32. Calamus reyesianus** Becc., Philipp. J. Sci., C 2: 237 (1907). Type: *Reyes s.n.* (holotype FI), Philippines, Luzon Island, Quezon Prov., Unisan  
LUZON: Laguna, Quezon, MINDORO, MINDANAO. Low and medium altitude forests.  
Conservation status – Near Threatened (NT)

**33. Calamus samian** Becc., Ann. Roy. Bot. Gard. (Calcutta) 11(App.): 92 (1913). Type: *Elmer 11336* (holotype FI; isotypes CAS, K, NY, US), Philippines, Mindanao Island, Davao Prov., Todaya, Mt Apo, 1400 m alt.  
LUZON: Sorsogon, LEYTE, MINDANAO: Davao. Primary forests, c. 1300m.  
Conservation status – Near Threatened (NT)

**34. Calamus scipionum** Lour., Fl. Cochinch. (1790) 210.  
S. Thailand, Peninsular Malaysia, Sumatra, Borneo and the Philippines: PALAWAN.  
Conservation status – Near Threatened (NT)

**35. Calamus siphonospathus** C Martius, Hist. Nat. Palm. 3: 342 (1853).  
**var. siphonospathus**  
LUZON: Cagayan, Isabela, Pampanga, Rizal, Laguna, Quezon, MINDORO, MINDANAO. Low and medium altitude primary forests, ascending to 1200m.

**var. dransfieldii** Baja-Lapis, Sylvatrop 12 (1987 publ. 1989) 80.  
Sulawesi and the Philippines: MINDANAO.

**var. farinosus** Becc., Ann. Roy. Bot. Gard. (Calcutta) 11: 474 (1908).  
LUZON

**var. oligolepis** Becc., Webbia 1: 353 (1905).  
LUZON

**var. polylepis** Becc., Webbia 1: 354 (1905).  
LUZON

**var. sublaevis** Becc., Webbia 1: 354 (1905).  
LUZON, MINDANAO

**36. Calamus spinifolius** Becc., Rec. Bot. Surv. India 2: 202 (1902). Type: *Vidal 3954* (holo K), Philippines, Panay Island, Iloilo Prov., Igaras  
LUZON, PANAY, MINDANAO  
Conservation status – Near Threatened (NT)

**37. Calamus subinermis** Wendl. ex Becc., Rec. Bot. Surv. India 2 (1902) 212.  
N Borneo, Philippines, N Sulawesi. PALAWAN, BASILAN  
Conservation status – Near Threatened (NT)

**38. Calamus symphysipus** C Martius, Hist. Nat. Palm. 3 (1849) 336;  
Sulawesi and the Philippines: LUZON: Sorsogon, CATANDUANES, BUCAS GRANDE, MINDANAO: Agusan. Primary forests up to 900m.  
Conservation status – Near Threatened (NT)

**39. Calamus trispermus** Becc. in GH Perkins & al., *Fragm. Fl. Philipp.* 1: 46 (1904). Type: *Merrill 1645* (iso FI), Philippines, Luzon Island, Rizal Prov., Antipolo  
LUZON: Rizal. Forests at medium altitudes.

Conservation status – Near Threatened (NT)

**40. Calamus usitatus** Blanco, *Fl. Filip.*: 265 (1837). Type :

*Calamus usitatus* Blanco var. *major* (Becc.) Merr., *EPFP* 1 (1922) 154.

*Calamus usitatus* Blanco var. *palawanicus* (Becc.) Merr., *EPFP* 1 (1922) 154. –Type:

*Calamus blancoi* Kunth, *Enum.* 3 (1841) 595; --Becc., *PJS* 4 c (1909) Bot. 635; 14 (1919) 349; --Merr., *EPFP* 1 (1922) 147.

*Calamus meyenianus* Schauer, *Nov. Actorum Acad. Caes. Leop.-Carol. Nat. Cur.* 19 (Suppl. 1): 425 (1843). Type: *Callery s.n.* (holo P), Philippines, Luzon Island, Pangasinan Prov., San Mateo, Mt Masiqui  
Borneo and the Philippines. Throughout the archipelago.

As *C. blancoi*: LUZON: Ilocos Norte, Zambales, Bataan, Bulacan, LEYTE, MINDANAO: Zamboanga. Low altitude forests.

Conservation status – Least Concern (LC)

**41. Calamus vidalianus** Becc., *Rec. Bot. Surv. India* 2: 212 (1902). Type: *Vidal 938* (holotype K), Philippines, Luzon Island, Quezon Prov., Unisan

LUZON: Nueva Ecija, Bataan, Rizal, Quezon, Camarines, PANAY. Low and medium altitude primary forests.

Conservation status – Near Threatened (NT)

**42. Calamus vinosus** Becc., *LPB* 8 (1919) 3061. --Type: *Elmer 14158* (FI, holo; iso BM, CAS, K, NY, US). Mindanao: Agusan del Norte prov., Mt Urdaneta, altitude 1448m.

MINDANAO: Agusan del Norte (Mt Hilong-hilong). Forested ridges, altitude c. 1450m.

Conservation status – Critically Endangered (CR)

**43. Calamus viridissimus** Becc., *Ann. Roy. Bot. Gard. (Calcutta)* 11(App.): 84 (1913). Type: *Elmer 11938* (holotype FI; isotypes CAS, K, NY, US), Philippines, Mindanao Island, Davao Prov., Todaya, Mt Apo, 300 m alt.

MINDANAO: Davao. Forests and wooded ravines, c. 300m.

Conservation status – Near Threatened (NT)

Ined. names:

**Calamus daemonoropoides** Fernando, ined.

LUZON, SAMAR, MINDANAO

**Calamus erinaceus (Becc.) Dransf. var. declivium** Fernando, ined.

BUSUANGA, PALAWAN.

**Calamus sp. nov.**, Fernando, ined.

MASBATE

## 5. *Caryota* Linnaeus

Ca. 12 species, India to S. China, through Malesia to N. Australia; 3 species and 1 variety in the Philippines, 1 species endemic.

**Caryota cumingii** Lodd. ex C Martius, *Hist. Nat. Palm.* 3: 315 (1853). Type:

*Caryota blancoi* Hook.f., Kew Rep. 1882: 61 (1884).

*Caryota merrillii* Becc., Webbia 1: 333 (1905). Type : *Merrill 2880* (holotype FI; isotype US), Philippines, Luzon Island, Pangasinan Prov., Bautista

LUZON: Apayao, La Union, Pangasinan, Nueva Vizcaya, Nueva Ecija, Rizal, Laguna, Quezon, MINDORO, PALAWAN, PANAY, GUIMARAS, MINDANAO. Lowland forests. Sometimes cultivated as an ornamental.

**Caryota maxima** Blume, Hist. Nat. Palm. 3 (1838) 195.

*Caryota rumphiana* Mart var. *oxyodonta* Becc., Philipp. J. Sci. 14 (1919) 337.

*Caryota rumphiana* Mart var. *philippinensis* Becc., Philipp. J. Sci. 14 (1919) 337.

China, Myanmar, Thailand, Laos, Vietnam, Sumatra, Peninsular Malaysia, Java, Philippines. LUZON: Cagayan, Isabela, Rizal, Laguna, Quezon, Sorsogon, MINDORO, NEGROS, MINDANAO: Cotabato, Davao, Agusan. In primary and secondary forests at low and medium altitudes. Occasionally cultivated as an ornamental.

**Caryota mitis** Lour., Fl. Cochinch.: 697 (1790). Type:

Nicobars, SW and S China, Myanmar, Thailand, Cambodia, Laos, Vietnam, Peninsular Malaysia, Sumatra, Borneo, Java, Philippines, Sulawesi. PALAWAN.

Conservation status – Near Threatened (NT)

**Caryota rumphiana** Mart., Hist. Nat. Palm. 3: 195 (1838). Type:

Distribution – Philippines to Solomon Is. 42 MOL PHI SUL 43 NWG SOL 50 QLD.

Dubious taxon:

**Caryota majestica** Linden

## 6. *Cocos* Linnaeus

Monotypic, origin of Western Pacific, widely cultivated throughout tropics and subtropics.

**1. *Cocos nucifera*** L., Sp. Pl.: 1188 (1753).

Distribution – C. Malesia to SW. Pacific, widely introduced elsewhere. (29) mdg (38) oga (40) ind srl (41) tha 42 bor jaw mly MOL PHI 43 NWG 50 QLD 60 VAN (61) mrq sci tua (62) crl mrn mrs (63) haw (80) blz (81).

Throughout the Philippines, extensively cultivated; wild-types in E SAMAR [wild-types also in E Australia]. From the seashore inland, usually up to c. 700m, in some regions up to 1500m.

## 7. *Corypha* Linnaeus

c. 6-8 species, India to N. Australia; 1 species in the Philippines.

**1. *Corypha microclada*** Becc., Webbia 5 (1921) 7. –Type: BS 18720 McGregor. Biliran.

Distribution – Philippines (Biliran Is.). 42 PHI.

Conservation status – Vulnerable (VU)

**2. *Corypha utan*** Lam., Encycl. 2: 131 (1786).

*Corypha elata* Roxb., Fl. Ind. ed. 2, 2 (1832) 176; --Merr., Fl. Manila (1912) 123; EPFP 1 (1922) 143.  
*Livistona vidalii* Becc., Webbia 1: 343 (1905).

Distribution – NE India to N Australia. 40 ASS BAN IND 41 AND CBD LAO MYA  
THA VIE 42 BOR JAW LSI MLY MOL PHI SUL SUM 43 NWG 50 NTA QLD.  
S India, Sri Lanka, Andaman Isls, SE Asia, N Australia. Throughout the Philippines in  
open places, in some regions widely scattered, in others subgregarious and abundant at  
low and medium altitudes.

### 8. *Daemonorops* Blume

Ca. 114 species, NE India to S China, through Malesia; c. 13 species and 1 variety in  
the Philippines, all endemic except 1 species.

**1. *Daemonorops affinis*** Becc. in Elmer, LPB 8 (1919) 3042. --Type: *Elmer 13978* (FI, holo;  
iso CAS, NY, US). Mindanao: Agusan del Norte prov., Cabadbaran, Mt Urdaneta, Duros  
Peak, altitude 1219m.

MINDANAO: Agusan del Norte (Mt Urdaneta). Upper montane forest on exposed peaks  
and ridges, altitude c. 1200m. Known only from the type collection.

Conservation status: Critically Endangered (CR)

**2. *Daemonorops clemensiana*** Becc., Philipp. J. Sci., C 4: 636 (1909). Type: *Clemens 1227*  
(holotype FI), Philippines, Mindanao Island, Lake Lanao, Camp Keithley  
MINDANAO.

**3. *Daemonorops curranii*** Becc., Philipp. J. Sci., C 2: 238 (1907). Type: *Curran F.B. 3791*  
(holotype FI), Philippines, Palawan Island  
PALAWAN. Forests near sea level.

**4. *Daemonorops gracilis*** Becc., Leaflet Philipp. Bot. 8: 3044 (1919). Type: *Elmer 12945* (holotype  
FI; isotypes K, NY, US), Philippines, Palawan Island, Puerto Princesa, Mt Pulgar  
PALAWAN. Low altitude forests.

**5. *Daemonorops loheriana*** Becc., PJS 4 c (1909) Bot. 637; --Ann. Roy. Bot. Gard.  
(Calcutta) 12(1): 104 (1911). Type: *Loher 7073* (holotype K), Philippines, Luzon Island, Rizal Prov., Siya  
Bundok  
LUZON.

**6. *Daemonorops longipes*** (Griffith) C Martius, Hist. Nat. Palm. 3: 329 (1853). Type:  
\**Calamus longipes* Griff., Calcutta J. Nat. Hist. 5: 68 (1845).  
*Daemonorops virescens* Becc. in G.H.Perkins & al., Fragm. Fl. Philipp. 1: 47 (1904). Type: *Merrill 868*  
(holotype FI), Philippines, Palawan Island, San Antonio Bay  
Peninsular Malaysia, Sumatra, Borneo and the Philippines: PALAWAN.

**7. *Daemonorops margaritae*** (Hance) Becc., Rec. Bot. Surv. India 2: 220 (1902).  
**var. *palawanica*** Becc., Ann. Roy. Bot. Gard. (Calcutta) 12(1): 57 (1911). Type: *Foxworthy F.B. 899*  
(holotype FI), Philippines, Palawan Island, Iwahig  
PALAWAN. The species in S China. Low altitude forests. Rare.

**8. *Daemonorops mollis*** (Blanco) Merr., Sp. Blancoanae (1918) 86; --*Calamus mollis* Blanco, Fl.  
Filip. (1837) 264.  
BABUYAN ISLS to MINDANAO, in most islands and provinces. Low and medium  
altitude forests, often common.

**9. *Daemonorops ochrolepis* Becc.**, in G.H.Perkins & al., *Fragm. Fl. Philipp.* 1: 47 (1904). **Type:** *Daemonorops ochrolepis* Becc. var. *radulosus* Becc. in *Ann. Roy. Bot. Gard. (Calcutta)* 12: 162, t. 66 (1912). Type: *Curran F.B. 10190* (holotype FI; isotype US), Philippines, Luzon Island, Quezon Prov., Mauban, 1200-1500 m alt.  
LUZON: Ilocos Norte, Nueva Ecija, Rizal, Laguna, Quezon, Sorsogon, POLILLO, CATANDUANES, BILIRAN, PANAY, LEYTE, and MINDANAO. Primary forests at low and medium altitudes, ascending to 1200m. Common.

**10. *Daemonorops oligolepis* Becc.** in Elmer, *LPB* 8 (1919) 3035. --Type: Elmer 11757 (FI, holo; iso BO, BM, CAS, GH, K, NY, US). Mindanao: Davao, Mt Apo, Todaya, junction of Colon Creek with Baruring River, altitude 1143m.  
MINDANAO: Davao (Mt Apo). Montane primary forest, often on ridges along creek, c. 1100m.  
Conservation status: Critically Endangered (CR).

**11. *Daemonorops pannosa* Becc.** in Elmer *LPB* 8 (1919) 3033 (1919). --Type: Elmer 11600 (FI, iso BM, CAS, GH, K, NY, US). Mindanao: Davao prov., Mt Apo, Todaya, Mainit Creek, altitude 1219m.  
MINDANAO: Davao (Mt Apo). Montane forest along streams, c. 1200m. Known only from the type collection.  
Conservation status: Critically Endangered (CR).

**12. *Daemonorops pedicellaris* Becc.**, *Leafl. Philipp. Bot.* 8: 3040 (1919). Type: *Elmer 14132* (holotype FI; isotypes CAS, K, NY), Philippines, Mindanao Island, Agusan Prov., Cabadbaran, Mt Urdaneta  
LEYTE and MINDANAO: Lanao, Davao, Agusan. Primary forests on ridges, c. 650-1250m.

**13. *Daemonorops polita* Fernando**, *Gard. Bull. Sing.* 41 (1988) 56, Fig. 4A-H. --Type: Fernando 575 (LBC, holo; iso BH, K). Mindanao: Zamboanga peninsula, La Paz.  
MINDANAO: Zamboanga peninsula (La Paz; Kabasalan). In dipterocarp forest, alt. c. 600-800m.  
Conservation status: Near Threatened (NT)

**14. *Daemonorops urdanetana* Becc.**, *Leafl. Philipp. Bot.* 8: 3038 (1919). Type: *Elmer 14201* (holotype FI; isotypes CAS, K, NY, US), Philippines, Mindanao Island, Agusan Prov., Cabadbaran, Mt Urdaneta, 1676 m alt.  
MINDANAO: Agusan del Norte (Mt Urdaneta). Primary forests, c. 1600m.

## 9. *Heterospathe* R Scheffer

### Revision:

Fernando, ES. 1990. *The genus Heterospathe (Palmae: Arecoideae) in the Philippines*. *Kew Bulletin* 45: 219-234.

c. 40 species, Moluccas, New Guinea, Solomon Islands, Fiji, Vanuatu, and Micronesia; c. 12 species in the Philippines, all endemic except 1 species

**1. *Heterospathe brevicaulis* Fernando**, *Kew Bull.* 45 (1990) 220, Fig. 1. --Type: Fernando 534 (K, holo; iso BH, LBC). Luzon: Aurora prov., Baler, Saipon.  
LUZON: Aurora (Baler, Saipon). Lowland stream valley with large boulders, forest on ultramafics, altitude c. 50m. Known only from two collections from the type locality.

Conservation status : Endangered (EN)

**2. *Heterospathe cagayanensis*** Becc., PJS 4 c (1909) Bot. 611; --Fernando, Kew Bull. 45 (1990) 221. --Type: FB 11286 Klemme (FI, holo). Luzon: Cagayan prov., more precise locality not given. *Ptychoraphis cagayanensis* (Becc.) Becc., PJS 14 (1919) 326; --Merr., EPFP 1 (1922) 163. LUZON: Cagayan (Lallo, Magapig; Camalaniugan, Babayuan), Isabela (Divilacan, Aubarede peninsula; Palanan, Dimatog), Aurora (Dilasag; Baler, Digisit). Lowland forests. In Isabela found on ultramafic vegetation near the coast (as a trunk-forming palm in closed canopy forests and acaulescent on open scrubs). Conservation status – Near Threatened (NT)

**3. *Heterospathe califrons*** Fernando, Palms 45 (2001) 118, Fig. 1-6. --Type: Fernando 1567 & Sotalbo (LBC, holo; iso BH, K, PNH, PUH). Mindanao: Surigao del Sur prov., Carmen. NE MINDANAO: E slopes of Diwata Mtns, Surigao del Sur (Carmen). In forest on ultramafic rocks, often along small creeks and partially water-logged areas, alt. 580 m. Known only from the type locality. Conservation status: Critically Endangered (CR)  
Vernacular names – *yanisi* (Bagobo)

**4. *Heterospathe dransfieldii*** Fernando, Kew Bull. 45 (1990) 223, Fig. 2. --Type: Dransfield 6189 (K\*, holo; iso BH, PNH). Palawan: Puerto Princesa, Mt Beaufort & Thumb Peak. PALAWAN (vicinity of Mt Beaufort-Thumb Peak). Exposed ridge forest, altitude c. 850m. Thus far known only from the type locality. Conservation status: Critically Endangered (CR)

**5. *Heterospathe elata*** Scheff., Ann. Jard. Bot. Buitenz. 1 (1876) 141, 162; --Merr., EPFP 1 (1922) 162; --Fernando, Kew Bull. 45 (1990) 225. --Type: Fig. 134 in Scheff., loc. cit.  
**Distribution – C. Malesia (incl. Philippines) to Marianas. 42 MOL PHI 62 MRN. Phan.** Micronesia (Guam and Palau); Moluccas, and the Philippines. LUZON: Cagayan, Isabela, Laguna (Mt Makiling), Camarines Sur (Nabua), Sorsogon (Mt Bulusan), MINDORO: Mindoro Oriental (Bongabon; Pinamalayan), MASBATE (Palanog =Palanog), PANAY, SIQUIJOR, CEBU, BOHOL, SAMAR, DINAGAT, BUCAS GRANDE, MINDANAO: Lanao, Davao (Mt Apo). Lowland forests.

**6. *Heterospathe elmeri*** Becc. in Elmer, LPB 2 (1909) 646; --Fernando, Kew Bull. 45 (1990) 225. --Type: Elmer 9559 (FI, holo; iso BM, K, NY\*). Negros: Negros Oriental prov., Cuernos Mtns. *Ptychoraphis elmeri* (Becc.) Becc., PJS 14 (1919) 328; --Merr., EPFP 1 (1922) 164; --*Rhopaloblaste elmeri* (Becc.) Becc. ex Martelli, Atti. Soc. Tosc. Sci. Nat. Res. Pisa Mem. 44 (1934) 138, in Nuov. Gior. Bot. Ital. (n.s.) 42 (1935) 81. *Ptychoraphis microcarpa* Becc., PJS 14 (1919) 327; --Merr., EPFP 1 (1922) 164. --Type: BS 14678 Ramos (FI, holo; iso K). Camiguin de Misamis. *Rhopaloblaste microcarpa* (Becc.) Becc. ex Martelli, Atti. Soc. Tosc. Sci. Nat. Res. Pisa Mem. 44 (1934) 36, in Nuov. Gior. Bot. Ital. (n.s.) 42 (1935) 81. MINDORO, NEGROS: Negros Oriental (Cuernos Mtns); Kinabkaban River, CAMIGUIN. Forests at medium altitudes. Conservation status – Near Threatened (NT)

**7. *Heterospathe intermedia*** (Becc.) Fernando, Kew Bull. 45 (1990) 226; --*Rhopaloblaste intermedia* (Becc.) Becc. ex Martelli, Atti. Soc. Tosc. Sci. Nat. Res. Pisa Mem. 44 (1934) 137, in Nuov. Gior. Bot. Ital. (n.s.) 42 (1935) 81; --*Ptychoraphis intermedia* Becc. in Elmer, LPB 8 (1919) 3011; --Merr., EPFP 1 (1922) 164. --Type: Elmer 13663 (FI, lecto, chosen by HE Moore, Jr.; isolecto BM, K, NA\*, NY\*). Mindanao: Agusan del Norte prov., Cabadbaran, Mt Urdaneta. LUZON: Sorsogon (Mt Bulusan; Bulusan Lake), BILIRAN (Naval, Mt Sayao), LEYTE (Ormoc, Mt Janagdan; Baybay, Mt Pangasugan; Mt Abucayan), SAMAR: Catubig River,

MINDANAO: Agusan del Norte (Mt Urdaneta), Surigao del Norte (Mt Kabatuan). Forests, altitude 500-1000m.

Conservation status – Near Threatened (NT)

**8. *Heterospathe negrosensis*** Becc., PJS 4 c (1909) Bot. 611; --Merr., EPFP 1 (1922) 162; --Fernando, Kew Bull. 45 (1990) 227. --Type: Whitford 1539 (FI, holo). Negros: Negros Occidental prov., Mt Silay.

SIBUYAN (Mt Giting-giting), MASBATE (Aroroy), NEGROS: Negros Occidental (Mt Silay; Mt Marapara; Mt Canlaon; Mt Malbag =?Malbug), Negros Oriental (Cuernos Mtns).

Conservation status – Near Threatened (NT)

**9. *Heterospathe philippinensis*** (Becc.) Becc., PJS 4 c (1909) Bot. 610; --Merr., EPFP 1 (1922) 162; --Fernando, Kew Bull. 45 (1990) 227; --Ptychoraphis philippinensis Becc., Ann. Jard. Bot. Buitenz. 2 (1885) 90. --Type: Cuming 1476 (excluding infl. which belongs to *H. elata*; FI, holo; isoK). Luzon: Albay prov.

LUZON: Apayao, Ifugao (Mt Polis; Banawe, Bayninan), Benguet (Mt Atok), Isabela (Palanan), Nueva Vizcaya (Sta Fe, Imugan), Aurora (Baler; Aurora Memorial Forest Park; Maria Aurora), Quezon (Nakar; Sablang; Infanta; Real, Daraitan; Balete), Rizal (Mt Matulid; Montalban), Laguna, Camarines, Albay, Sorsogon (Mt Bulusan), BILIRAN (Mt Suiro), LEYTE (Dagami), DINAGAT, BUCAS GRANDE, MINDANAO: Davao Oriental (Mt Kampalili). Chiefly in primary lowland and medium altitude forests, ascending to 1600m or higher.

**10. *Heterospathe scitula*** Fernando, Kew Bull. 45 (1990) 228, Fig. 3. --Type: Fernando 506 (K, holo; iso BH, LBC). Luzon: Camarines Norte prov., Bicol National Park.

LUZON: Camarines Norte (Basud, Tuaca; Bicol National Park), Camarines Sur (Buhi), Albay (Daraga). Lowland dipterocarp forests on gentle slopes, c. 100-200m.

Conservation status: Critically Endangered (CR)

**11. *Heterospathe sibuyanensis*** Becc. in Elmer, LPB 8 (1919) 3014; --Merr., EPFP 1 (1922) 162; --Fernando, Kew Bull. 45 (1990) 230. --Type: Elmer 12350 (FI, holo; iso BISH, BM, CAS, K, NY\*, US). Sibuyan: Magallanes, Mt Giting-giting, altitude 230m.

SIBUYAN (Mt Giting-giting). Forest, c. 225m. Known only from the type collection despite repeated attempts to recollect it from the type locality.

Conservation status: Critically Endangered (CR)

**12. *Heterospathe trispatha*** Fernando, Kew Bull. 45 (1990) 231, Fig. 4. --Type: Fernando 481 (LBC, holo; iso BH, K). Luzon: Aurora prov., Baler, Dikaluyangan.

LUZON: Aurora (Dilasag; Baler). Lowland dipterocarp forest, alt. c. 50m.

Conservation status: Critically Endangered (CR)

[000.] *Heterospathe* sp. nov. Fernando  
PALAWAN

## 10. *Korthalsia* Blume

Ca. 25 species, Andamans to Myanmar, Indo-China, Thailand and throughout Malesia, 5 species in the Philippines, 2 endemic.

**1. *Korthalsia laciniosa*** C Martius, Hist. Nat. Palms 3 (1838) 211, 343; --Becc., PJS 14 (1919) 343; --Merr., EPFP 1 (1922) 146.

Andaman and Nicobar Islands, Myanmar, Thailand, Cambodia, Laos, Vietnam, Peninsular Malaysia, Sumatra, Java and the Philippines: LUZON: Quezon, Camarines, Sorsogon, POLILLO, CATANDUANES, LEYTE, PANAY, MINDANAO. Low and medium altitude primary forests.

**2. *Korthalsia merrillii*** Becc., Ann. Bot. Gard. Calcutta 12<sup>2</sup>: t. 81, ined., PJS 14 (1919) 342; --Merr., EPFP 1 (1922) 146. --Type: Merrill 9140 (FI, holo). Palawan: Malampaya Bay PALAWAN. Low altitude primary forests.

**3. *Korthalsia rigida*** Blume, Rumphia 2: 167 (1843).  
S Thailand, Peninsular Malaysia, Sumatra, Borneo, Philippines. PALAWAN  
41 THA 42 BOR MLY PHI SUM.

**4. *Korthalsia robusta*** Blume, Rumphia 2: 170 (1843).  
*Korthalsia squarrosa* Becc., PJS 4 c (1909) Bot. 620; 14 (1919) 343; --Merr., EPFP 1 (1922) 146. Type: *Curran F.B. 4185* (holotype FI; isotype US), Philippines, Palawan Island, Iwahig Sumatra, Borneo and the Philippines: PALAWAN, BALABAC. Low altitude primary forests.

**5. *Korthalsia scaphigeroides*** Becc., PJS 4 c (1909) Bot. 619; 14 (1919) 342; --Merr., EPFP 1 (1922) 146. --Type: *Hutchinson F.B. 4816* (holotype FI; isotypes NY, US), Philippines, Mindanao Island, Zamboanga  
BASILAN, MINDANAO: Zamboanga, Agusan del Sur, Surigao. Lows altitude primary forests.  
Conservation status – Near Threatened (NT)

## 11. *Licuala* Thunberg

c. 108 species, S.E. Asia to Pacific, 1 species in the Philippines.

**1. *Licuala spinosa*** Wurm., Verh. Bat. Genoots. 2 (1780) 469; --Merr., EPFP 1 (1922) 143. --Type: *Thunberg s.n.* (UPS, microfiche at K), Java; neotype selected by Saw (1997)  
Nicobar Isls, Andaman Isls, Hainan, Myanmar, Thailand, Vietnam, Sumatra, Peninsular Malaysia, Java, Borneo and the Philippines: BUSUANGA, CULION, PALAWAN, BALABAC, TAWITAWI. Lowland thickets, sometimes immediately back of mangroves in brackish mud. Common. Also widely cultivated as an ornamental.

**2. [*Licuala* sp. nov. L.G. Saw (ined.)]**

Distribution – Philippines (Palawan Is.) - exsiccata: *Fernando 636* (K, LBC), *Fernando 647* (K, LBC)]  
42 PHI

Conservation status – Critically Endangered (CR). Only a very small population is known from the area.

Vernacular names –

## 12. *Livistona* R Brown



c. 35 species SE Asia to Australia and Solomon Is.; 3 species and 1 ssp. in the Philippines, 1 endemic.

**Livistona merrillii** Becc. in Perkins, Frag. Fl. Philip. (1904) 45; --Merr., EPFP 1 (1922) 144. --Type: Merrill 2071 (holotype FI), Philippines, Luzon Island, Quezon Prov., Guinayangan  
*Livistona whitfordii* Becc., Webbia 1: 341 (1905). Type: *Whitford 731* (holotype FI), Philippines, Luzon Island, Quezon Prov., Atimonan  
LUZON: Cagayan, Zambales, Quezon, Camarines, POLILLO. Low altitude forests and thickets.

**Livistona robinsoniana** Becc., PJS 6 c (1911) Bot. 230, 14 (1919) 341. --Type: BS 9265 Robinson. (FI, holo; iso US\*). Polillo. Edge of forest, altitude 5m. Aug. 1909.  
LUZON: Laguna, POLILLO. Low altitude forests.  
Conservation status – Vulnerable (VU)

**Livistona rotundifolia** (Lam.) C Martius, Hist. Nat. Palm. 3: 241 (1838). Type: \**Corypha rotundifolia* Lam., Encycl. 2: 131 (1786).  
*Livistona rotundifolia* var. *luzonensis* Becc. in Elmer, LPB 8 (1919) 3025; --Merr., EPFP 1 (1922) 144.  
*Livistona rotundifolia* var. *mindorensis* Becc., PJS 14 (1919) 341; --Merr., EPFP 1 (1922) 144. --Type: FB 4108 Merritt. Mindoro.  
*Livistona rotundifolia* var. *microcarpa* Becc. in Elmer, LPB 8 (1919) 3024; --Merr., EPFP 1 (1922) 144. --Type: FB 3784 Curran. Palawan Island, Caraniugan River  
*Livistona microcarpa* Becc., Philipp. J. Sci., C 2: 231 (1907). Type: *Curran F.B. 3784* (holotype FI),  
*Livistona blancoi* Merr., Sp. Blancoana: 84 (1918).  
*Livistona rotundifolia* (Lam.) Mart var. *luzonensis* Becc., Philipp. J. Sci. 14: 339 (1919). Type: **Elmer 9293** (holotype FI; isotype US), Philippines, Luzon Island, Quezon Prov., Lucban, Mt Banahaw  
Peninsular Malaysia, Java, Philippines, Sulawesi, Lesser Sunda Isls, Moluccas.  
LUZON: La Union, Benguet, Pangasinan, Zambales, Pampanga, Laguna, Quezon, Camarines, Albay, POLILLO, MINDORO, PALAWAN, NEGROS, MINDANAO: Davao.  
Low and medium altitude forests. Sometimes cultivated as an ornamental.

Distribution – S. & C. Malesia. 42 JAW LSI mly MOL PHI SUL.

**Livistona saribus** (Lour.) Merr. ex Chev., Bull. Econ. Indochine 22 (1919) 501; --Merr., EPFP 1 (1922) 145.  
*Livistona inaequisecta* Becc., Philipp. J. Sci., C 4: 616 (1909). Type: *Curran F.B. 10079* (holotype FI), Philippines, Luzon Island, Laguna Prov., Sta. Maria, Mavitac  
SE China, Thailand, Vietnam, Peninsular Malaysia, Java, Borneo, Philippines: LUZON: Cagayan, Laguna. Open, somewhat swampy regions at low altitudes, in Cagayan gregarious.  
Distribution – SE. China to Indo-China and Philippines (Luzon). 36 CHS 41 THA VIE 42 BOR JAW MLY PHI.

### 13. **Metroxylon** Rottboell

5 species, Sumatra, Borneo to New Guinea and Pacific; 1 species in the Philippines.

**1. Metroxylon sagu** Rottb., Nye Samml. Dansk. Vidensk. Selsk. Skrift. 2 (1783) 527; --Merr., EPFP 1 (1922) 145.  
Thailand, Sumatra, Peninsular Malaysia, Borneo, Java, Philippines, Moluccas, New Guinea, Solomon Isls. NEGROS, SIKUIJOR, CEBU, BOHOL, MINDANAO: Zamboanga, Misamis, Cotabato, Davao, Agusan, Surigao, BASILAN, SULU.

#### 14. *Nypa* Steck

Monotypic, India through Malesia, N. Australia, Micronesia, and Melanesia.

**1. *Nypa fruticans*** Wurm., Verh. Batav. Genootsch. Kunsten 1: 349 (1779). Type:

*Nypa fruticans* (Wurm.) Thunb., Kongl. Vetensk. Acad. Nya Handl. 3: 231 (1782).

*Nypa litoralis* Blanco, Fl. Filip.: 662 (1837).

India, across Malesia to tropical Australia. Widely distributed in the Philippines. Along tidal streams in brackish swamps, usually forming dense impenetrable stands.

Distribution – Sri Lanka to Nansei-shoto and Caroline Is. (22) nga 36 CHH 38 NNS 40 BAN SRL 41 CBD MYA THA VIE 42 BOR JAW MLY MOL PHI SUL SUM 43 BIS NWG SOL 50 NTA QLD 62 CRL mnn (80) pan (81) trt.

#### 15. *Oncosperma* Blume

Ca. 5 species, Sri Lanka to Peninsular Malaysia, Sumatra, Borneo, Java, Sulawesi; 4 species in the Philippines, 2 endemic.

**1. *Oncosperma gracilipes*** Becc., Philipp. J. Sci., C 2: 228 (1907). Type: *Merrill 4010* (holotype FI), Philippines, Luzon Island, Quezon Prov., Atimonan  
LUZON: Laguna, Quezon, Sorsogon, BILIRAN. Low altitude forests. Locally common.

**2. *Oncosperma horridum*** (Griffith) Scheff., Tijdschr. Ned.-Indië 32: 191 (1871); --*Areca horrida* Griff., Calcutta J. Nat. Hist. 5: 465 (1845). Type:  
Peninsular Thailand, Sumatra, Peninsular Malaysia, Borneo, Philippines and Sulawesi.  
POLILLO, MINDANAO.

**3. *Oncosperma platyphyllum*** Becc., PJS 4 c (1909) Bot. 609. --Type: *Whitford 1670* (holo FI).  
Negros: Gimagaan River.  
NEGROS: Gimagaan River. Lowland forest. Rare.  
Conservation status: Endangered (EN)

**4. *Oncosperma tigillarum*** (Jack) Ridl., J. Straits Branch Roy. Asiat. Soc. 33: 173 (1864); --*Areca tigillaria* Jack, Malayan Misc. 2(7): 88 (1820). --Type:

Peninsular Thailand, Cambodia, Sumatra, Peninsular Malaysia, Java, Borneo,  
Philippines: PALAWAN.

#### 16. *Orania* Zippelius

Ca. 17 species, Madagascar, S. Thailand through Malesia to New Guinea; 3 species in the Philippines, 1 species endemic.

**1. *Orania decipiens*** Becc. Philipp. J. Sci., C 4: 614 (1909). Type: *Merritt F.B. 4120* (holotype FI), Philippines, Mindoro Island, Bongabong River  
LUZON: Cagayan, Isabela, Quezon, MINDORO, MINDANAO, BASILAN. Low and medium altitude forests.  
Conservation status – Near Threatened (NT)

**2. Orania palindan** (Blanco) Merr., Publ. Bur. Sci. Gov. Lab. 27: 88 (1905).

\**Caryota palindan* Blanco, Fl. Filip. (1837) 714. --Type:

*Orania philippinensis* Scheff. ex Becc., Ann. Jard. Bot. Buitenzorg 2: 156 (1885). Type:

LUZON: Cagayan, La Union, Benguet, Zambales, Bataan, Rizal, Laguna, Quezon, Batangas, Camarines, ROMBLON, SIBUYAN, SAMAR, MINDANAO. Low and medium altitude forests.

**3. Orania paraguensis** Becc., Webbia 1: 335 (1905). Type: *Merrill 869* (holotype FI), Philippines, Palawan Island, Separation Point Banguay; PALAWAN.

**4. Orania rubiginosa** Becc., Philipp. J. Sci. 14: 333 (1919). Type:

Distribution – Philippines. 42 PHI.

Conservation status – Near Threatened (NT)

#### What happened to these names?

*Orania decipiens* var. *mindanaensis* Becc.

*Orania decipiens* var. *montana* Becc.

*Orania palindan* var. *sibuyanensis* (Becc.) Merr.

### 17. Phoenix Linnaeus

c. 12 species, Canary Is., Africa, continental Asia to S. China, Peninsular Malaysia, Sumatra, Taiwan; 1 species in the Philippines.

**Phoenix loureiroi** Kunth, Enum. Pl. 3 (1841) 257.

*Phoenix hanceana* Naudin var. *philippinensis* Becc., PJS 3 c (1908) Bot. 339; --Merr., EPFP 1 (1922) 142.

--Type: BS 3744 Fenix (FI, holo). Batanes Island Group, Sabtan Is.

Myanmar, Thailand, Cambodia, Vietnam, SE China, Taiwan, N Philippines. BATANES ISLS (SABTAN). Low to medium altitude mountain streams. Sometimes cultivated.

### 18. Pinanga Blume

c. 120 species, throughout Malesia; c. 25 species in the Philippines, all endemic except 1 species)

#### Literature:

Fernando, ES. 1988. *The mottled-leaved species of Pinanga in the Philippines*. Principes 32: 165-174.

Fernando, ES. 1994. *New species of Pinanga (Palmae: Arecoideae) from Luzon Island, Philippines*. Kew Bulletin 49: 775-784, fig. 1-4.

**1. Pinanga basilanensis** Becc., Philipp. J. Sci. 14: 322 (1919). Type: *Reillo B.S. 16119* (holotype FI), Philippines, Basilan Island

MINDANAO: Zamboanga, BASILAN. Low and medium altitude primary forests.

Conservation status – Near Threatened (NT)

**2. Pinanga batanensis** Becc., PJS 3 c (1909) Bot. 340. --Type: BS 3841 Fenix (FI, holo; iso NY, US). Batan: Santo Domingo de Basco, along mountain stream, June 1907.

BATAN (Mt Iraya). Lowland forest.

Conservation status: Critically Endangered (CR)

**3. *Pinanga bicolorana*** Fernando, Principes 32 (1988) 172, Fig. 5; 7A-H. --Type: Fernando 498 (K, holo; iso LBC). Luzon: Camarines Norte prov., Bicol National Park.

LUZON: Camarines Norte and Sur provincial borders (Bicol National Park). Dipterocarp forest, 100-200m. Only known from the type locality.

Conservation status: Critically Endangered (CR)

**4. *Pinanga copelandii*** Becc., Webbia 1 (1905) 320; --Merr., EPFP 1 (1922) 165; --Fernando, Principes 32 (1988) 170. --Type: Copeland 1283 (FI\*, holo). Mindanao: Davao, Mt Apo, Todaya.

LUZON: Camarines, Sorsogon (Irosin, Mt Bulusan and Bulusan Lake), PANAY, NEGROS, BOHOL, LEYTE (Baybay, Mt Pangasugan), BASILAN (Maligui), MINDANAO: Zamboanga del Norte (Malayal), Zamboanga del Sur, Davao (Mt Apo), Agusan del Norte (Cabadbaran, Mt Urdaneta; Butuan; Agusan River), Agusan del Sur (Trento). In humid forests, alt. 100-1250m.

Conservation status – Near Threatened (NT)

**5. *Pinanga curranii*** Becc., PJS 2 c (1907) Bot. 226; --Merr., EPFP 1 (1922) 165; --Fernando, Principes 32 (1988) 165. --Type: FB 3515 Curran (FI, holo). Palawan: Puerto Princesa.

*Pinanga maculata* Becc. in Perkins, Fragm. Fl. Philipp. 1 (1904) 48, *non* Porte ex Lem.; --Merr., EPFP 1 (1922) 166.

PALAWAN: (St Paul's Bay, Kabayugan; Puerto Princesa; Bagumbayan; Iwahig River, Tagkaurim), DUMARAN, BUSUANGA. Primary forests, c. 10-500m.

Conservation status – Near Threatened (NT)

**6. *Pinanga egregia*** Fernando, Kew Bull. 49 (1994) 775, Fig. 1<sup>a</sup>-G. --Type: Fernando 549 (LBC, holo; iso BH, K, PNH). Luzon: Sierra Madre Mtns, Quezon prov., Real, Sitio Balete.

LUZON: Quezon (Real), POLILLO. Dipterocarp forest, c. 500m.

Conservation status – Near Threatened (NT)

**8. *Pinanga geonomiformis*** Becc., Philipp. J. Sci., C 4: 602 (1909). Type: *Curran F.B. 10155* (holotype FI), Philippines, Luzon Island, Quezon Prov.

LUZON: Aurora, Quezon, Rizal, POLILLO, MINDORO

Conservation status – Near Threatened (NT)

**9. *Pinanga glaucifolia*** Fernando, Kew Bull. 49 (1994) 776, Fig. 2A-Q. --Type: Fernando 558 (LBC, holo; iso BH, K, PNH). Luzon: Camarines Norte prov., Bicol National Park.

LUZON: Camarines Norte (Mt Labo; Bicol National Park). Lowland dipterocarp forest, c. 100-200m.

Conservation status – Endangered (EN)

**10. *Pinanga heterophylla*** Becc., Philipp. J. Sci. 14: 319 (1919). Type: *Curran F.B. 17346* (holotype FI), Philippines, Negros Island, Mt Maripari

LUZON: Sorsogon, RAPU-RAPU, NEGROS. Forests, c. 100-700m.

Conservation status – Near Threatened (NT)

**11. *Pinanga insignis*** Becc., Philipp. J. Sci., C 2: 223 (1907). Type: *Whitford 1388* (FI, holo; iso: US). Mindoro: Mindoro Oriental prov., Bongabong River

*Pseudopinanga insignis* (Becc.) Burret, Notizbl. Bot. Gart. Berlin-Dahlem 13: 194 (1936).

*Pinanga insignis* Becc. subsp. *loheriana* Becc., Philipp. J. Sci. 14: 322 (1919). **Type:**

**ssp. insignis**

**var. insignis**

Caroline Islands, Philippines, Sulawesi. LUZON: Apayao, Isabela, Nueva Vizcaya, Pangasinan, Rizal, Laguna, Quezon, Camarines, Sorsogon, MINDORO, LEYTE, MINDANAO: Zamboanga, Bukidnon, Agusan, Surigao. Low and medium altitude primary forests. Common.

**var. gasterocarpa** Becc.  
MASBATE, NEGROS

**var. leptocarpa** Becc.  
NEGROS

**12. Pinanga isabelensis** Becc., Philipp. J. Sci. 14: 318 (1919). Type: *McGregor B.S. 10660* (FI, holo). Philippines, Luzon Island, Isabela Prov., Bicobian Bay  
LUZON: Isabela. Forests near the sea, most likely on ultramafics which is prevalent in the area.  
Conservation status – Near Threatened (NT)

**13. Pinanga maculata** Porté ex Lem., Illus. Hort. 10 (1863) pl. 361; PJS 2 c (1907) Bot. 226; -- Fernando, Principes 32 (1988) 166. --Type: Plate 361 in Lem., loc. cit.  
*Pseudopinanga maculata* (Porte ex Lem.) Burret, Notizb. Bot. Gard. Mus. Berlin-Dahlem 13 (1936) 194, excluding *P. copelandii* Becc. and all specimens cited; --Salvosa, Lexicon Philipp. Trees (1963) 120.  
*Pseudopinanga barnesii* (Becc.) Burret, Notizb. Bot. Gard. Mus. Berlin-Dahlem 13 (1936) 193; --Salvosa, Lexicon Philipp. Trees (1963) 120; --*Pinanga barnesii* Becc., Webbia 1 (1905) 320; --Merr., EPFP 1 (1922) 164. --Type: FB 122 Barnes (FI, holo; Iso K). Luzon: Bataan prov., Lamao River.  
*Pinanga barnesii* Becc. var. *macrocarpa* Becc., Philipp. J. Sci., C 3: 340 (1908). Type: *McGregor 275* (holotype FI; isotype K, US), Philippines, Mindoro Island, Balete, Baco River  
BABUYAN, LUZON: Ifugao (Damag; Botwag), Benguet (Baguio; Mt Sto Tomas), La Union, Cagayan, Isabela (Palanan), Aurora, Zambales (Pinagtubo), Bataan (Lamao), Pampanga, Rizal (Mt Tokduanbanoy; Montalban; Tanay), Laguna, Quezon (General Nakar, Sablang; Infanta; Mt Banahaw; Mt Banahaw de Lucban; Tayabas; Atimonan, Quezon National Park), POLILLO, CATANDUANES, MINDORO: Mindoro Oriental (Baco River; Pinamalayan). In humid primary forests, chiefly at 300-800m, ascending to 1600m. Common.  
Conservation status – Near Threatened (NT)

**14. Pinanga modesta** Becc., Philipp. J. Sci., C 2: 225 (1907). --Type: *Copeland s.n.* (holotype FI), Philippines, Mindanao Island, Zamboanga, San Ramon  
BUCAS GRANDE, MINDANAO: Zamboanga, Lanao, Bukidnon, Davao, Agusan, Surigao del Sur, BASILAN. Primary forests at low and medium altitudes, ascending to 1200m.

**15. Pinanga negrosensis** Becc., Leaf. Philipp. Bot. 2: 642 (1909). Type: *Elmer 10030* (holotype FI; isotypes K, NY, US), Philippines, Negros Island, Dumaguete, Cuernos Mountains  
NEGROS, ?DINAGAT.

**16. Pinanga philippinensis** Becc., Malesia 3: 180 (1889). Type: Pinanga elmeri Becc. in Martelli, Webbia 1 (1905) 322. --Type: Elmer 6067 (NY\*, US\*, iso). Luzon: Benguet prov., Baguio, Mar. 1904.  
As *P. elmeri*: BABUYAN ISLS, LUZON: Ilocos Norte, Benguet, Ifugao, Nueva Vizcaya, Zambales, Bataan, Rizal, Laguna, Quezon, MINDORO, NEGROS, LEYTE, MINDANAO. Forests, c. 700-1800. Common.

**17. *Pinanga rigida*** Becc., Leafl. Philipp. Bot. 2: 644 (1909). Type: *Elmer 10187* (holotype FI; isotypes BM, K, NY, US), Philippines, Negros Island, Dumaguete, Cuernos Mountains, 2000 m alt.  
NEGROS

**18. *Pinanga samarana*** Becc., PJS 14 (1919) 321. --Type: Ramos BS 17535 (FI, holo; iso BM, K, US). Samar: Mt Cauayan.  
SAMAR: Mt Cauayan. Known only from the type collection.

Conservation status – Critically Endangered (CR)

**19. *Pinanga sclerophylla*** Becc., PJS 4 c (1909) Bot. 603. --Type: Merritt FB 4468 (FI, holo). Mindoro: Mindoro Oriental prov., Mt Halcon, altitude 1500m.  
MINDORO: Mindoro Oriental (Mt Halcon). Primary forests, c. 1500m. Rare.

Conservation status – Critically Endangered (CR)

**20. *Pinanga sibuyanensis*** Becc., PJS 14 (1919) 324. --Type: Elmer 12425 (FI, holo; iso BISH, BM, K, NY, US). Sibuyan: Magallanes (=Magdiwang), Mt Giting-giting.  
SIBUYAN (Mt Giting-giting). Forests along streams, altitude 200-600m.  
Conservation status: Critically Endangered (CR)

**21. *Pinanga sierramadreana*** Fernando, Kew Bull. 49 (1994) 780, Fig. 3A-J. --Type: Fernando 521 (LBC, holo; iso K). Luzon: Quezon prov., General Nakar, Sitio Sablang.  
LUZON: Nueva Vizcaya (Caraballo Mtns), Quezon (General Nakar: Sitio Sablang and Kabanbanan). A sheet at PNH (Gutierrez 61-289) from Isabela prov. (Palanan) probably also belongs here.

**22. *Pinanga sobolifera*** Fernando, Kew Bull. 49 (1994) 782, Fig. 4A-L. --Type: Fernando 518 (LBC, holo; iso K, PNH). Luzon: Quezon prov., General Nakar, Sitio Sablang.  
LUZON: Quezon (General Nakar). Lowland dipterocarp forest, c. 800m. Known only from two collections.  
Conservation status: Endangered (EN).

**23. *Pinanga speciosa*** Becc., Webbia 1: 316 (1905). Type: *Copeland 1265* (holotype FI), Philippines, Mindanao Island, Davao Prov., Todaya, Mt Apo  
BASILAN, MINDANAO: Zamboanga, Lanao, Bukidnon, Davao, Agusan del Norte, Agusan del Sur, Surigao del Sur. Primary forests, 400-1200m.

**24. *Pinanga urdanetensis*** Becc., Leafl. Philipp. Bot. 8: 3008 (1919). Type: *Elmer 14137* (holotype FI; isotypes BISH, BM, K, US), Philippines, Mindanao Island, Agusan Province, Mt Undaneta, Camilanan Peak  
MINDANAO: Bukidnon, Agusan del Norte (Mt Urdaneta), Surigao del Sur. Forested slopes, c. 1400m. Rare.

**25. *Pinanga urosperma*** Becc., Philipp. J. Sci., C 3: 341 (1909). Type: *Fenix 4044* (holotype FI; isotype US), Philippines, Babuyan Islands, Camiguin  
*Pseudopinanga urosperma* (Becc.) Burret, Notizbl. Bot. Gart. Berlin-Dahlem 13: 194 (1936).  
CAMIGUIN DE BABUYANES, LUZON: Apayao, Cagayan, Isabela, Aurora.

**26. *Pinanga woodiana*** Becc., Philipp. J. Sci., C 4: 604 (1909). Type: *Merrill 5680* (holotype FI), Philippines, Mindoro Island, Mt Halcon, 1100 m alt.  
LUZON: Mountain Province, MINDORO, MINDANAO: Davao. Primary forests, 1050-

1350m. Rare.

### 19. *Plectocomia* C Martius ex Blume

Ca. 16 species, India to S. China, Peninsular Malaysia, Sumatra, Borneo; 1 species and 1 variety in the Philippines, both endemic.

**1. *Plectocomia elmeri*** Becc., Ann. Roy. Bot. Gard. (Calcutta) 12 (1918) 34; --Becc. in Elmer, LPB 8 (1919) 3029; PJS 14 (1919) 342; --Merr., EPFP 1 (1922) 146. --Type: Elmer 11887. Mindanao: Davao, Mt. Apo, Todaya, altitude 1000m.

MINDANAO: Davao (Mt Apo). In dense woods, altitude 900m. Known only from the type collection. Rare.

Conservation status: Critically Endangered (CR)

Vernacular names – ungang

**2. *Plectocomia elongata*** C Martius ex Blume, in J.J.Roemer & J.A.Schultes, Syst. Veg. 7: 1333 (1830).

**var. *philippinensis*** Madulid, Kalikasan Philippine Journal of Biology 10: 52 (1981). Type: *Dransfield 5491* (holotype K; isotypes LBC, PNH), Philippines, Palawan Island, Bagumbayan, near Puerto Princesa.

PALAWAN, BILIRAN, LEYTE, MINDANAO: Agusan del Sur, Surigao del Sur.

**Ptychoraphis**, as to Philippine spp. =Heterospathe

### 20. *Salacca* Reinwardt

Ca. 18 species, S. China, Myanmar, Thailand, Peninsular Malaysia, Sumatra, Java, Borneo; 2 species in the Philippines.

**1. *Salacca clemensiana*** Becc., PJS 4 c (1909) Bot. 618, 14 (1919) 342; --Merr., EPFP 1 (1922) 146. --Type: Clemens 1109 (FI, holo). Mindanao: Lanao del Sur prov., Lake Lanao

N Borneo and the S Philippines: MINDANAO: Zamboanga del Norte (La Paz, Camp Susana; Siocon, Laclacan), Misamis Occidental (Mt Malindang), Misamis Oriental, Lanao del Sur, Davao. Mostly in thickets near streams and ravines, altitude 600-900m.

Conservation status: Endangered (EN)

Vernacular names – dalubi, kaubi, lakaubi, lubo.

**2. *Salacca ramosiana*** Mogeia, Principes 30 (1986) 161. --Type: *Elmer 20110* (iso NY, SING). Borneo, Sabah, Sandakan

Borneo (Sabah) and the Philippines: PALAWAN, TAWI-TAWI.

*Veitchia non* H Wendle (as to Philippine species) =Adonidia

Zalacca Blume = Salacca

Cultivated:

*Actinophloeus macarthurii*

**Actinorhytis** H. Wendle & Drude

**Actinorhytis calapparia** (Blume) R Scheff.

Widespread in Malesia but probably not native to the Philippines. MINDANAO: Davao. Isolated trees in agricultural lands mostly planted with coconut and betel nut, c. 500m altitude.

**Coelococcus** H Wendland

**Coelococcus amicarum** (Wendl.) WF Wright, Contr. US Nat. Herb. 9 (1905) 244, t. 45, 46. Introduced from the Caroline Isls. PANAY, MINDANAO: Zamboanga. Rarely planted.

*Cyrtostachys lakka*

**Dypsis** Noronha ex Martius

*Dypsis cabadae* (HE Moore) Beentje & J Dransf.

*Dypsis decaryi* (Jum.) Beentje & J Dransf.

*Dypsis leptocheilos* (Hodel) Beentje & J Dransf

*Dypsis lutescens* (H.Wendl.) Beentje & J Dransf.

*Dypsis madagascariensis* Beentje & J Dransf.

**Elaeis guineensis** Jacq.

Native of Africa.

*Phoenix roebleinii*