

SYNOPSIS OF SUBGENUS ERIOCOCCUS

Subgenus **ERIOCOCCUS** (Hassk.) Croizat & Metcalf, J. Arnold Arb. 23: 32. 1942. *Eriococcus* Hassk.,
Tiidskr. Natuurl. Gesch. Physiol. 10: 143. 1843. TYPE: *Eriococcus gracilis* Hassk. (nom. illeg.)
[≡ *Phyllanthus gacilipes* Müll. Arg.]

Monoecious shrubs or subshrubs with phyllanthoid branching. staminate sepals 4, entire to lacerate; staminate disk dissected to cupuliform; stamens 2--4, filaments connate; anthers dehiscing vertically to horizontally; pollen grains spheroidal, pantoporate, exine reticulate; pistillate sepals 6; disk patelliform to urceolate; ovary 3- (8-) locular; sometimes hirsute; styles free or connate, bifid or entire; fruits capsular; seeds smooth.

This Old World subgenus of c. 45 species is restricted to tropical Asia and Malesia, with one species reaching northern Australia.. It appears to be a monophyletic group, but its origin remains unclear. The pantoporate pollen grains suggest an affinity with sect. *Ceramanthus* in subg. *Isocladius*; however, the typical phyllanthoid branching is quite different from that in species of sect. *Ceramanthus*.

Key to the sections

1. Ovary 3-locular, styles bifid to unlobed.

2. Styles bifid, free..

3.. Anthers dehiscing vertically; sepals entire.

Sect. 1. **Eriococcodes**

3. Anthers dehiscing transversely; sepals entire to dentate or laciniate.

Sect. 2. **Eriococcus**

2. Styles entire, connate; filaments free or connate.

Sect. 3. **Emblicastrum**

1. Ovary 5—8-locular; styles entire or emarginate.

Sect. 4. **Scepasma**

Sect. 1. **Eriococcodes** Müll. Arg., *Linnaea* 32: 3. 1863; DC. Prodr. 15(2): 419. 1866. TYPE: *Phyllanthus acutissimus* Miq.

Shrubs; staminate sepals 4, entire; disk-segments 4; stamens 2, filaments connate, anthers emarginate, dehiscing vertically; pistillate flowers > 1/axil; sepals 5 or 6, entire; disk cupular, crenate; ovary 3-locular, papillose; styles free, bifid; seeds striate.

A small section of dubious standing; except for the vertically dehiscent anthers, it could be accommodated in sect. *Eriococcus*.

SPECIES INCLUDED: ASIA (Burma to Java): *Phyllanthus acutissimus* Miq., *P. acutus* Müll. Arg., *P. kampotensis* Beille; *P. spirei* Beille.

Sect. 2. **Eriococcus** (Hassk.) Müll. Arg., *Linnaea* 32: 46. 1863; DC. Prodr. 15(2): 420. 1866. *Eriococcus* Hassk., *Tijdschr. Natuurl. Gesch. Physiol.* 10: 143. 1843. *Epistylum* sect. *Eriococcus* (Hassk.)

TYPE: *Eriococcus gracilis* Hassk. [= *P. gracilipes* (Miq.) Müll. Arg.]

Reidia Wight, *Icon. Pl. Ind. Or.* 5(2): [27], pls. 1903, 1904. 1852. LECTOTYPE (chosen here):

Reidia polyphylla Wight, *Icon. Pl. Ind. Or.* 5: 28, pl. 1904-4. 1852.[= *Phyllanthus zeylanicus* Müll. Arg., 1863, non 1866)]

Shrubs and undershrubs; leaf blades usually asymmetrical at base; staminate sepals 4, dentate to lacerate; disk segments free or connate; anthers dehiscing transversally; pistillate flowers solitary; sepals (5) 6, dentate to lacerate; disk cupular; ovary 3-locular, smooth to papillose, glabrous or pubescent; styles free, bifid.

The majority of species of subgenus *Eriococcus* belong to this section. *Reidia polyphylla* is selected as the lectotype, because among Wight's species it has the characteristic lacerate sepals.

Key to the Subsections

1. Sepals entire.

2. Staminate disk segments free; leaves and flowers glabrous or pubescent. 1. Subsect. *Heyneani*

2. Staminate disk segments connate; leaves and flowers glabrous.

3. Fruiting calyx not accrescent; staminate disk of 2 duplex petaloid segments.

2. Subsect. *Bailloniani*

3. Fruiting calyx ± accrescent; staminate disk annular or 4-lobed.

3. Subsect. *Macrocalyci*

1. Sepals dentate to lacerate.

4. Capsule inflated, > 1 cm in diameter; leaf blades scarcely asymmetric at base.

4. Subsect. *Megacarpis*

4. Capsule not inflated, < 1 cm in diameter; leaf blades usually distinctly asymmetric at base.

.5. Subsect. *Gracilipedes*

Subsect. 2.1. *Heyneani* G. L. Webster, subsect. nov. TYPE: *Phyllanthus heyneanus* Müll. Arg.

Shrubs or subshrubs, leaves and flowers glabrous or hirsutulous; leaf blades asymmetric at base, often falcate; flowers in axillary glomerules or solitary; sepals entire; staminate disk segments 4; anthers emarginate; ovary smooth or verruculose, glabrous or pubescent.

REPRESENTATIVE SPECIES: INDIA AND CEYLON: *P. cinereus* Müll. Arg., *P. heyneanus* Müll. Arg., *P. trachyadenius* Müll. Arg. CHINA: *P. bodinieri* (H. Lévl.) Rehder, *P. forrestii* W. W. Sm.. INDOCHINA: *P. balansae* Beille, *P. rubescens* Beille, *P. spirei* Beille, *taxodiifolius* Beille. PHILIPPINES: *P. greenei* Elmer, *P. stipularis* Merr., *P. triphlebius* C. B. Rob.

Subsect. 2.2. **Bailloniani** G. L. Webster, subsect. nov. TYPE: *Phyllanthus baillonianus* Müll. Arg.

Glabrous subshrub; leaves ovate-lanceolate, not asymmetric at base; flowers mostly solitary; sepals entire; staminate disk segments connate in pairs, petaloid; anther-sacs widely separated; ovary smooth and glabrous.

Monotypic, including only the type species, *Phyllanthus baillonianus* (*Reidia latifolia* Wight), which is endemic to Ceylon and southern India (Tamilnadu).

Subsect. 2.3. **Macrocalyci** G. L. Webster, subsect. nov. TYPE: *Phyllanthus macrocalyx* Müll. Arg.

Glabrous shrubs or subshrubs; leaves symmetric or asymmetric at base; sepals entire, the pistillate accrescent (> 1 cm) in fruit; staminate disk segments connate in a ring or 4-lobed; ovary stipitate, glabrous, smooth; capsule < 1 cm in diameter.

A few Asiatic species. *Phyllanthus megalanthus* C. B. Rob., from the Philippines, has a similar large fruiting calyx, but differs in its asymmetric leaf base and free staminate disk segments.

REPRESENTATIVE SPECIES: INDIA: *Phyllanthus beddomei* (Gamble) M. Monahan; *P. macrocalyx* Müll. Arg. MALAYA (Penang): *P. acutus* Müll. Arg. PHILIPPINES: *P. megalanthus* C. B. Rob.

Subsect. 2.4. **Megacarpi** G. L. Webster, subsect. nov. TYPE: *Reidia megacarpa* Gamble [= *Phyllanthus megacarpus* (Gamble) Kumari & Chandrab]

Glabrous shrubs; leaf blades scarcely asymmetric at base; sepals dentate to lacerate, the pistillate not accrescent; staminate disk segments free; ovary sessile, glabrous, smooth; capsule inflated, > 1 cm in diameter.

Three species that differ in a number of respects; the subsection may not be monophyletic.

SPECIES INCLUDED: INDIA: *Phyllanthus megacarpus* (Gamble) Kumari & Chandrab.
BURMA TO INDOCHINA: *Phyllanthus elegans* Wall. ex Müll. Arg. MALAYA, JAVA: *P. gomphocarpus*
Hook. f.

Subsect. 2.5. **Gracilipedes** G. L. Webster, subsect. nov. TYPE: *Phyllanthus zeylanicus* Müll. Arg.

Shrubs or subshrubs; stems glabrous or hirsutulous, leaves and flowers glabrous; leaf blades asymmetric at base; staminate flowers in glomerules or solitary; sepals dentate to lacinate; staminate disk segments 4; often petaloid; anther thecae discrete, often distinctly separated; ovary smooth, glabrous or pubescent.

The largest group of sect. *Eriococcus*, occurring from India and Ceylon to Indonesia and the Philippines.

REPRESENTATIVE SPECIES: CEYLON: *Phyllanthus oreophilus* Müll. Arg., *P. zeylanicus* Müll. Arg. INDIA AND CEYLON: *P. beddomei* (Gamble) M. Monahan, *P. fimbriatus* (Wight) Müll. Arg., *P. gageanus* (Gamble) M. Monahan, SOUTHEAST ASIA (Burma to Malaya): *P. hullettii* Ridley, *P. pulcher* Wall. ex Müll. Arg. *P. sootepensis* Craib, *P. winitii* Airy Shaw. INDOCHINA: *P. evrardii* Beille, *P. nhatrangensis* Beille, *P. pulchroides* Beille, *P. rubrisstipulus* Govaerts & Radcl.-Sm. CHINA: *P. chekiangensis* Croizat & F. P. Metcalf; *P. leptoclados* Benth. .INDONESIA: *P. accrescens* J. J. Sm., *P. gracilipes* Müll. Arg., *P. kinabaluicus* Airy Shaw, *P. muriculatus* J. J. Sm., *P. zollingeri* Müll. Arg. PHILIPPINES: *P. blancoanus* Müll. Arg., *P. laciniatus* C. B. Rob., *P. letytensis* Elmer, *P. mindorensis* C. B. Rob., *P. sibuyanensis* Elmer.
AUSTRALIA: *P. armstrongii* Benth.

Sect. 3. **Emblicastrum** Müll. Arg., DC. Prodr. 15(2): 324. 1866. TYPE: *Phyllanthus lamprophyllus* Müll. Arg.

Glabrous shrubs; leaves rigid, microphyll (< 1 cm long), blades asymmetrical at base; flowers solitary, sessile or subsessile, pistillate in distal axils; sepals entire; staminate sepals 4, pistillate 5; staminate disk segment 4, free; stamens 2, filaments connate, anthers horizontally dehiscent; ovary 5—8-ocular, smooth and glabrous; styles reduced to stigmas.

A monotypic section, apparently closed related to sect. *Scepasma*. The single species, *Phyllanthus lamprophyllus*, is distributed from Java and Palawan to New Guinea and Queensland.

SPECIES INCLUDED: SOUTHEAST ASIA (Indonesia to New Guinea, Queensland):

Phyllanthus lamprophyllus Müll. Arg., *P. watsonii* Airy Shaw PHILIPPINES: *P. armstrongii* Benth.

Sect. 4. **Scepasma** (Blume) Müll. Arg., *Linnaea* 32: 50. 1863; DC. Prodr. 15(2): 426. 1866. *Scepasma*

Blume, *Bijdr. Fl. Ned. Ind.* 582. 1826. TYPE: *Scepasma buxifolia* Blume [= *Phyllanthus*

buxifolius (Blume) Müll. Arg.]

Nymphanthus Lour., *Fl. Coch.* 543. 1790. *Phyllanthus* sect. *Nymphanthus* (Lour.) Müll. Arg., DC. Prodr.

15(2): 419. 1866. TYPE: *Nymphanthus rubra* Lour. [= *Phyllanthus ruber* (Lour.) Spreng.]

Glabrous shrubs; leaves chartaceous, > 2 cm long, blades asymmetrical at base; flowers in axillary unisexual or bisexual cymules; sepals entire, staminate sepals 4, pistillate 5 or 6; staminate disk segments 4; anthers dehiscing vertically or transversely; ovary (4-) 5—8-locular, smooth, glabrous. styles connate, distally dilated, bilobed.

Three rather diverse species. Section *Nymphanthus* is here combined with sect. *Scepasma*, despite its acceptance as a separate section by Müller (1866) and Pax & Hoffmann (1931). The type species of the two sections share the distinctive character of a multilocular ovary, and the difference in anther dehiscence is variable in subgenus *Eriococcus*.

SPECIES INCLUDED: INDOCHINA: *Phyllanthus ruber* (Lour.) Spreng; *P. touranensis* Beille [position uncertain]. JAVA, BORNEO, & PHILIPPINES: *Phyllanthus buxifolius* (Blume) Müll. Arg. MICRONESIA (Caroline Islands): *P. palauensis* Hosok.