

Family 53. PIPERACEAE

Philippine revision:

Quisumbing, E. 1930. *Philippine Piperaceae*. Philippine Journal of Science 43: 1-246 + 24 pl.

Peperomia Ruiz & Pavon

Peperomia agusanensis C DC in Elmer, LPB 6 (1914) 2294; --Merr., EPFP 2 (1923) 18; --Quisumb., PJS 43 (1930) 210; Text fig. 112. --Type: Elmer 13635 (PNH, holo, possibly lost; iso BISH*, L*, MICH*, NY*, US*). Mindanao: Agusan del Norte prov., Mt Urdaneta (=Hilong-hilong), Aug 1912.

MINDANAO: Bukidnon, Agusan del Norte. Mossy forests, altitude c. 1800m.

Peperomia canlaonensis C DC, Prodr. 5 (1910) Bot. 408; --Merr., EPFP 2 (1923) 18; --Quisumb., PJS 43 (1930) 200; Text fig. 106. --Type: Merrill Philip. Pl. 251 (PNH, possibly lost; iso US*). Negros: Negros Occidental prov., Mt Kanlaon, Apr 1910.

NEGROS: Negros Occidental (Mt Kanlaon). Epiphytic in the mossy forests, altitude c. 1800m.

Peperomia copelandii Quisumb., PJS 43 (1930) 201; Text fig. 107. --Type: Copeland 178 (PNH, cited by Quisumbing, 1930, not seen). Luzon: Benguet prov., Pauai, May 1913.

LUZON: Benguet (Pauai), altitude c. 2400m.

Peperomia elmeri C DC in Elmer, LPB 3 (1910) 761; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 216; Text fig 116. --Type: Elmer 10493 (PNH, holo, possibly lost; iso BISH*, L*, NY*, US*). Mindanao: Davao, Mt Apo, Todaya, 'hanging from the under side of a thick inclined humus-covered forest trunk in moist forests at 4000ft', May 1909.

MINDANAO: Davao (Mt Apo). Lower montane forest, altitude c. 1200m, on tree trunks.

Peperomia exigua (Blume) Miq., Syst. Pip. (1843) 101; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 219; Text fig. 118; --Piper exiguum Blume, Verh. Bat. Genoots. 11 (1826) 232, Fig. 36. --Type from Java.

India, Malesia, tropical America. MINDANAO: Davao (Mt Apo, Todaya). Dense woods along Baracatan Creek, altitude 500m, creeping and forming dense patches on wet ledges and cliffs.

Peperomia laevifolia (Blume) Miq., Syst. Pip. (1843) 101; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 207; Text fig. 110; --Piper laevifolium Blume, Cat. Gew. Buitenz. (1823) 33. --Type from Java.

Peperomia apoana C DC, PJS 5 c (1910) Bot. 411; --Merr., EPFP 2 (1923) 18. --Type: Copeland 1002 (PNH, cited by Quisumbing, 1930, holo, possibly lost). Mindanao: Davao, Mt Apo.

PANAY: Antique (near Culasi), NEGROS: Negros Oriental (Cuernos Mtns), MINDANAO: Zamboanga (Sax River mtns), Bukidnon (Mt Lipa), Davao (Mt Apo). Montane forests to 2200m.

Peperomia lagunaensis C DC, PJS 5 c (1910) Bot. 407; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 206; Text fig. 109. --Type: Merrill 5130 (PNH, holo, cited by Quisumbing, 1930, possibly lost; iso NY*, US*). Luzon: Laguna prov., Mt Makiling, 17 Mar 1906.

Peperomia puberulifolia C DC, PJS 5 c (1910) Bot. 407; --Merr., EPFP 2 (1923) 19. --Type: BS 6047 Foxworthy (PNH, holo, cited by Quisumbing, 1930, possibly lost). Luzon: Laguna prov., Mt Banahaw.

LUZON: Bataan (Mt Mariveles), Laguna (Mt Makiling; Mt Banahaw). Montane forests to

1700m, on mossy ground, boulders and tree trunks.

Peperomia lanaoensis C DC, PJS 5 c (1910) Bot. 410; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 226; Text fig. 123. --Type: Clemens 625 (PNH, holo, cited by Quisumbing, 1930, possibly lost). Mindanao: Lanao del Norte prov., Maria Cristina Falls.

LUZON: Rizal (Mt Irid), SAMAR: Western Samar (Loquilocon), MINDANAO: Zamboanga, Lanao del Norte, Bukidnon (Tangkulan). Low and medium altitudes, lithophytic on boulders, ledges of ravines and along streams.

Peperomia latibracteata Quisumb., PJS 43 (1930) 224; Text fig. 121; Plate 18. --Type: BS 20126 RC McGregor (PNH, holo, cited by Quisumbing 1930, possibly lost). Luzon: Nueva Vizcaya prov., Campote, 15 Jan 1913.

LUZON: Ifugao (Mt Polis), Nueva Vizcaya (Campote). Altitude above 1900m in Ifugao.

Peperomia marivelesana C DC in Elmer, LPB 3 (1910) 762; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 220; Text fig. 119. --Type: Merrill 3721 (PNH, holo, cited by Quisumbing, 1030, possibly lost). Luzon: Bataan prov., Mt Mariveles. --Syntype: Elmer 6820 (NY*). Luzon: Bataan prov., Mt Mariveles, Nov 1904.

LUZON: Ilocos Norte (Mt Nagapatan), Nueva Vizcaya (Caraballo Mtns), Bataan (Mt Mariveles), Laguna (Mt Makiling), MINDORO: Mindoro Oriental (Mt Halcon), PALAWAN (Mt Victoria). Mossy rocks and tree trunks, altitude 450-1200m.

Peperomia merrillii C DC, PJS 5 c (1910) Bot. 411; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 212; Text fig. 113. --Type: Merrill 4180 (PNH, holo, cited by Quisumbing, 1930, possibly lost; iso NY*, US*). Luzon: Cavite prov., Maragondon, Jul 1905.

LUZON: Rizal (Montalban; Mt Canumay; Mt Susong Dalaga; San Andales (=possibly San Andres), Cavite (Maragondon), Laguna (Mt Makiling), Sorsogon (Mt Bulusan). Lithophytic at medium altitudes to 500m.

Peperomia mindorensis C DC, PJS 5 c (1910) Bot. 413; --Merr., EPFP 2 (1923) 19; --Quisumb., PJS 43 (1930) 215; Text fig. 115. --Type: Merrill 6107 (PNH, holo, cited by Quisumbing, 1930, possibly lost). Mindoro: Mindoro Oriental prov., Mt Halcon. On mossy trees, altitude c. 1500m.

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

Peperomia negrosensis C DC in Elmer, LPB 3 (1910) 760; --Merr., EPFP 2 (1923) 20; --Quisumb., PJS 43 (1930) 213; Text fig. 114. --Type: Elmer 9425 (PNH, holo, cited by Quisumbing, 1930, possibly lost; iso BISH*, L*, NY*, US*). Negros: Negros Oriental prov., Cuernos Mtns, 'tufted or climbing upon moss-covered rocks in well-shaded ravines', Mar 1908.

NEGROS: Negros Oriental (Cuernos Mtns). Mossy rocks in shaded ravines.

Peperomia pallidibacca C DC in Elmer, LPB 3 (1910) 763; --Merr., EPFP 2 (1923) 20; --Quisumb., PJS 43 (1930) 199; Text fig. 105. --Type: Elmer 9344 (PNH, holo, cited by Quisumbing, 1930, possibly lost; iso L*, NY*, US*). Luzon: Benguet prov., Baguio, Mar 1907.

Peperomia ramosii C DC, *Candollea* 1 (1923) 315, *nom. nud.*; *idem.* 2 (1925) 188. --Type: BS 12113 Ramos (PNH, holo, cited by Quisumbing, 1930, possibly lost; iso L*). Luzon: Rizal prov., Tanay, San Isidro, Jun 1910.

LUZON: Mountain Province (Pinggat), Benguet (Mt Tonglon =Mt Sto Tomas; Baguio), Rizal (Montalban, Mt Lumutan; San Isidro). In the mossy forests, up to altitude 2200m.

Peperomia pellucidopunctulata C DC in Elmer, LPB 3 (1910) 760; --Merr., EPFP 2 (1923) 20; --Quisumb., PJS 43 (1930) 209; Text fig. 111. --Type: Elmer 8436 (PNH, holo, cited by Quisumbing,

1930, possibly lost). Luzon: Benguet prov., Baguio.

LUZON: Benguet (Baguio), Albay (Mt Mayon). On rocks and tree trunks at medium and high altitudes.

Peperomia recurvata (Blume) Miq., Syst. Pip. (1843) 141.

forma longispica C DC, PJS 5 c (1910) Bot. 409; --Merr., EPFP 2 (1923) 20; --Quisumb., PJS 43 (1930) 205; Text fig. 108: 7-8. --Type: Merrill 4425 (PNH, holo, cited by Quisumbing, 1930; iso US*). Luzon: Benguet prov., Kabayan, Oct-Nov 1905.

Peperomia vanoverberghii C DC, Candollea 1 (1923) 321, *nom. nud.*, idem. 2 (1925) 188. --Type: Vanoverbergh 603bis (G-DC, holo, cited by Quisumbing, 1930). Luzon: Mountain Province, without definite locality.

LUZON: Mountain Province (Bauko), Benguet (Kabayan; Pauai; Baguio). Lithophyte on wet rocky banks or epiphytic on trees at high altitudes.

forma pilosior C DC, PJS 5 c (1910) Bot. 409; --Merr., EPFP 2 (1923) 20; --Quisumb., PJS 43 (1930) 203, Text fig. 108, 1-6. --Type: Elmer 6622 (PNH, holo, cited by Quisumbing, 1930, possibly lost). Luzon: Benguet prov., Baguio, on mossy cliff, Jun 1904.

LUZON: Ifugao, Mountain Province, Benguet. Mossy slopes, boulders, etc. at altitudes above 1400m.

Peperomia reflexa (L.f.) A. Dietr., Sp. Pl. 1 (1831) 180; --Merr., EPFP 2 (1923) 20.

var. capensis (Miq.) C DC, Prodr. 16, 1 (1869) 451; --Quisumb., PJS 43 (1930) 196; Text fig. 104: 1-6; --*Peperomia reflexa* (L.f.) A. Dietr. *forma capensis* Miq., Syst. Pip. (1843) 169; --Merr., EPFP 2 (1923) 20

Peperomia reflexa (L.f.) A. Dietr. *forma subsessilifolia* C DC, Prodr. 16 (1869) 452; --Merr., EPFP 2 (1923) 20. --Type: Elmer 8576 (BISH*, iso). Luzon: Benguet prov., Baguio, Mar 1907.

Peperomia reflexa (L.f.) A. Dietr. *var. calcicola* C DC, --PJS 5 c (1910) Bot. 410; --Merr., EPFP 2 (1923) 20. --Type: Elmer 6077 (PNH, holo, cited by Quisumbing, 1930, possibly lost; iso US*). Luzon: Benguet prov., Baguio, Apr 1904.

Pantropical. LUZON: Mountain Province (Mt Data), Benguet (Pauai; Mt Pulag; Mt Lusong; Mt Sto Tomas; Baguio), MINDANAO: Bukidnon (Mt Candoon), Davao (Mt Apo).

var. parvilimba C DC, --Quisumb., PJS 43 (1930) 198; Text fig. 104: 7. --Type: Merrill 3918 (PNH, holo, cited by Quisumbing, 1930, possibly lost). Luzon: Pampanga prov., Mt Arayat, on rocks near the summit, altitude c. 1000m.

LUZON: Pampanga (Mt Arayat).

Peperomia rivulorum C DC in Elmer, LPB 3 (1910) 762; --Merr., EPFP 2 (1923) 21; --Quisumb., PJS 43 (1930) 228; Text fig. 124. --Type: Elmer 11147 (PNH, holo, cited by Quisumbing, 1930, possibly lost; iso BISH*, NY*, US*). Mindanao: Davao, Mt Apo, Todaya, 'creeping and forming patches in thin earth of large, more or less moss-covered boulders lying in streamlets of dense woods near the Sibulan River, altitude 1750ft', Jul 1909.

MINDANAO: Davao (Mt Apo, Todaya; Catalonan). On mossy boulders.

Peperomia rubrivenosa C DC, PJS 5 c (1910) Bot. 409; --Merr., EPFP 2 (1923) 21; --Quisumb., PJS 43 (1930) 225; Text fig. 122. --Type: RS Williams 1083 (PNH, holo, cited by Quisumbing, 1930, possibly lost). Luzon: Benguet prov., Baguio.

Peperomia macgregorii C DC, PJS 5 c (1910) Bot. 412; --Merr., EPFP 2 (1923) 19. --Type:

LUZON: Benguet. On trees. Mossy forest, altitude 2100m.

Peperomia tomentosa (Vahl) A. Dietr., Sp. Pl. 1 (1831) 172.

var. carnosa C DC, Prodr. 16¹ (1869) 455; --Merr., EPFP 2 (1923) 21; --Quisumb., PJS 43 (1930) 222; Text fig. 120

Java,

Check status:

Peperomia ventenatii Miq. *var. pubescens* Miq., Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 1: 485.

Non-native:

Peperomia argyreia Morren

An exotic species of American origin, cultivated for its variegated leaves.

Peperomia pellucida (L.) Humb., Bonpl. & Kunth, Nov. Gen. Sp. Pl. 1 (1815) 64; --Merr., Fl. Manila (1912) 170; EP

2. Piper Linnaeus

Philippine revision:

Gardner, RO. 2007. *Piper (Piperaceae) in the Philippine Islands: the climbing species*. Blumea 51: 569-586.

Piper abbreviatum Opiz, in CB Presl, Rel. Haenk. 1 (1828) 157; --Merr., EPFP 2 (1923) 2; --Quisumb., PJS 43 (1930) 58; Text fig. 24 & 25; plate 17, Fig. 9; --Gardner, Blumea 51 (2007) 579, Fig. 1a. --Type: Haenke *sn* (PR, holo). Luzon: no definite locality.

Chavica populifolia Miq., Syst. Pip. (1843) 248, *non* Piper populifolium Opiz. --Type: Cuming 834 (K, holo, cited by Quisumbing, 1930). Luzon: Sorsogon prov., no definite locality.

Piper mearnsii C DC, PJS 5 c (1910) Bot. 447; --Merr., EPFP 2 (1923) 12. --Type: BS 2987 Mearns (PNH, holo, not seen;). Luzon: Aurora prov., Casiguran.

Piper miquelianum Fern.-Villar, Nov. App. (1880) 176; --Merr., EPFP 2 (1923) 17.

Piper parvispicum C DC, in Perkins, Fragm. Fl. Philip. (1905) 156. --Type: Warburg 14750 (B, holo, cited by Quisumbing, 1930). Mindanao: Davao del Sur prov., Mt Dagatpan.

Piper rhombophyllum C.DC, Prod. 16 (1869) 352; --Merr., EPFP 2 (1923) 14.

Piper rubripunctulatum C DC in Perkins, Fragm. Fl. Philip. (1905) 158. --Type: Warburg 14746 (B, holo, cited by Quisumbing, 1930). Mindanao: Davao del Sur prov., Sta Cruz.

Philippines to Solomon Isls and Australia.

LUZON: Cagayan (Enrile; Peñablanca), Aurora (Casiguran), Laguna (San Antonio; Calauan; Mt Makiling), Quezon (Mt Binuang; Kabibihan), Camarines Norte (Paracale), Camarines Sur (Sagnay; Mt Isarog), Albay, Sorsogon (Mt Bulusan), POLILLO,

Piper agusanense C DC in Elmer, LPB 6 (1914) 2291; --Merr., EPFP 2 (1923) 2; --Quisumb., PJS 43 (1930) 50; Text fig. 19. --Type: Elmer 13319 (BISH*, NY*, US*, iso). Mindanao: Agusan del Norte prov., Mt Urdaneta [=Mt Hilong-hilong], Cabadbaran.

LUZON: Laguna (Mt Makiling), CAMIGUIN, MINDANAO: Agusan del Norte (Mt Hilong-hilong), Surigao del Norte (Placer). In forest.

Piper angustipeltatum Merr., PJS 17 (1920) 244; EPFP 1 (1922) 3; --Quisumb., PJS 43 (1930) 98; Text Fig. 49. --Type: BS 28846 Ramos & Edaño (PNH, holo, possibly lost; iso US*). Luzon: Quezon prov., Mt Binuang, damp forests along rivers, 19 May 1917.

LUZON: Quezon (Mt Binuang). Low and medium altitude forests along rivers.

Piper aristolochiophyllum Quisumb., PJS 43 (1930) 54; Text fig. 21; plate 6. --Type: BS 45695 Ramos & Edaño (PNH, holo, possibly lost; iso: NY*). Luzon: Aurora prov., Mt Alzapan, on forested slopes, altitude c. 1500m, 6 Jun 1925.

LUZON: Aurora (Mt Alzapan).

Piper asterostigmum Quisumb., PJS 43 (1930) 91; Text fig. 44, plate 8. --Type: CA Wenzel 3121 (UC*, holo; iso: NY*). Mindanao: Surigao del Norte prov., Placer, in forests, altitude c. 150m, 5

Sept

1927.

MINDANAO: Surigao del Norte (Placer). Lowland forest.

Piper aurilimum C DC in Elmer, LPB 3 (1910) 768; --Merr., EPFP 1 (1922) 3; --Quisumb., PJS 43 (1930) 55; Text fig. 22. --Type: Elmer 8866 (MO*, NY*, US*, iso). Luzon: Benguet prov., Baguio,

Mar 1907.

La Union (Disdis), Kalinga (Mt Masingit), Ifugao (Mt Polis), Benguet (Baguio), Rizal (without definite locality for Loher 14910). Medium altitude forests.

Piper baccatum Blume, Verh. Bat. Genoots. 11 (1826) 172, t. 3; --Merr., EPFP 1 (1922) 4; --Quisumb., PJS 43 (1930) 173; Text fig. 96; Plate 17, Fig. 3; --Gardner, Blumea 51 (2007) 579, Fig. 1b. --Type from Java.

Piper sarcopodium C DC, PJS 11 c (1916) Bot. 207; --Merr., EPFP 2 (1923) 4; --Quisumb., PJS 43 (1930) 175; Text fig. 97; Plate 17, Fig. 4. --Type: BS 16536 Ramos (K*, NY*, US*, iso). Luzon: Laguna prov., San Antonio, forests near streams, Sept-Oct 1912.

Borneo, Java, Philippines.

LUZON: Laguna (Mt Makiling; San Antonio), Sorsogon (Mt Bulusan, Irosin),

MINDANAO: Lanao del Sur (Camp Keithley), Agusan del Norte (Mt Hilong-hilong). Low and medium altitude forests.

Piper baguionum C DC in Elmer, LPB 3 (1910) 775; --Merr., EPFP 1 (1922) 4; --Quisumb., PJS 43 (1930) 96; Text fig. 48, plate 17, Fig. 10. --Type: Elmer 8784 (BISH*, MO*, NY*, US*, iso). Luzon: Benguet prov., Baguio, Mar 1907.

Piper polycladum C DC, PJS 5 c (1910) Bot. 438; --Merr., EPFP 2 (1923) 14. --Type: RS Williams 1134 (PNH, holo, possibly lost, iso: NY 2 sheets*, US*). Luzon: Benguet prov., Baguio, 15 Jun 1904.

LUZON: Benguet (Baguio). Montane forests and thickets, altitude 1200-1500m.

Piper begoniaefolium (Blume) Quisumb., PJS 43 (1930) 189; Text fig. 103; --Zippelia begoniaefolia Blume in Roem. & Schultes, Syst. Veg. 7 (1830) 1614, 1615; --Merr., EPFP 2 (1923) 18; --Gardner, Blumea 51 (2007) 584. --Type from Java.

Indochina, Sumatra, Peninsular Malaysia, Java, Borneo, SW Philippines.

JOLO (*Clemens 9335*). Damp forest, altitude c. 700m.

Piper betle L., Sp. Pl. (1753) 28; --Merr., Fl. Manila (1912) 170; EPFP 1 (1922) 3; --Quisumb., PJS 43 (1930) 85; Text figs. 41 & 42; plate 17, Fig. 8; --Gardner, Blumea 51 (2007) 579, Fig. 1c. --Type: Piper anisodorum Blanco, Fl. Filip. ed. 2 (1845) 16; ed. 3, 1 (1877) 31; --Piper anisum-olens Blanco, Fl. Filip. (1837) 23. --Type: non extant. "Illustrative specimen": Merrill Sp. Blancoanae 788 (US*). Luzon: Rizal prov., Antipolo, Jan 1915.

Piper bathycarpum C DC in Perkins, Fragm. Fl. Philip. (1905) 153; EPFP 2 (1923) 4 ('bathycarpum'). --Type: Warburg 14844. Jolo.

Piper puberulinodum C DC in Elmer, LPB 3 (1910) 773; --Merr., EPFP 2 (1923) 14. --Type: Elmer 11972 (BISH*, MO*, US*). Mindanao: Davao del Sur prov., Mt Apo, Todaya, Oct 1909.

Piper carnistylum C DC in Elmer, LPB 3 (1910) 774; --Merr., EPFP 2 (1923) 6. --Type: Elmer 8904. Luzon: Quezon prov., Lucban.

Piper betle var. fenixii (C DC) Quisumb., PJS 43 (1930) 89; --Piper fenixii C DC, PJS 5 c (1910) Bot. 425; --Merr., EPFP 2 (1923) 8. --Type: BS 3652 E Fenix (US*, iso). Batanes Isls, May-Jun 1907.

Piper betle var. macgregorii (C DC) Quisumb., PJS 43 (1930) 89; --Piper macgregorii C DC, PJS 11 c (1916) Bot. 215; --Merr., EPFP 2 (1923) 11. --Type: BS 18491 RC McGregor. Biliran: Biliran prov., in forest, c. 300m.

Piper betle var. densum (Blume) C DC, Prod. 16 (1869) 360.

Piper malarayatensis C DC, PJS 5 c (1910) Bot. 442; --Merr., EPFP 2 (1923) 11. --Type:

Piper philippinense C DC, Prodr. 16, 1 (1869) 353; --Fern.-Villar, Novis. App. (1880) 175; --Vidal, Phan. Cuming. Philip. (1885) 138; Rev. Pl. Vasc. Filip. (1886) 219. --Type: Cuming 485. Luzon: Laguna prov., Calauan.

Widely cultivated in Asia and through Malesia to the Solomon Isls and Fiji.

BATAN: Basco, LUZON: Ilocos Norte (Burgos), Ilocos Sur (Cervantes), Pangasinan (San Quintin), Isabel (Malunu), Nueva Vizcaya (Dupax), Aurora (Casiguran; Umiray), Tarlac (Bamban), Bataan (Mt Mariveles, Lamao River; Dinalupihan), Bulacan (Norzagaray; Angat; Galas), Rizal (Antipolo; Morong), Cavite (Mendez; Alfonso), Laguna (Los Baños; Calauan; Mt San Cristobal; San Antonio; Paete), Quezon (Mt Binuang; Lucban; Guinayangan), Camarines Sur (Sagnay; Camaligan), ALABAT, MINDORO: Mindoro Oriental (Pinamalayan), BOHOL: Bohol (Sevilla), BILIRAN, LEYTE:

Leyte (Dagami; Tigbao), TAWI-TAWI, JOLO, MINDANAO: Agusan del Norte (Mt Hilong-hilong), Surigao del Norte (Surigao; Placer), Davao del Sur (Mt Apo, Todaya), Davao Oriental (Mati). Occurring wild but also extensively cultivated throughout the Archipelago. Gardens, old clearings and secondary forests, at low and medium altitudes up to c. 1400m. Betel pepper, lkmo.

Page 90 of Quisumbing's revision not yet incorporated.

Piper breviamentum C DC, PJS 5 c (1910) Bot. 434; --Merr., EPFP 2 (1923) 4; --Quisumb., PJS 43 (1930) 62; Text figs. 26 & 27. --Type: RS Williams 2104 (PNH, holo, possibly lost; iso: NY 3 sheets*, US*). Mindanao: Zamboanga, Sax River, 4 Feb 1905.

Piper copelandii C DC, PJS 5 c (1910) Bot. 447; --Merr., EPFP 2 (1923) 15. --Type: Copeland 1298 (PNH, holo, possibly lost; iso: US*). Mindanao: Davao del Sur prov., Mt Apo, Todaya, Apr 1904.

Piper sarcostylum C DC, PJS 11 c (1916) Bot. 216; --Merr., EPFP 2 (1923) 15. --Type: Merrill 7305 (US*, iso). Mindanao: Agusan del Norte prov., Agusan River, Oct 1910.

var. breviamentum

LUZON: Quezon (Mt Binuang), Laguna (Mt San Cristobal), PANAY: Aklan (Libacao), Capiz (Jamindan; Mt Aksamilig; Mt Kinablagan), BOHOL: Bohol (Batuan River; Bilar; Kalingohan; Valencia), LEYTE: Leyte (Jaro, Buenavista; Tigbao), MINDANAO: Zamboanga (Sax River), Davao del Sur (Mt Apo, Todaya), Agusan del Norte (Agusan River), Surigao del Norte (Surigao; Placer). Low and medium altitude forests, ascending to 1200m.

var. puberulinervum Quisumb., PJS 43 (1930) 64. --Type: BS 38832 Ramos & Edaño (PNH, holo, possibly lost; iso: US*). Mindanao: Bukidnon prov., Mt Candoon, in forest, altitude c. 1150m, 25 June 1920.

MINDANAO: Bukidnon (Mt Candoon).

Piper brevicuspe (Miq.) Merr., EPFP 2 (1923) 5; --Quisumb., PJS 43 (1930) 26; Text fig. 5; --Rhyncholepis brevicuspe Miq., Syst. Pip. (1843) 283. --Type: Cuming 1843. Bohol: Bohol prov., without definite locality.

Piper rhyncholepis C DC, Prodr. 16, 1 (1869) 344, as 'rhyncholepis'; PJS 5 c (1910) Bot. 209; Candollea 1 (1923) 212; --Fern.-Villar, Novis. App. (1880) 176; --Vidal, Phan. Cuming. Philip. (1885) 138; Rev. Pl. Vasc. Filip. (1886) 220. --Type:

Rhyncholepis cumingiana Miq., Syst. Pip. (1843) 282, non Piper cumingiana Miq., Nov. Act. Acad. Nat. Cur. 21 (1846) Suppl. 45, t. 45. --Type: Cuming 1697. Samar: without definite locality.

BOHOL (Valencia; Kalingohan), LEYTE: Leyte (Tingib; Dagami, Panda; Jaro, Buenavista), SAMAR: Yaborog; Northern Samar (Paranas), Western Samar (Loquilocon), MINDANAO: Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong]), Surigao del Norte (Surigao; Placer), Davao Oriental (Mt Mayo). Low and medium altitude damp forests.

Piper brevistigmum C DC in Elmer, LPB 6 (1914) 2292; --Merr., EPFP 1 (1922) 5; --Quisumb., PJS 43 (1930) 148; Text fig. 81. --Type: Elmer 13684 (BISH*, NY* US*, iso). Mindanao: Agusan del Norte prov., Mt Urdaneta [=Mt Hilong-hilong], in forest, altitude c. 1000m, Sept 1912.

Mindanao: Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong]), in forest, altitude c. 1000m.

Piper cacuminum C DC in Elmer, LPB 3 (1910) 765; --Merr., EPFP 1 (1922) 5; --Quisumb., PJS 43 (1930) 68; Text fig. 30. --Type: Elmer 6890 (PNH, holo, possibly lost). Luzon: Bataan prov., Mt Mariveles, in the mossy forest near summit.

LUZON: Zambales (Mt Tapulao), Bataan (Mt Mariveles). Montane mossy forests, altitude 1100-1500m.

Piper caninum Blume, Verh. Bat. Genoots. 11 (1826) 214; --Merr., EPFP 1 (1922) 5; --Quisumb., PJS

- 43 (1930) 120; Text figs. 62: 1-2; 63: 7-8; 64: 1-3; 65: 1, 8-10; Plate 17; --Gardner, *Blumea* 51 (2007) 580, Fig. 1d, e.
- Piper caninum* var. *basilanum* (C DC) Quisumb., *PJS* 43 (1930) 124; Text figs. 62: 8-9; 64: 8; 65: 6; --*Piper basilanum* C DC, *PJS* 5 c (1910) *Bot.* 457; --Merr., *EPFP* 2 (1923) 4. --Type: Hallier *sn.* (PNH, holo, possibly lost). Basilan, Jan 1904.
- Piper caninum* var. *glabribracteum* C DC, *PJS* 5 c (1910) *Bot.* 459; --Merr., *EPFP* 2 (1923) 5; --Quisumb., *PJS* 43 (1930) 121; Text figs. 62: 3; 64: 4; 65: 2. --Type: Clemens 176 (PNH, holo, possibly lost). Mindanao: Lanao del Sur prov., Lanao Lake, Camp Keithley.
- Piper caninum* var. *hallieri* (C DC) Quisumb., *PJS* 43 (1930) 123; Text figs. 63: 1-2; 64: 7; 65: 5; --*Piper hallieri* C DC, *PJS* 5 c (1910) *Bot.* 458; --Merr., *EPFP* 2 (1923) 9. --Type: Hallier *sn.* (PNH, holo, possibly lost). Basilan, Jan 1904
- Piper caninum* var. *lanaoense* C DC, *PJS* 5 c (1910) *Bot.* 459; --Merr., *EPFP* 2 (1923) 5; --Quisumb., *PJS* 43 (1930) 122; Text figs. 62: 4-6; 64: 5; 65: 3. --Type: Clemens *sn.* (PNH, holo, possibly lost). Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley, Sept 1906.
- Piper caninum* var. *latibracteum* C DC in Elmer, *LPB* 3 (1910) 787; --Merr., *EPFP* 2 (1922) 6; --Quisumb., *PJS* 43 (1930) 126; Text figs. 63: 3-6; 64: 9; 65: 7. --Syntypes: Elmer 7627 (BISH*, MO*); --Elmer 7990 (NY*). Luzon: Quezon prov., Lucban, May 1907; --Elmer 8844 (MO*, NY*). Luzon: Benguet prov., Baguio, Mar 1907
- Piper caninum* var. *oblongifolium* Quisumb., *PJS* 43 (1930) 122; Text figs. 62: 7; 64: 6; 65: 4. --Type: BS 35070 Ramos & Pascasio (PNH, holo, possibly lost). Bucas Grande, in open forests at low altitudes, 8 Jun 1919.
- Piper acutibaccum* C DC, *PJS* 5 c (1910) *Bot.* 459; --Merr., *EPFP* 2 (1923) 2; --Quisumb., *PJS* 43 (1930) 146; Text fig 79, **synon. nov.** --Type: BS 10031 Ramos (PNH, holo, lost). Luzon: Laguna prov., San Antonio.
- Piper apoanum* C DC in Elmer, *LPB* 3 (1910) 785; --Merr., *EPFP* 1 (1922) 3; --Quisumb., *PJS* 43 (1930) 131; Text fig. 67: 8-10, **synon. nov.** --Type: Elmer 11174 (MO*, NY*, US*, iso). Mindanao: Davao del Sur prov., Mt Apo, Todaya, in bamboo thickets near Sibulan River, altitude c. 800m, Jul 1909.
- Piper arborisedens* C DC, *PJS* 11 c (1916) *Bot.* 223; --Merr., *EPFP* 2 (1923) 3; --Quisumb., *PJS* 43 (1930) 145; Text fig. 78, **synon. nov.** --Type: BS 24934 Ramos (NY*, US*, iso). Luzon: Laguna prov., San Antonio, in forest, 20 Aug 1910.
- Piper cabadbaranum* C DC in Elmer, *LPB* 6 (1914) 2292; --Merr., *EPFP* 1 (1922) 5; --Quisumb., *PJS* 43 (1930) 143; Text fig. 76, **synon. nov.** --Type: Elmer 14136 (NY*, iso). Mindanao: Agusan del Norte prov., Mt Urdaneta [=Mt Hilonghilog], wind-swept steep forested slopes of Cawilanan Peak, altitude 4000ft, Oct 1912.
- Piper dagatpanum* C DC in Perkins, *Fragm. Fl. Philip.* (1905) 154; --Merr., *EPFP* 2 (1923) 7; --Quisumb., *PJS* 43 (1930) 132; Text fig. 69, **synon. nov.** --Type: Warburg 14739 (B, holo). Mindanao: Davao del Sur prov., Mt Dagatpan, Forests, altitude c. 1300m.
- Piper haenkeanum* Opiz in C Presl, *Rel. Haenk.* 1 (1828) 159; --Merr., *EPFP* 2 (1923) 9; --Quisumb., *PJS* 43 (1930) 138; Text fig. 74; --Chew, *Blumea* 20 (1972) 147. --Type: Haenke *sn.*
- Piper malalaganum* C DC, *PJS* 5 c (1910) *Bot.* 461; --Merr., *EPFP* 2 (1923) 11; --Quisumb., *PJS* 43 (1930) 137; Text fig. 73, **synon. nov.** --Type: Copeland 696 (PNH, holo, possibly lost). Mindanao: Davao del Sur prov., Malalag.
- Piper marivelesanum* C DC in Perkins, *Fragm. Fl. Philip.* (1905) 155; --Merr., *EPFP* 2 (1923) 11. --Type: Warburg 13640. Luzon: Bataan prov., Mt Mariveles.
- Piper merrittii* C DC, *PJS* 5 c (1910) *Bot.* 460; --Merr., *EPFP* 2 (1923) 12. --Type: FB 6138 Merritt (PNH, holo, possibly lost). Mindoro: Mindoro Oriental prov., Balete.
- Piper negrosense* C DC in Elmer, *LPB* 3 (1910) 786; --Merr., *EPFP* 2 (1923) 17. --Type: Elmer 9482 (MO*, NY*, US*, iso). Negros: Negros Oriental prov., Cuernos Mtns, 'climber upon low trees and over large boulders in the hemp region at 3000ft'..., Mar 1908.
- Piper obovatibracteum* C DC in Elmer, *LPB* 3 (1910) 784; --Merr., *EPFP* 2 (1923) 13. --Type: Elmer 7927 (BISH*, L*, NY*, US*, iso). Luzon: Quezon prov., Lucban, in woods at 800m, May 1907.
- Piper parcipilum* C DC, *PJS* 5 c (1910) *Bot.* 445. --Type: MS Clemens *sn.* Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley.
- Piper perpunctatum* C DC, *PJS* 11c (1916) *Bot.* 219; --Merr., *EPFP* 2 (1923) 13. --Type: Merrill 7246 (US*, iso). Palawan: Palawan prov., Malampaya, Sept 1910.
- Piper sablanum* (C DC) Quisumb., *PJS* 43 (1930) 135; Text fig. 71; --*Piper caninum* Blume var. *sablanum* C DC, *PJS* 5 c (1910) *Bot.* 459; --Merr., *EPFP* 2 (1923) 6; **synon. nov.** --Type: Elmer 6150 (PNH, holo, possibly lost; iso: NY*, US*). Luzon: Benguet prov., Sablan, Apr 1904.
- Piper tenuipedunculum* C DC, *PJS* 5 c (1910) *Bot.* 460; --Merr., *EPFP* 2 (1923) 16; --Quisumb., *PJS* 43 (1930) 136; Text fig. 72, **synon. nov.** --Type: RS Williams 2343 (PNH, holo, possibly lost; iso: NY 2 sheets*). Mindanao: Zamboanga prov., San Ramon, in forests, altitude c. 400ft, 3 Feb 1905.
- Piper tenuirameum* C DC in Perkins, *Fragm. Fl. Philip.* (1905) 159; --Merr., *EPFP* 2 (1923) 16. --Type:

Warburg 13317. Luzon: Rizal prov., Binangonan
Piper villilimum C DC in Elmer, LPB 3 (1910) 788; --Merr., EPFP 2 (1923) 17. --Syntypes: Elmer 7382 (L*, MO*, US*). Luzon: Quezon prov., Lucban, May 1907; --Elmer 7624 (L*, MO*, NY*). Luzon: Quezon prov., Lucban, in woods at 2500ft, May 1907.
Piper viminale Opiz in C Presl, Rel. Haenk. 1 (1828) 150, t. 26, Fig. 1; --Merr., EPFP 2 (1923) 17; --Quisumb., PJS 43 (1930) 126; Text figs. 66 & 67.

W Malesia to the Solomon Isls and Australia.

LUZON: Pangasinan (Mt San Isidro Labrador), Abra (Mt Posuey), Benguet (Baguio; Sablan), Cagayan (Peñablanca), Isabela (San Mariano), Aurora (Casiguran), Nueva Ecija (Mt Umingan [=Mt Mingan]), Zambales (Subic), Pampanga (Mt Pinatubo), Bataan (Dinalupihan; Limay; Mt Mariveles), Bulacan (Angat), Rizal (Binangonan; Bosoboso), Laguna (near Famy; Siniloan-Infanta Road; San Antonio; Paete), Quezon (Mt Tulaog; Dolores; Lucban; Lucban-Mauban Road; Tagkawayan), Camarines Norte (Niog, Sagnay; Paracale), Camarines Sur (Maagnas; Mt Isarog), Sorsogon (Mt Bulusan; Mt Labao), POLILLO (Mt Malulud; Barrio Saloang), CATANDUANES (Mt Mariguison; Sto Domingo River), MINDORO: Mindoro Occidental (Mt Calavite; Paluan), Mindoro Oriental (Balete; Baco River; Mt Halcon; Naujan; Pinamalayan; Bongabong River; Camantigue), BUSUANGA, PALAWAN (Malampaya; Lake Manguao), SIBUYAN (Mt Giting-giting, Magallanes), PANAY: Antique (Culasi), Capiz (Jamindan; Galecia; Mt Kinablangan), Aklan (Libacao), NEGROS: Negros Oriental (Cuernos Mtns), BOHOL (Kalingohan; Bilar), LEYTE: Leyte (Dagami; Tacloban, Tigbao; Jaro, Buenavista), SAMAR (Cauayan Valley; Mt Canislagan; Camaniwan, Catubig River), CAMIGUIN (Mambajao; Mt Hibok-hibok; Mt Mahilog), JOLO (Bud-wak), BASILAN, MINDANAO: Zamboanga (San Ramon), Zamboanga del Sur (Malangas), Lanao del Sur (Camp Keithley), Bukidnon (Tangkulan), Davao, Davao del Sur (Mt Apo; Mt Dagatpan; Malalag), Agusan del Norte (Mt Hilong-hilong), Agusan del Sur (Talicogon), Surigao del Norte (Surigao; Placer), SIARGAO (Dapa), BUCAS GRANDE. Lowland and medium altitude forests and thickets, also along streambanks, ascending to 1300m.

Piper celtidiforme Opiz in C Presl, Rel. Haenk. 1 (1828) 152, t. 26, Fig. 2; --Merr., EPFP 2 (1922) 6; --Quisumb., PJS 43 (1930) 177; Text figs. 98: 1-3 & 99; --Gardner, Blumea 51 (2007) 580, Fig. 11, 4a, 5. --Type: Haenke, *sn* (PR, holo). Luzon.

Piper celtidiforme forma *luzonense* (C DC) Quisumb., PJS 43 (1930) 180; Text fig. 98: 4-5. --Type: Jagor 722 (B, holo). Luzon: without definite locality.

Piper celtidiforme forma *tubuanense* Quisumb., PJS 43 (1930) 182; Text fig. 98: 8-9. --Type: BS 36704 Ramos & Edaño (PNH, holo, possibly lost). Mindanao: Zamboanga del Sur prov., Mt Tabuan

Piper celtidiforme forma *usteri* (C DC) Quisumb., PJS 43 (1930) 181; Text fig. 98: 6-7. --Type: *Usteri sn* (PNH, holo; possibly lost). Guimaras.

Piper celtidiforme var. *vaginans* Quisumb., PJS 43 (1930) 182; Text fig. 98: 10. --Type: BS 19822 RC McGregor (PNH, holo, possibly lost). Luzon: Ifugao prov., Mt Polis.

Piper catubigense Merr., PJS 17 (1920) 244; EPFP 2 (1922) 6; --Quisumb., PJS 43 (1930) 183; Text fig. 100. --Type: BS 24278 Ramos (PNH, holo, possibly lost; iso: NY*, US*). Samar: Catubig River, on trees in damp forests at low altitude, 13 Mar 1916.

Piper corylistachyon (Miq.) C DC, Prodr. 16, 1 (1869) 346 (incl. var. *magnifolia* C DC), PJS 5 c (1910) Bot. 438 (incl. formae *b*, *c*, *d2* C DC), *ibid.* 11 c (1916) Bot. 218; LPB 3 (1910) 776; *Candollea* 1 (1923) 188, 208; --Fern.-Villar, *Novis. App.* (1880) 175; --Vidal, *Phan. Cuming. Philip.* (1885) 138; *Rev. Pl. Vasc. Filip.* (1886) 219; --Merr., *Sp. Blancoanae* (1918) 118; --Chavica *corylistachya* Miq., *Syst. Pip.* (1843) 281. --Type: Cuming 1044 (K, holo; iso: L*). Philippines. No further locality data.

Piper corylistachyon formae *d* and *d2* C DC, PJS 5 c (1910) Bot. 439. --Type: Gregory 110. Luzon: Quezon prov., Atimonan.

Piper longilimum C DC, PJS 11 c (1916) Bot. 221; --Merr., EPFP 2 (1923) 11. --Type: BS 17602 Ramos (US*, iso). Samar: Mt Canislagan, Mar-Apr 1914.

Piper penninerve C DC in Perkins, *Fragm. Fl. Philip.* (1905) 157; --Merr., EPFP 2 (1923) 13; --Quisumb., PJS 43 (1930) 185; Text fig. 101. --Type: Warburg 14744 (B, holo). Mindanao: Davao del Sur prov., Mt Dagatpan.

Piper villirache C DC, PJS 11 c (1916) Bot. 214; --Merr., EPFP 2 (1923) 17; --Quisumb., PJS 43 (1930) 187; Text fig. 102. --Type: BS 15773 E Fenix (US*, iso). Mindanao: Bukidnon prov., Sumilao, Aug 1912.

Piper warburgii C DC in Perkins, *Fragm. Fl. Philip.* (1905) 159; *Candollea* 1 (1923) 285. –Type: Warburg 13116 (B, holo). Luzon: Quezon prov., Sampaloc.

Philippines, New Guinea, Solomon Isls.

LUZON: Ilocos Norte (Bangui to Claveria), Ilocos Sur, Pangasinan (Umingan), Apayao (Abulug River), Kalinga (Mt Masingit), Ifugao (Mt Polis), Aurora (Casiguran), Nueva Ecija (Carranglan), Zambales (Anuling), Bataan (Mt Mariveles), Pampanga (Mt Abu; Mt Arayat), Rizal (Sumag; Mt Angilog; Antipolo; Calauis River; Montalban; Binangonan; Bosoboso; Tanay, San Isidro; Mt Irid), Laguna (Los Baños; Mt Makiling; Sta Cruz; Liliw, Pangil, Paete; San Antonio), Quezon (Infanta; Mt Binuang; Lucban; Atimonan; Sampaloc; Tagkawayan), POLILLO (Burdeos), Camarines Sur (Niog; Bagacay), Albay (Carcaray; Mt Mayon), Sorsogon (Mt Lalao; Mt Bulusan), CATANDUANES (Calolbong), MINDORO: Mindoro Occidental (Paluan), Mindoro Oriental (Lake Naujan; Cauayan; Pinamalayan), MARINDUQUE, PANAY: Antique (Culasi; Tibiao), Capiz (Mt Madias; Mt Bomlon; Jamindan; Agraman, Locero), Iloilo (Suague River; Tigom River), GUIMARAS, NEGROS, CEBU (Catmon), BOHOL (Bilar), BILIRAN, LEYTE: Leyte (Tigbao; Jaro, Buenavista; Dagami), Southern Leyte (Malitbog), SAMAR: Province not known (Lanang; Catubig River), Western Samar (Catbalogan; Loquilocon), BASILAN, MINDANAO: Zamboanga del Sur (Malangas; Mt Tubuan; Port Banga), Davao del Sur (Mt Dagatpan), Davao Oriental (Mt Mayo; Baganga), Bukidnon (Sumilao), Agusan del Norte (Agusan River, Waloe), Surigao del Norte (Surigao; Placer), SIARGAO. Lowland to medium altitude forests and thickets generally, ascending to 1500m.

Piper cordatilimum Quisumb., *PJS* 43 (1930) 141; Text fig 75; Plate 12. –Type: BS 42699 Ramos (PNH, holo, possibly lost; photo seen*). Bohol: Bohol prov., Bilar, Aug-Oct 1923.

LUZON: Laguna (San Antonio), Quezon (Lucban), CATANDUANES (Mt Mariguison), BOHOL (Bilar), LEYTE: Leyte (Jaro, Buenavista; Dagami), MINDANAO: Davao del Sur (Mt Apo, Todaya), Davao Oriental (Mt Mayo). Low and medium altitude forests, ascending to 1200m.

Piper costulatum C DC in Elmer, *LPB* 3 (1910) 764; --Merr., *EPFP* 2 (1922) 7; --Quisumb., *PJS* 43 (1930) 66; Text fig. 29. –Type: Elmer 6805 (NY*, iso). Luzon: Bataan prov., Mt Mariveles, Lamao River, Nov 1904.

Piper podandrum C DC, *PJS* 5 c (1910) Bot. 436; --Merr., *EPFP* 2 (1923) 13. –Type: FB 8141 Curran & Merritt. Luzon: Zambales prov., without definite locality.

LUZON: Cagayan (Abulug River), Isabel (Mt Moises), Nueva Vizcaya (Noso to Imugan; Caraballo Mtn), Aurora (Mt Dingalan), Nueva Ecija (Mt Umingan [=Mt Mingan]), Zambales (Mt Tapulao), Bataan (Mt Mariveles, Lamao River), Rizal (Mt Lumutan; Paningtingan), Quezon (Mt Binuang), CATANDUANES (Sto Domingo River). Low and medium altitude forests, ascending to 1500m.

Piper curtifolium C DC, *PJS* 5 c (1910) Bot. 421; --Merr., *EPFP* 2 (1923) 7; --Quisumb., *PJS* 43 (1930) 76; Text fig. 35. Paraga.

Piper mindorensis C DC, *PJS* 5 c (1910) Bot. 423; --Merr., *EPFP* 2 (1923) 12; --Quisumb., *PJS* 43 (1930) 79; Text fig. 37, **synon. nov.** –Type: FB 4474 Merritt (PNH, holo, possibly lost). Mindoro: Mindoro Oriental prov., Mt Halcon.

LUZON: Ilocos Norte (Mt Palimlim), Abra (Mt Paraga), Mountain Province (Mt Pukis), Benguet (Mt Pulogloco), Rizal (Mt Lumutan), Quezon (Mt Binuang), MINDORO: Mindoro Oriental (Mt Halcon). Montane forests to 2250m altitude.

Piper davaoense C DC, in Perkins, *Fragm. Fl. Philip.* (1905) 154; --Merr., *EPFP* 2 (1923) 7; --Quisumb., *PJS* 43 (1930) 79; Text fig. 37, **synon. nov.** –Type: FB 4474 Merritt (PNH, holo, possibly lost). Mindoro: Mindoro Oriental prov., Mt Halcon.

Piper laxirameum C DC in Elmer, *LPB* 3 (1910) 779; --Merr., *EPFP* 2 (1923) 10. –Type: Elmer 10503 (BISH*, MO*, NY*, US*, iso). Mindanao: Davao del Sur prov., Mt Apo, Todaya. 'In dense humid

woods of fertile steep ravines at 4000ft., May 1909.

MINDANAO: Davao del Sur (Mt Dagatpan; Mt Apo, Todaya; Malita). Forests, altitude 600-1300m.

Piper decumanum L. in Stickman, Herb. Amb. (1754) 19; -- Merr., EPFP 2 (1923) 8; --Quisumb., PJS 43 (1930) 42; Text fig. 14; --Gardner, Blumea 51 (2007) 581, Fig. 2a. --Type from Moluccas.

Philippines, Sulawesi, Moluccas, New Guinea.

LEYTE (Mt Cabalian), MINDANAO: Lanao del Sur (Camp Keithley), Bukidnon (Sumilao), Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong]). Medium altitude forests.

Piper delicatum C DC in Elmer, LPB 3 (1910) 778; --Merr., EPFP 2 (1922) 8; --Quisumb., PJS 43 (1930) 74; Text fig. 34. woods at 7000ft of (Mt) Santo Tomas', Mar 1907.

Piper delicatum var. *glabrum* C DC, PJS 5 c (1910) Bot. 444; --Merr., EPFP 2 (1923) 8. --Type: RS Williams 1216 (PNH, holo, possibly lost). Luzon: Benguet prov., Mt Sto Tomas.

Piper polisanum C DC, PJS 11c (1916) Bot. 209; --Merr., EPFP 2 (1923) 14. --Syntypes: BS 19617 & 19816 RC McGregor. Luzon: Ifugao prov., Mt Polis.

LUZON: Ilocos Norte (Mt Palimlim), Ifugao (Mt Polis), Mountain Province (Mt Data; Bauco; Malamey; Mt Masapilid; Mt Caua), Benguet (Pauai; Baguio; Mt Sto Tomas). Mossy forests to about 2400m.

Piper densibaccum C DC, PJS 5c (1910) Bot. 454; --Merr., EPFP 2 (1923) 5; --Quisumb., PJS 43 (1930) 131; Text fig. 68. --Type: MS Clemens *sn* (PNH, holo, possibly lost). Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley, Mar 1906.

MINDANAO: Lanao del Sur (Camp Keithley).

Piper dipterocarpinum C DC, PJS 5 c (1910) Bot. 455; --Merr., EPFP 2 (1923) 8; --Quisumb., PJS 43 (1930) 133; Text fig. 70. --Type: FB 9146 Whitford & Hutchinson (PNH, holo, possibly lost; iso: NY*). Mindanao: Zamboanga del Sur prov., near Port Banga, in dipterocarp forest, altitude c. 20 m, Jan 1908.

Piper malindangense C DC, PJS 5 c (1910) Bot. 436; --Merr., EPFP 2 (1923) 11. --Type: FB 4758 Mearns & Hutchinson (PNH, holo, possibly lost). Mindanao: Misamis Occidental prov., Mt Malindang.

BASILAN (Binauangan), MINDANAO: Zamboanga del Sur (Banga), Misamis Occidental (Mt Malindang), Lanao del Sur (Camp Keithley). Lowland forests.

Piper elmeri Merr., PJS 17 (1920) 245; --Quisumb., PJS 43 (1930) 151; Text figs. 83 & 84. --Type: BS 24256 Ramos (PNH, holo, possibly lost; iso: US*). Samar: Catubig River, 10 Feb 1916.

LUZON: Laguna (Mt Makiling), Sorsogon (Mt Pocdol), SAMAR (Catubig River). Damp forests, ascending to 450m on Mt Makiling.

Piper ensifolium Quisumb., PJS 43 (1930) 119; Text fig. 61; Plate 11. --Type: BS 45433 Ramos & Edaño (PNH, holo, possibly lost; iso: NY*, US*). Luzon: Aurora prov., Casiguran, in damp forests along stream, low altitudes, 29 May 1925.

LUZON: Ilocos Norte (Banguì to Claveria), Aurora (Casiguran).

Piper eupodium C DC, PJS 11 c (1916) Bot. 219; --Merr., EPFP 2 (1923) 8; --Quisumb., PJS 43 (1930) 47; Text fig. 17. syntype: BS 15227 Ramos (US*). Leyte: Dagami, Aug 1912.

LEYTE: Leyte (Dagami; Jaro, Buenavista). Forests, altitude c. 500m.

Piper firmolimbum C DC, PJS 5 c (1910) Bot. 435; --Merr., EPFP 2 (1923) 9; --Quisumb., PJS 43 (1930) 93; Text figs. 45 & 46, plate 19. --Type: Clemens *sn* (PNH, holo, possibly lost). Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley.

Piper firmolimbum var. *parvilimbum* Quisumb., PJS 43 (1930) 95. --Type: Elmer 14517 (PNH, holo, possibly lost; iso: NY*). Luzon: Sorsogon prov., Irosin, Mt Bulusan, Sept 1916.

LUZON: Laguna (Mt Makiling), Sorsogon (Mt Bulusan, Irosin), ALABAT, LEYTE: Leyte (Tacloban, Tigbao), MINDANAO: Lanao del Sur (Camp Keithley). Low and medium

altitude forests.

Piper fragile Benth. in Hook., London J. Bot. 2 (1843) 234; --Quisumb., PJS 43 (1930) 99; Text fig. 50; --Gardner, Blumea 51 (2007) 581, Fig. 1f. --Type from New Guinea.

Piper fragile var. multinerve C DC, PJS 5 c (1910) Bot. 421; --Merr., EPFP 2 (1923) 9. --Type: Merrill 3366 (NY*, iso). Luzon: Camarines Sur prov., Pasacao, near seashore. Nov 1903.

Borneo (Banguey Is off Sabah), Philippines, Moluccas, New Guinea, Solomon Isls, Micronesia.

LUZON: Quezon (Mt Pular), Camarines Sur (Pasacao), MINDANAO: Davao Oriental (Mt Mayo; Mati), BUCAS GRANDE. On rocks near the sea, lowland and medium altitude forests and thickets.

Piper fuscinerium Quisumb., PJS 43 (1930) 83; Text fig. 40, plate 7. --Type: BS 35380 Martelino & Edaño (PNH, holo, possibly lost). Panay: Aklan prov., Libacao

PANAY: Capiz (Mt Madia-as; Jamindan), Aklan (Libacao), MINDANAO: Bukidnon (Sumilao; Tangkulan). Low and medium altitude forests.

Piper halconense C DC, PJS 5 c (1910) Bot. 422; --Merr., EPFP 2 (1923) 9; --Quisumb., PJS 43 (1930) 69; Text fig. 31. Mt Halcon.

Piper cagayanense C DC, PJS 5 c (1910) Bot. 435; --Merr., EPFP 2 (1923) 5. --Type: BS 7484 Ramos (PNH, holo, ?lost). Luzon

Piper atropicum C DC, PJS 11 c (1916) Bot. 208; --Merr., EPFP 2 (1923) 3; --Quisumb., PJS 43 (1930) 71; Text fig. 32. --Type: BS 15359 Ramos (US*, iso). Leyte: Leyte prov., Dagami, in mossy forest, Aug 1912.

LUZON: Apayao (Tautit; Mt Sulu), Cagayan (Pamplona), Isabela (San Mariano), Zambales (Mt Tapulao; Iba), Quezon (Mt Banahaw; Lucban), Sorsogon (Mt Bulusan, Irosin), MINDORO: Mindoro Oriental (Mt Halcon), LEYTE: Leyte (Dagami), MINDANAO: Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong]). Medium altitude forests upwards, ascending to 1500m.

Piper interruptum Opiz, in C Presl, Rel. Haenk. 1 (1828) 157; --Merr., EPFP 2 (1923) 9; --Quisumb., PJS 43 (1930) 154; Text figs. 85: 1-3; 86; Plate 17, Fig. 1; --Gardner, Blumea 51 (2007) 581, Fig. 1h. --Type: Haenke *sn* (PR, holo). Luzon.

Piper interruptum var. cumingianum (Miq.) Quisumb., PJS 43 (1930) 158; Text fig. 86: 7-11; --Piper cumingianum Miq., Syst. Pip. (1843) 329. --Type: Cuming 1190 (K, holo). Luzon: Albay prov., no definite locality.

Piper interruptum Opiz var. herbaceum C DC, PJS 5 c (1910) Bot. 448; --Merr., EPFP 2 (1923) 9. --Type: Merrill 3182 (PNH, holo, possibly lost). Luzon: Bataan prov., Mt Mariveles, Lamao River.

Piper interruptum var. laevirameum (C DC) Quisumb., PJS 43 (1930) 158; Text fig. 85: 12; --Piper laevirameum C DC, PJS 5 c (1910) Bot. 450; --Merr., EPFP 2 (1923) 10. --Type: Clemens 1255 (PNH, holo, possibly lost). Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley.

Piper interruptum var. loheri (C DC) Quisumb., PJS 43 (1930) 157; Text fig. 85: 4-6; --Piper loheri C DC, PJS 5 c (1910) Bot. 450; --Merr., EPFP 2 (1923) 2. --Syntypes: Loher 4552 (US*). Luzon: Rizal prov., San Mateo, 12-7-90.

Piper interruptum var. multiplinerve C DC in Elmer, LPB 3 (1910) 785; --Merr., EPFP 2 (1923) 9; --Quisumb., PJS 43 (1930) 159; Text fig. 85: 13-14. --Type: BS 1870 Foxworthy (PNH, holo, possibly lost). Luzon: Bataan prov., Lamao

Piper interruptum Opiz var. subarborescens C DC, PJS 5 c (1910) Bot. 448; --Merr., EPFP 2 (1923) 10. --Type: BS 4585 Ramos (US*, iso). Luzon: Rizal prov., Bosoboso, in forest, Aug 1904.

Piper abraense C DC, PJS 5 c (1910) Bot. 451; --Merr., EPFP 2 (1923) 11. --Type: BS 7195 Ramos (PNH, holo, possibly lost; iso: NY*, US*). Luzon: Abra prov., Baret, Jan 1909.

Piper clemensiae C DC, PJS 5 c (1910) Bot. 449; --Merr., EPFP 2 (1923) 6; --Quisumb., PJS 43 (1930) 166; Text fig. 92, **synon. nov.** --Type: Clemens 1200 (PNH, holo, possibly lost). Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley.

Piper elliptibaccum C DC, PJS 5 c (1910) Bot. 449; --Merr., EPFP 2 (1923) 8; --Quisumb., PJS 43 (1930) 165; Text fig. 91, **synon. nov.** --Type: BS 6344 C Robinson (PNH, holo, possibly lost). Luzon: Camarines Sur prov., Maagnas.

Piper loheri C DC forma multiplinerve C DC, PJS 5 c (1910) Bot. 450; --Merr., EPFP 2 (1923) 11. --

Syntypes: --BS 1870 Foxworthy. Luzon: Bataan prov., Lamao, Dec 1904; --BS 6015 C Robinson. Luzon: Laguna prov., Liliw, Mar 1904.
Piper pilispicum C DC, PJS 5 c (1910) Bot. 452; --Merr., EPFP 2 (1923) 13. --Type: BS 5720 Ramos (PNH, holo, possibly lost; iso: US*). Luzon: Benguet prov., without definite locality, Dec 1908.
Piper pulogense C DC, PJS 5 c (1910) Bot. 453; --Merr., EPFP 2 (1923) 14; --Quisumb., PJS 43 (1930) 162; Text fig. 88, **synon. nov.** --Type: FB 16240 Curran, Merritt & Zschokke (PNH, holo, possibly lost; iso: US*). Luzon: Benguet prov., Mt Pulag, altitude 2250m, Jan 1909.
Piper samaranum C DC, PJS 11 c (1916) Bot. 223; --Merr., EPFP 2 (1923) 15. --Type: BS 17546 Ramos. Samar: Cauayan Valley
Taiwan (?), Philippines and probably elsewhere in W Malesia, New Guinea, Solomon Isls, Vanuatu, Australia.

LUZON: Ilocos Norte (Bangui to Claveria; Mt Nagapatan; Mt Piao), La Union (Bauang; San Fernando), Pangasinan (Mt San Isidro Labrador; Villasis, Libtong), Abra (Baret), Mountain Province (Mt Malaya; Bagnen; Gintadan; Bauco; Mt Polis; Mt Caua), Benguet, Cagayan (Abulug to Linao), Isabela (San Mariano), Nueva Vizcaya (Campote), Aurora (Casiguran), Nueva Ecija (Bongabon), Zambales (Candelaria; Botolan, Mt Cabangaan), Bataan (Mt Mariveles, Lamao), Pampanga (Arayat), Bulacan (Angat; Norzagaray; Malolos), Rizal (Mt Lumutan; Mt Susong Dalaga; Mt Angilog; Mt Irid; Mt Tokduan Banoy; Montalban; San Mateo; Antipolo; Pasig; San Isidro; San Andales; Mt Masungit), Manila (Singalong), Laguna (Los Baños; Mt Makiling; Calauan; Liliw; Mt San Cristobal), Quezon, Batangas, Camarines Sur (Maagnas), Sorsogon (Mt Bagacaua), MINDORO: Mindoro Occidental (Paluan), Mindoro Oriental (Mt Halcon), CATANDUANES (Sto Domingo River), PANAY: Antique (Culasi), LEYTE: Leyte (Jaro, Masaganap), SAMAR (Cauayan Valley), MINDANAO: Zamboanga (Sax River mountains), Lanao del Sur (Camp Keithley), Bukidnon (Mt Candoon; Tangkulan), Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong]; Liluan Lake), Surigao del Norte (Surigao). Low and medium altitude forests and thickets generally, ascending to 2250m in Benguet.

Piper langlassei C DC, Ann. Conserv. Jard. Bot. Genève 2 (1898) 273; PJS 5 c (1910) Bot. 433; --Merr., EPFP 2 (1923) 10; --Quisumb., PJS 43 (1930) 91; Text fig. 43. --Type: Langlassé *sn* (P*, iso). Luzon: Laguna prov., base of Mt Banahaw, on calcareous soil, 30 Oct 1894
LUZON: Laguna (Mt Banahaw).

Piper lessertianum (Miq.) C. DC, J. Bot. 4 (1866) 164, non C DC, Prodr. 16¹ (1869) 258; --Merr., EPFP 2 (1923) 10; --Quisumb., PJS 43 (1930) 36; Text fig. 10; --Gardner, Blumea 51 (2007) 581, Fig. 1j; --Chavica *lessertiana* Miq., Syst. Pip. (1843) 270. --Type: Cuming 1343 ('1342'), (BM, holo). Luzon: Cagayan prov., without definite locality.

Piper lessertianum var. *oblongibaccum* (C DC) Quisumb., PJS 43 (1930) 39; Text fig. 11; --Piper *oblongibaccum* C DC in Elmer, LPB 3 (1910) 777; --Merr., EPFP 2 (1923) 12. --Type: Elmer 9456 (BISH*, MO*, NY*, US*, iso). Negros: Negros Oriental prov., Cuernos Mtns, in woods of densely forested trail, altitude 4000ft, Mar 1908.

Philippines, Sulawesi, New Guinea.

LUZON: Apayao (Guiniri), Kalinga (Mt Masingit), Mountain Province (Pininggat), Ifugao (Mt Polis), Cagayan, Aurora (Casiguran), Rizal (Montalban), Quezon (Mt Binuang; Mt Banahaw), Sorsogon (Mt Bulusan), ALABAT, MINDORO: Mindoro Occidental (Mt Calavite), Mindoro Oriental (Mt Halcon), PANAY: Aklan (Mt Magosolon; Libacao), Capiz (Jamindan; Mt Salibongbong; Mt Kinablangan), NEGROS: Negros Occidental (Mt Kanlaon), Negros Oriental (Cuernos Mtns), SAMAR: Northern Samar (Las Navas, Catubig River), MINDANAO: Zamboanga del Sur (Malangas), Lanao del Sur (Camp Keithley), Bukidnon (Mahiluot River), Davao del Sur (Mt Apo), BUCAS GRANDE. Damp forests, mostly from 400-2200m altitudes.

Piper longipedicellatum Quisumb., PJS 43 (1930) 144; Text fig. 77; Plate 13. --Type: BS 38066 Ramos & Edaño (PNH, holo, possibly lost; iso: US*). Luzon: Mountain Province, Mt Caua, on

slopes in the mossy forest, altitude c. 1800m, 3 Mar 1920.

LUZON: Mountain Province (Mt Caua), Ifugao (Mt Polis). Mossy forests, c. 1800m.

Piper longistigmum C DC in Elmer, LPB 3 (1910) 770; --Merr., EPFP 2 (1923) 11; --Quisumb., PJS 43 (1930) 95; Text fig. 47. --Type: Elmer 7578 (MO*, NY*, US*, iso). Luzon: Quezon prov., Lucban, May 1907.

LUZON: Quezon (Lucban), CATANDUANES (Sto Domingo River). Lowland forests.

Piper longivaginans C DC, PJS 5c (1910) Bot. 444; --Merr., EPFP 2 (1923) 3; --Quisumb., PJS (1930) 72; Text fig. 33. --Type: BS 6069 C Robinson (US*, iso). Luzon: Laguna prov., Mt Banahaw, Mar 1909.

Piper crassinodum C DC in Elmer, LPB 3 (1910) 780; --Merr., EPFP 2 (1922) 7. --Syntypes: Elmer 8042 (BISH*, MO*, NY*, US*). Staminate; --Elmer 7626a (MO*, US*), pistillate; Luzon: Quezon prov., Lucban, May 1907.

Piper magallanesanum C DC, PJS 11 c (1916) Bot. 212; --Merr., EPFP 2 (1923) 11. --Type: Elmer 12313. Sibuyan: Mt Giting-giting

LUZON: Nueva Ecija (Mt Umingan [=Mt Mingan]), Rizal (Montalban; Balacbac; Paningtingan; Mt Lumutan; Mt Irid; Mt Tokduangbanog), Laguna (Mt San Cristobal; Mt Banahaw), Quezon (Mt Tulaog; Mt Binuang; Lucban), Camarines Sur (Mt Isarog), SIBUYAN (Mt Giting-giting). Medium to high montane forests, ascending to 2500m.

Piper macropiper Pennant, *Outlines of the Globe* 4 (1800) 242; --Merr., *J. Arnold Arb.* 29 (1948) 191; --Chew, *J. Arnold Arb.* 53 (1972) 10; --Gardner, *Blumea* 51 (2007) 582, Fig. 1g, 4b. --Type: Rumphius, *Herb. Amboin.* 5 (1747) 46, t. 28, Fig. 1.

Piper arborescens Roxb., *Hort. Beng.* (1814) 80; --Merr., EPFP 1 (1922) 3; --Quisumb., PJS 43 (1930) 20; Text fig. 2; pl. 17, Fig. 5. --Type:

Piper arborescens var. *angustilimum* Quisumb., PJS 43 (1930) 22; Text fig. 2. --Type: Elmer 7384 (PNH, holo, possibly lost; iso NY*). Luzon: Quezon prov., Lucban, May 1907.

Piper arborescens var. *hirtellum* (Miq.) Merr., EPFP 1 (1922) 3; --Quisumb., PJS 43 (1930) 23; --Piper *miniatum* Blume var. *hirtellum* C DC in Elmer, LPB 3 (1910) 776; PJS 5 c (1910) Bot. 422; Candollea 1 (1923) 26; 473. --Type:

Piper glandulosum Opiz in C Presl, *Rel. Haenk.* 1 (1828) 158. --Type: Haenke *sn* (MO*, possibly iso). Luzon: no further locality data.

Piper pilipes C DC, PJS 5 c (1910) Bot. 423; --Merr., EPFP 2 (1923) 16; --Quisumb., PJS 43 (1930) 25; Text fig. 4, **synon. nov.** --Type: Clemens *sn*. Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley.

Piper trichophlebium Quisumb., PJS 43 (1930) 24; Text fig. 36. --Type: Merrill 9404 (PNH, holo, possibly lost; iso: NY*, US*). Palawan: Palawan prov., Binaloan, in forests at low altitudes, 19 May 1913.

Extra-Philippine distribution?

LUZON: Ilocos Norte (Bangui to Claveria, Mt Calvario), Abra (Mt Paraga), Apayao (Ngagan), Aurora (Casiguran, Mamatoc River), Bataan (Mt Mariveles), Rizal (Montalban), Laguna (Mt Makiling; San Antonio), Quezon (hills near Malinao; Mt Binuang), Albay, Sorsogon (Mt Bulusan), POLILLO, MINDORO: Mindoro Oriental (Pinamalayan), PALAWAN (Binaloan), PANAY: Mt Bulilao; Capiz (Mt Madia-as; Jamindan; Aagsaman; Mt Salibongbong), LEYTE: Leyte (Jaro, Buenavista; Dagami; Tacloban, Tigbao), SAMAR (Ambalate; Catubig River; Catbalogan; Mt Capotoan; Las Navas), BASILAN, MINDANAO: Zamboanga (Sax River), Zamboanga del Sur (Malangas), Lanao del Sur (Lake Lanao, Camp Keithley), Bukidnon (Sumilao; Mt Candon; Tangkulan), Davao del Sur (Mt Apo, Todaya), Davao Oriental (Mt Mayo), Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong], Surigao del Norte (Placer). Common in lowland and medium altitude forests, ascending to 1000m.

Piper majusculum Blume, *Verh. Bat. Genoots.* 11 (1826) 210, Fig. 25; --Quisumb., PJS 43 (1930) 45; Text Fig. 16; --Gardner, *Blumea* 51 (2007) 582, Fig. 2b. --Type from Java.

Piper rotundistigmum C DC, PJS 5c (1910) Bot. 425; --Merr., EPFP 2 (1923) 15. --Type: Clemens *sn* (PNH, holo, possibly lost). Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley.

Piper rotundistigmum var. *pilosius* C DC, *Candollea* 1 (1923) 201, 206, --Type: BS 17434 Ramos. Samar.
Piper leyteanum C DC, *PJS* 11 c (1916) Bot. 220; *Candollea* 1 (1923) 206. --Type: CA Wenzel 214. Leyte:
Leyte prov., Dagami

Sumatra, Java, Borneo, Philippines, Ambon, New Guinea, Solomon Isls.

LUZON: Albay, Sorsogon (Mt Lalao; Mt Bulusan), LEYTE: Leyte (Dagami; Jaro),
SAMAR (Lauaan), MINDANAO: Lanao del Sur (Lake Lanao, Camp Keithley), Davao,
Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong], Surigao del Norte (Surigao; Placer).
Lowland and medium altitude forests.

Piper medinillifolium Quisumb., *PJS* 43 (1930) 29; Text fig. 6; plate 2. --Type: BS 15364 Ramos
(PNH, holo, possibly lost; iso: US*). Leyte: Leyte prov., Burauen, 12 Aug 1912.

LEYTE: Leyte (Burauen; Jaro, Buenavista). In forests, altitude c. 500m.

Piper melanocaulon Quisumb., *PJS* 43 (1930) 49; Text fig. 18; plate 5. --Type: BS 35725 Martelino
& Edaño (PNH, holo, possibly lost; iso: US*). Panay: Iloilo prov., Mt Bolilao, on the summit, altitude
c. 1000m, 29 Jun 1919.

PANAY: Iloilo (Mt Bolilao). Resembles *P eupodum* C DC, but may be readily
distinguished from it by its black branches and leaves, shorter peduncles and spikes,
laxly arranged fruits, its glabrous rachis, and its bracts.

Piper merrillii C DC, *PJS* 5 c (1910) Bot. 426; --Merr., *EPFP* 2 (1923) 12; --Quisumb., *PJS* 43 (1930)
52; Text fig. 20. --Type: Merrill 1809 (PNH, holo, possibly lost; iso: US*). Mindoro: Mindoro Oriental
prov., Baco River, Apr 1903.

Piper dagamiense C DC, *PJS* 11 c (1916) Bot. 211; --Merr., *EPFP* 2 (1923) 7. --Type: BS 15181 Ramos
(US*, iso). Leyte: Leyte prov., Dagami.

LUZON: Isabela (San Mariano), Quezon (Mt Binuang), Laguna (San Antonio), ALABAT,
MINDORO: Mindoro Occidental (Mt Calavite), Mindoro Oriental (Baco River; Mt Halcon),
PALAWAN (Mt Capoas), PANAY: Antique (Culasi), Aklan (Mt Magosolon; Libacao),
Capiz (Jamindan), NEGROS: Negros Occidental (Mt Kanlaon; Mt Silay), BOHOL: Bohol
(Valencia), LEYTE: Leyte (Dagami), SAMAR (Cauayan; Catubig River), MINDANAO:
Davao Oriental (Mt Galintan). Low and medium altitude forests, ascending to 1250m.

Piper multistigmum C DC, *PJS* 11 c (1916) Bot. 222; --Merr., *EPFP* 2 (1923) 12; --Quisumb., *PJS*
43 (1930) 163; Text fig. 89. --Type: BS 19819 RC McGregor. (NY*, US*, iso). Luzon: Ifugao prov.,
Mt Polis, Feb 1913.

LUZON: Ifugao-Mountain Province (Mt Polis). Forest, altitude cited as 1000m (possibly
nearer 2000m). Resembling *P interruptum* Opiz, but stigma 5 or 6.

Piper mymecophilum C DC, *PJS* 11 c (1916) Bot. 211; --Merr., *EPFP* 2 (1923) 12; --Quisumb., *PJS*
43 (1930) 56; Text fig. 23; --Gardner, *Blumea* 51 (2007) 583, Fig. 2c. --Type: BS 17599 Ramos
(L, US*, iso). Samar: Mt Cauayan, Mar-Apr 1914.

LEYTE: Leyte (Tigbao; Tacloban), SAMAR (Mt Cauayan; Camanabaan; Catubig River,
Pinipisakan). Damp forests, altitude 50-400m.

Piper nigrum L., *Sp. Pl.* (1753) 28.

var. *trioicum* (Roxb.) C DC, *Prodr.* 16¹ (1869) 363; --Merr., *EPFP* 2 (1923) 12; --Quisumb., *PJS* 43
(1930) 167; Text fig. 93; Plate 16. --Type:

Piper glabrispicum C DC in Perkins, *Fragm. Fl. Philip.* (1905) 155; --Merr., *EPFP* 2 (1923) 9. --Type:
Warburg 14748 (B, holo). Mindanao: Davao del Sur prov., Taumo.

Extensively cultivated in the tropics for the well-known spice which is probably the
world's most consumed (peppercorn). Paminta.

Piper ovatibaccum C DC in Elmer, *LPB* 3 (1910) 782; --Merr., *EPFP* 2 (1923) 13; --Quisumb., *PJS* 43
(1930) 80; Text fig. 38, plate 17, Fig. 7. --Syntypes: Elmer 7888 (BISH*, MO*, NY*, US*), staminate.

Luzon: Quezon prov., Lucban, altitude 700, May 1907; --Elmer 8106 (not seen) pistillate. Luzon: Quezon prov., Lucban.
Piper robinsonii C DC, PJS 5c (1910) Bot. 445; --Merr., EPFP 2 (1923) 13. --Type: BS 6065 CB Robinson (PNH, holo, possibly lost). Luzon: Laguna prov., Mt Banahaw.
LUZON: Rizal (Mt Irid; Balacbac), Laguna (Sta Maria; Paete; San Antonio; Mt Banahaw), Quezon (Infanta; Mt Binuang; Lucban; Camarines Norte (Mt Bagacay), Sorsogon (Mt Kililibong), MINDORO: Mindoro Oriental (Mt Halcon), CATANDUANES (Mt Mariguison), PANAY: Capiz (Jamindan), LEYTE: Leyte (Dagami; Jaro, Buenavista), MINDANAO: Lanao del Sur (Lake Lanao, Camp Keithley), Bukidnon (Kabaritan; Mt Dalirig; Mt Candoon; Agusan River near Tangkulan), Agusan del Norte (Mt Urdaneta [=Mt Hilong-hilong]). Medium altitude forests, ascending to 1075m.

Piper parcirameum C DC in Elmer, LPB 3 (1910) 781; --Merr., EPFP 2 (1923) 13; --Quisumb., PJS 43 (1930) 65; Text fig. 28. --Syntypes: Elmer 10899 (BISH*, MO*, NY*) Mindanao: Davao del Sur prov., Mt Apo, Todaya, dense forest at 4000ft of Mt Calelan, Jun 1909; --Elmer 11274 (BISH*, MO*, NY*). Mindanao: Davao del Sur prov., Mt Apo, Todaya, dense forest, altitude 3000ft, Aug 1909. MINDANAO: Davao del Sur (Mt Apo). In forests, altitude 900-1200m.

Piper parong Quisumb., PJS 43 (1930) 105; Text fig. 53, plate 10. --Type: BS 24465 Ramos (PNH, holo, possibly lost; iso: NY*, US*). Samar: Northern Samar prov., Palapag, Catubig, 11 Mar 1916. SAMAR: Northern Samar. Lowland thickets and streamside forests.

Piper paucinerve C DC in Perkins, Fragm. Fl. Philip. (1905) 156; --Merr., EPFP 2 (1923) 13; --Quisumb., PJS 43 (1930) 110; Text figs. 56-58; plate 17, Fig. 6; --Gardner, Blumea 51 (2007) 583, Fig. 3a. --Type: Cuming 912 (holo in de Lessert herbarium). Luzon: Albay prov.; Gardner otherwise cites Cuming 1642 (G or P?). Philippines. No further locality data.
Luzon: Isabela prov., Malunu.

Piper philippinum Miq., Syst. Pip. (1843) 322; --Merr., EPFP 2 (1923) 13; --Quisumb., PJS 43 (1930) 110; Text figs. 56-58; plate 17, Fig. 6; --Gardner, Blumea 51 (2007) 583, Fig. 3a. --Type: Cuming 912 (holo in de Lessert herbarium). Luzon: Albay prov.; Gardner otherwise cites Cuming 1642 (G or P?). Philippines. No further locality data.
Piper albidirameum C DC in Perkins, Fragm. Fl. Philip. (1905) 153; --Merr., EPFP 2 (1923) 8, *pro syn.* P. denudatum; --Quisumb., PJS 43 (1930) 115; Text fig. 59. --Type: Warburg 14751 (B, holo). Mindanao: Davao del Sur prov., Taumo.
Piper crassilimum C DC, PJS 11 c (1916) Bot. 210; --Merr., EPFP 2 (1923) 7. --Type: Merrill 7649 (US*, syntype). Luzon: Benguet prov., Baguio, thickets in limestone region, altitude 1550m, May 1911.
Piper fuscescentirameum C DC, PJS 11 c (1916) Bot. 217; --Merr., EPFP 2 (1923) 8. --Type: CA Wenzel 1184. Leyte. In forest, altitude c. 500m.
Piper lividum C DC in Perkins, Fragm. Fl. Philip. (1905) 155; --Merr., EPFP 2 (1923) 8. --Type: Warburg 11930 (B, holo). Luzon: Isabela prov., Malunu
Piper lucbanense C DC in Elmer, LPB 6 (1914) 2293; --Merr., EPFP 2 (1923) 11. --Type: Elmer 7383. Luzon: Quezon prov., Lucban.
Piper maagnasanum C DC, PJS 5c (1910) Bot. 429; --Merr., EPFP 2 (1923) 8; --Quisumb., PJS (1930) 117; Text fig. 60. --Type: BS 6355 CB Robinson. Luzon: Camarines Sur prov., Maagnas.
Piper pendulifolium C DC in Elmer, LPB 3 (1910) 772; --Merr., EPFP 2 (1923) 8. --Type: Elmer 10942 (BISH*, iso). Mindanao: Davao del Sur prov., Mt Apo, Todaya, Jul 1909.
Piper petraeum C DC, PJS 5 c (1910) Bot. 430; --Merr., EPFP 2 (1923) 13. --Type: Elmer 6430 (NY*, US*, iso). Luzon: Benguet prov., Twin Peaks, on rocks in shady places, May 1904.
Piper psilocarpum C DC, PJS 11 c (1916) 215; --Merr., EPFP 2 (1923) 8. --Type: CA Wenzel 896. Leyte: Leyte prov., Jaro, Buenavista. Forests, altitude c. 500m.

S China, Taiwan, Philippines.

LUZON: Ilocos Norte (Burgos), Apayao (Ngagan), Benguet (Baguio; Twin Peaks), Isabela (Malunu), Nueva Ecija (Mt Umingan), Aurora (Casiguran; Mt Dingalan), Rizal (Mt Lumutan; Bosoboso; Sta Inez; Mt Irid), Cavite (Mendez), Laguna (Mt Makiling; Mt San Cristobal; Mt Banahaw; Siniloan; San Antonio), Quezon (Mt Tulaog; Mt Binuang; Infanta-Siniloan Trail; Lucban; hills near Malinao; Malbog; Atimonan), Camarines Norte (Paracale), Camarines Sur (Adiagnao), Albay, Sorsogon (Mt Bulusan; Mt Bagacana),

ALABAT (Sangerin), MINDORO: Mindoro Occidental (Paluan), Mindoro Oriental (Naujan; Pinamalayan), MASBATE, BATBATAN (W of Panay: Antique prov.), PANAY: Antique (Culasi), Aklan (Libacao; Mt Timbaban), Capiz (Jamindan), BOHOL: Bohol (Valencia), BILIRAN, LEYTE: Leyte (Tacloban, Tigbao; Cabalian; Jaro, Buenavista), SAMAR (Catubig River), MINDANAO: Zamboanga del Sur (Mt Tubuan), Davao del Sur (Taumo; Mt Apo, Todaya), Bukidnon (Botoan; Impasugong), Agusan del Norte (Mt Urdaneta), Surigao del Norte (Surigao; Placer), Davao Oriental (Mati), BUCAS GRANDE. Low and medium altitude forests and thickets, ascending to 1550m.

Piper quinqueangulatum Miq., Syst. Pip. (1854) 85; --Gardner, Blumea 51 (2007) 583, Fig. 3b.
--Type from Java.

Piper cristatum C DC in Elmer, LPB 3 (1910) 770; --Merr., EPFP 2 (1923) 7. --Type: Elmer 10703 (BISH*, K*, MO*, NY*, US*). Mindanao: Davao del Sur prov., Mt Apo, Todaya. Epiphytic in very humid forest along Baruring River, altitude 3500ft, May 1909.

Piper korthalsii Miq., Ann. Mus. Bot. Lugd.-Bat. 1 (1863) 139; --C DC, Candollea 1 (1923) 71.--Merr., EPFP 2 (1923) 10; --Quisumb., PJS 43 (1930) 169; Text figs. 94 & 95. --Type:

Piper korthalsii Miq. var. *longibracteam* C DC in Elmer, LPB 3 (1910) 763; --Type: Clemens 463. Mindanao: Lanao del Sur prov., Lake Lanao, Camp Keithley.

Philippines, Java, Sumatra, and perhaps westward.

LUZON: Apayao (Abulug River; Tamoe; Guiniri), Mountain Province (Bauco), Ifugao (Mt Polis), Benguet (Baguio; Sablan; San Fernando Trail), Cagayan (trail from Sitio Viola to Mt Nanig), Isabela (San Mariano), Nueva Vizcaya (Campote), Aurora (Casiguran), Rizal (Montalban; Mt Irig; Mt Irid), Laguna (San Antonio), MINDORO: Mindoro Oriental (Mt Halcon; Pinamalayan; Bongabong River), PANAY: Antique (Culasi), Capiz (Jamindan; Mt Agramilig), LEYTE: Leyte (Dagami; Jaro, Buenavista), MINDANAO: Lanao del Sur (Lake Lanao, Camp Keithley), Davao del Sur (Mt Apo, Todaya), Agusan del Norte (Mt Urdaneta [=Mt Hilonghilong]), Surigao del Norte (Surigao; Placer). Damp lowland to montane forests, altitude 400-2200m, one record from 2800m.

Piper ramosii C DC, PJS 5 c (1910) Bot. 426; --Merr., EPFP 2 (1923) 14; --Quisumb., PJS 43 (1930) 82; Text fig. 39. --Type: BS 1755 Ramos. Luzon: Rizal prov., Bosoboso.

Piper calvifolium C DC, PJS 11 c (1916) Bot. 217; --Merr., EPFP 2 (1923) 5. --Type: Loher 6794, pro parte (K). Luzon. No further locality data cited.

LUZON: Rizal (Mt Lumutan; Montalban; Antipolo; Bosoboso; San Isidro; San Andales. Low and medium altitude forests.

Nearest to *P. ovatibaccum* C DC, differing in its auriculate leaves and reniform anthers.

Piper retrofractum Vahl, Enum. 1 (1804) 314; --Merr., EPFP 2 (1923) 14; --Quisumb., PJS 43 (1930) 106; Text figs. 54 & 55; --Gardner, Blumea 51 (2007) 583, Fig. 2d. --Type from East Indies.

Piper palawanum C DC, PJS 11 c (1916) Bot. 210; --Merr., EPFP 2 (1923) 13. --Type: BS 1553 E Fenix (US*, iso). Palawan: Palawan prov., Babuyan.

Piper parvifolium Blanco, Fl. Filip. (1837) 23; ed. 2 (1845) 17; ed. 3, 1 (1877) 32. --Type: not extant; "illustrative specimen": Merrill Sp. Blancoanae 523 (US*). Luzon: Bulacan prov., Angat, Sept 1913, leg. M Ramos.

Piper retrofractum Vahl var. *latifolium* C DC in Perkins, Fragm. Fl. Philip. (1905) 157. --Type: Warburg 12125 (B, holo). Luzon: Cagayan prov., Buguey.

Indochina, Peninsular Malaysia to the Moluccas.

BABUYAN ISLS GROUP (DALUPIRI; CAMIGUIN), LUZON: Ilocos Norte (Burgos), La Union (San Fernando), Pangasinan (Rosales; Umingan), Kalinga (Tabuk), Abra (Caburao), Cagayan (Buguey), Nueva Vizcaya (Dupax), Nueva Ecija (Cabanatuan), Bataan (Mt Mariveles; Duale), Bulacan (Angat), Rizal (Mt Lumutan; Montalban; Masambong; Parañaque; Baras; Piliilla; Jalajala; Malapad na Bato), Cavite, Laguna (Los Baños; Galas; Pagsanjan), MINDORO: Mindoro Oriental (Puerto Galera; Baco; Pinamalayan), PALAWAN (Babuyan; Ulugan Bay; Taytay; Puerto Princesa; Iwahig;

Alfonso XIII [=Quezon]; PANAY: Antique (Lipata), Capiz (Mt Timbaban), Iloilo, GUIMARAS. Lowland thickets, 0-850m.

Piper sarmentosum Roxb., Fl. Ind. 1 (1820) 162; --Merr., EPFP 1 (1922) 15; --Quisumb., PJS 43 (1930) 101; Text fig. 51; --Gardner, Blumea 51 (2007) 584. --Type: Piper allenii C DC, PJS 5 c (1910) Bot. 441; --Merr., EPFP 2 (1923) 3. --Type: Allen 152 (PNH, holo, possibly lost). Mindanao: Surigao del Norte prov., Surigao. Piper siassiense C DC, PJS 5 c (1910) Bot. 443; --Merr., EPFP 2 (1923) 15. --Type: Merrill 5311 (NY*, US*, iso). Sulu Archipelago, Siasi Island, in coconut groves, 12 Oct 1906. Piper zamboangae C DC, PJS 5 c (1910) Bot. 424; --Merr., EPFP 2 (1923) 17. --Type: Hallier *sn* (PNH, holo, possibly lost). Mindanao: Zamboanga, no further locality data.

India, S China, southward to the Moluccas.

PALAWAN (Lake Manguao; Brookes Point), NEGROS: Negros Occidental (Kabankalan), SAMAR: Eastern Samar (Borongon), CAMIGUIN (Mambajao), SIASI MINDANAO: Zamboanga, Surigao del Norte (Surigao). Lowland thickets, coconut groves, etc.

Piper sibulanum C DC in Perkins, Fragm. Fl. Philip. (1905) 158; --Quisumb., PJS 43 (1930) 103; Text fig. 52, Plate 9. --Type: Warburg 14742 (B, holo). Mindanao: Davao del Sur prov., Piper oophyllum C DC, PJS 5 c (1910) Bot. 430; --Merr., EPFP 2 (1923) 17. --Type: Copeland 333 (US*, iso). Mindanao: Davao, sea-level in coconut groves, Mar 1904. Piper williamsii C DC, PJS 5 c (1910) Bot. 441. --Type: RS Williams 2750 (PNH, holo, possibly lost; iso: NY*). Mindanao: Davao del Sur prov., Sta Cruz, 13 Apr 1905. MINDANAO: Zamboanga del Sur (Malangas), Bukidnon (Tangkulan), Davao, Davao del Sur (Sta Cruz), Davao Oriental (Mati). Lowland forests and coconut groves.

Piper simile Quisumb., PJS 43 (1930) 34; Text fig. 9; plates 3 & 4. --Type: BS 33105 (PNH, holo, possibly lost). Luzon: Ilocos Norte prov., Bangui to Claveria, altitude c. 500m, 11 Aug 1918. LUZON: Ilocos Norte (Bangui to Claveria), Aurora (Mt Alzapan). Medium altitude to high montane forests, altitude 500-1900m.

Piper sorsogonum C DC, Candollea 1 (1923) 223, *nom. nud.*, 2 (1923) 188; --Quisumb., PJS 43 (1930) 150; Text fig. 82 Irosin, Sept 1916. LUZON: Camarines Norte (Mt Bagacay), Sorsogon (Mt Bulusan), LEYTE: Leyte (Mt Abucayan). Lowland and medium altitude forests.

Piper spathelliferum Quisumb., PJS 43 (1930) 164; Text fig. 90; Plate 15. --Type: BS 26383 Ramos & Edaño (PNH, holo, possibly lost). Luzon: Nueva Ecija prov., Mt Umingan, on slope near summit of Mt Umingan, altitude c. 400m, 20 Aug 1916. LUZON: Nueva Ecija (Mt Umingan). Similar to *P. elliptibaccum* C DC, differing in the presence of glandular brown dots on the lower surface of lamina.

Piper subbulatum K Schum. & Lauterb., Fl. Schutzgeb. Südsee (1900) 262; --Gardner, Blumea 48 (2003) 64; Blumea 51 (2007) 584. --Type from New Guinea. Piper lageniovarium C DC in Elmer, LPB 3 (1910) 797; --Merr., EPFP 2 (1923) 10; --Quisumb., PJS 43 (1930) 44; Text fig. 15. prov., Mt Apo, Todaya, May 1909. Widespread in New Guinea. Also in New Ireland and New Britain, Bougainville, Solomon Isls, Vanuatu and the Philippines. MINDANAO: Bukidnon (Kalasungay), Davao del Sur (Mt Apo, Todaya). Medium altitude thickets and forests, streamsides, etc. (0-) 1300-1700m.

Piper subprostratum C DC, PJS 5 c (1910) Bot. 425; --Merr., EPFP 2 (1923) 15; --Quisumb., PJS 43 (1930) 40; Text figs. 12 & 13. --Type: FB 6751 ML Merritt (US*, iso). Mindoro: Mindoro Oriental prov., S of Lake Naujan, Mar-Apr 1907.

LUZON: Rizal (Mt Lumutan), MINDORO: Mindoro Oriental (S of Lake Nauhan; Mt Halcon). Low and medium altitude forests.

Piper toppingii C DC in Elmer, LPB 3 (1910) 783; --Merr., EPFP 2 (1923) 16; --Quisumb., PJS 43 (1930) 30; Text fig. 7. --Syntypes: Elmer 8375 (MO*, NY*, US*). Luzon: Benguet prov., Baguio, Mar 1907; --Elmer 5850 (NY*, US*). Luzon: Benguet prov., Baguio, Mar 1904.

Piper chlorocarpum C DC, PJS 11 c (1916) Bot. 221; --Merr., EPFP 2 (1923) 16. --Type: BS 16638 Ramos (US*, iso). Luzon: Laguna prov., San Antonio, Sept-Oct 1912.

LUZON: Ilocos Norte (Bangui to Claveria; Mt Palimlim), Mountain Province (Mt Pukis; Mt Masapilid), Ifugao (Mt Polis), Benguet (Mt Pulag; Mt Tonglon [=Mt Sto Tomas]; Baguio), Nueva Vizcaya (Compote), Rizal (Mt Susong Dalaga; Mt Lumutan; San Isidro) Laguna (Mt Makiling; Mt San Cristobal; San Antonio), MINDORO: Mindoro Occidental (Mt Calavite; Paluan). Medium altitude to high-montane forests, ascending to 2100m.

Piper urdanetanum C DC in Elmer, LPB 6 (1914) 2293; --Merr., EPFP 2 (1923) 16; --Quisumb., PJS 43 (1930) 32; Text fig. 8. --Type: Elmer 13713 (BISH*, NA*, NY*, US*, iso). Mindanao: Agusan del Norte prov., Mt Urdaneta [=Mt Hilonghilong], Sept 1912.

Piper wenzelii C DC, PJS 11 c (1916) Bot. 213; --Merr., EPFP 2 (1923) 17. --Type: CA Wenzel 628 (US*, iso). Leyte: Leyte prov., no further locality data, 30 Mar 1914.

Piper hirtirache C DC, PJS 11 c (1916) Bot. 213; --Merr., EPFP 2 (1923) 17. --Type: CA Wenzel 1168. Leyte: Leyte prov., Jaro, Buenavista.

LEYTE: Leyte (Jaro, Buenavista), SAMAR (Ambalate; Catubig River), MINDANAO: Agusan del Norte (Mt Urdaneta). Low and medium altitude forests.

Piper varibracteum C DC in Elmer, LPB 3 (1910) 764; --Merr., EPFP 2 (1923) 16; --Quisumb., PJS 43 (1930) 78; Text fig. 36. --Type: Elmer 11998 (BISH*, MO*, NY*, US*, iso). Mindanao: Davao del Sur prov., Mt Apo, 'scandent upon trees and overtopping dense thickets along the sea coast on moist sandy soil', Oct 1909.

Piper striatum C DC in Elmer, LPB 3 (1910) 776.; --Merr., EPFP 2 (1923) 15, *non* Vahl (1804) *nec* C DC (1871-73). --Type: Elmer 11764 (BISH*, MO*, NY*, US*, iso). Mindanao: Davao del Sur prov., Mt Apo, epiphytic in light woods, altitude c. 3000ft, Sept 1909.

MINDANAO: Davao del Sur (Mt Apo). Sea-level to medium altitude forests.
Near *P. curtifolium*

Non-native species:

Piper aduncum L.

Piper subpeltatum Willd.,

Piper subumbellatum L. var. *subpeltatum* (Willd.) C DC in Donn.-Sm. Enum 6: 39; --Merr., EPFP 2 (1923) 16; --Quisumb., PJS 43 (1930) 17; Text fig. 1; pl. 17, Fig. 11.

Piper umbellatum L. var. *glabrum* C DC, Bull. Herb. Boiss. 16 (1898) 494; --Merr., EPFP 2 (1923) 16.

Doubtfully occurring in the Philippines:

Piper longum L., Sp. Pl. (1753) 29; --fide Quisumb. 1930

Doubtful species:

Piper jagori C DC, Prodr. 16¹ (1859) 358 ('jayeri'); --Merr., EPFP 2 (1923) 10. --Type:

Piper rufinerve Opiz in C Presl, Rel. Haenk. 1 (1828) 159; --Merr., EPFP 2 (1923) 15. --Type:

Piper taumanum C DC in Perkins Frag. Fl. Philip. (1905) 159; -- Merr., EPFP 2 (1923) 15. --Type:

Zippelia Blume =Piper