

A PROVISIONAL SYNOPSIS OF NORTH AMERICAN DALECHAMPIA

Synopsis of the sections

Involucral bracts deciduous; staminate bracts 4, free, decussate in 2 pairs; staminate involucl radially symmetrical or slightly bilaterally symmetrical; staminate bractlets distally lacerate, resin production none to copious.

Involucral bracts small (less than 0.5 cm long), stipuliform;

twining vines with unlobed leaves..... Rhopalostylis

Involucral bracts much larger (1-5 cm long), often brightly colored; twining vines with simple to compound leaves;

seeds rugulose..... Dioscoreifoliae

Involucral bracts persistent after pollination; staminal involucl more or less bilaterally symmetrical (compressed parallel to subtending involucral bract); staminate bracts free to connate, 3 adaxial and 1 abaxial; staminate bractlets laminar.

Staminate bracts more or less discrete; staminate bractlets producing aromatic compounds (not resins) from villiform projections; shrubs with simple leaves; seeds verruculose.

..... Cremophyllum

Staminate bractlets resiniferous, entire to denticulate but not with villiform projects; undershrubs or vines; seeds mostly smooth.

Staminate bracts more or less discrete; staminate bractlets dentate or lacerate; vines with simple or lobed leaves.

..... Tiliifoliae

Staminate bracts completely connate, the rim of the 2-lipped involucl entire or nearly so; staminate bractlets entire to dentate; undershrubs or vines with simple, lobed, or compound leaves..... Dalechampia

Sect. 1. *Rhopalostylis* Pax & Hoffm. Pflanz. 68: 7. 1919.

Twining vines; leaves ovate, simple, entire, palmately veined; peduncles bractless; blades of involucral bracts less than 5 mm long and broad (smaller than their stipules), simple, acuminate, entire, not colored; staminate bracts free, decussate in 2 pairs; staminate flowers 8-12; sepals 4 or 5, stamens 8-14; pistillate flowers 3 or 4; pollen grains prolate; sepals 5 or 6, entire; style clavate, stigma punctiform; seeds smooth.

Type species: *Dalechampia micrantha* Poepp.

The section of 3 South American species is not represented in North America.

Sect. 2. *Dioscoreifoliae* Pax & Hoffm. Pflanz. 68: 53. 1919.

Twining vines; leaves simple to palmately compound; peduncles bearing 1 or more leaves or bracts; blades of involucral bracts simple or lobed, usually dentate, typically white or pink to purple; staminate bracts free, decussate in 2 pairs, often coriaceous and deciduous; staminate bractlets lanceolate to laminar, more or less distally lacerate, scarcely to distinctly resiniferous; staminate flower 8-10; sepals 4 or 5, stamens 10-50; pistillate flowers 3; sepals 5-10, entire to pinnatifid, lobes not glanduliferous; style clavate or none, stigma sometimes dilated; seeds rugulose.

Type species: *Dalechampia dioscoreifolia* Poepp.

This section of about 20 species is well characterized by the relatively unspecialized radially/symmetrically staminate involucre with distinct, rigid bracts. The species are diverse in habit, and it may be possible to group them into subsections on further study.

1. *Dalechampia friedrichsthalii* Muell. Arg. Flora 55: 45. 1872;

Pax & Hoffm. Pflanz. 68: 52. 1919; Webster, Ann. Missouri Bot. Gard. 54: 315. 1968.

Type: Nicaragua, Rio San Juan, Friedrichsthal 683 (G).

2. *Dalechampia shankii* (Molina) comb. ined.

Tragia shankii Molina, Ceiba 11: 68. 1965.

Type: Costa Rica, Limon, drainage of Rio Reventazon, Shank & Molina 4427 (F).

3. *Dalechampia websteri* Armbruster, ined.

Type: Costa Rica, Heredia, Finca La Selva, Armbruster & Herzig 79-207 (ALA).

4. *Dalechampia canescens* H. B. K. Nov. Gen. Sp. Pl. 2: 98. 1817.

Type: Colombia, Cundimarca, Mariquita, Humboldt (P).

5. *Dalechampia dioscoreifolia* Poepp. in Poepp. & Endl. Nov. Gen.

Sp. Pl. 3: 20. 1845.

Type: Peru, Maynas, Poeppig 2163 (B).

Sect. 3. *Cremophyllum* (Scheidw.) Baillon, Etude Gen. Euphorb. 487.

1858; Pax & Hoffm. Pflanzenr. 68: 9. 1919.

Type species: Dalechampia spathulata (Scheidw.) Baillon

Erect shrubs with unbranched or sparsely branched stems; leaves simple, pinnately veined; peduncles bractless; blades of involucrel bracts simple, pink or yellow; staminate involucrel 2-lipped, with 3 bracts forming adaxial lip and 1 bract the abaxial lip; staminate bractlets laminar, with marginal vermiform papillae producing aromatic compounds; staminate flowers ⁶⁻¹² ~~8-10~~; stamens ³⁰ ~~10-15~~; pollen grains subglobose; pistillate flowers 3; sepals 5, entire, linear-lanceolate, not glandular; style slender, stigma not dilated; seeds verruculose.

This distinctive neotropical section includes 2 or 3 species with a discontinuous distribution from Mexico to Peru and Brazil.

5a. *Dalechampia schottii* Greenman, *Fieldiana Bot.* 2: 255. 1907.

Type: Mexico, Yucatan, Chichankanab, Schott 534, 956 (F).

This distinctive species appears to be systematically isolated among the North American species. It resembles sect. Dioscoreifoliae in its small deciduous bracts, but the 2-lipped staminate involucre is more like that of sect. Tiliifoliae. The resiniferous gland of the staminate inflorescence is unique in the small pectinate staminate bractlets that produce a bluish rather than yellow or orange resin. Probably it will have to be referred to a special section or subsection.

6. *Dalechampia spathulata* (Scheidw.) Baillon, *Étude Gen. Euphorb.* 487. 1858; Pax & Hoffm. *Pflanzenr.* 68: 9. 1919; Standley & Steyermark, *Fieldiana Bot.* 24: 85. 1946. Type: Brazil, described from cultivated plants.

Dalechampia roezliana Muell. Arg. DC. *Prodr.* 15(2): 1233. 1866. Type: Mexico, Veracruz, Sontecomapan, Roezl (G).

Sect. 4. *Tiliifoliae* (sect. nov.)

Twining vines; leaves simple to palmatilobed; peduncles with 1 or more leaves or bracts; blades of involucral bracts unlobed to deeply lobed, mostly whitish; staminate involucrel 2-lipped, with 3 bracts forming the adaxial lip and 1 bract the abaxial lip; staminate bractlets more or less laminar, distally toothed or lacerate, distinctly resiniferous; staminate flowers 8-10; stamens 20-90; pollen grains prolate; pistillate flowers 3; sepals 9-12, deeply pinnatifid, lobes gland-tipped; style abruptly dilated into a peltate stigma; seeds smooth or reticulate.

Type species: *Dalechampia tiliifolia* Lam.

This section of 5 or 6 neotropical species is intermediate in some ways between sect. *Dioscoreifoliae* and sect. *Dalechampia*; it has separate staminate bracts and lacerate bractlets as in the former, but a 2-lipped involucrel and more or less persistent bracts as in the latter.

7. *Dalechampia tiliifolia* Lam. *Encycl. Meth. Bot.* 2: 257. 1786; Muell. Arg. DC. *Prodr.* 15(2): 1247. 1866; Fl. Brasil. 11(2): 654. 1874; Pax & Hoffm. *Pflanzenr.* 68: 37, fig. 7A. 1919; Webster, *Ann. Missouri Bot. Gard.* 54: 311, fig. 18. 1968.
Type: probably collected in Peru, Joseph Jussieu (P).

Sect. 5. Dalechampia

Subshrubs or vines (rarely shrubs); leaves simple to lobed or compound; peduncles usually with 1 or more bracts or leaves; blades of involucre bracts lobed or apically toothed, greenish, white, yellow, or pink, more or less persistent; staminate involucre 2-lipped, the lips entire or cleft but not of 4 discrete bracts; staminate bractlets laminar, toothed or entire, distinctly resiniferous; staminate flowers mostly 8-12; stamens 15-100; pollen grains prolate; pistillate flowers 3; sepals 5-12, entire to pinnatifid, lobes sometimes gland-tipped; style slender or clavate, stigma slightly to markedly dilated; seeds mostly smooth.

Type species: Dalechampia scandens L.

Subsect. 1. Humiles (Pax & Hoffm.) stat. nov.

Dalechampia sect. Humiles Pax & Hoffm. Pflanzenr. 68: 53. 1919.

Suffruticose or stems scandent but not twining; leaves simple or lobed; seeds rugulose.

Type species: Dalechampia humilis Muell. Arg.

This group of 10-20 species appears to be entirely South American except for the following Mesoamerican species.

8. Dalechampia schippii Standley, Fieldiana Bot. 11: 133. 1932.

Type: Belize, Sarawee, Schipp S-181 (F).

Subsect. 2. Dalechampia

Dalechampia sect. Triphyllae Pax & Hoffm. Pflanzenr. 68: 13. 1919.

Dalechampia sect. Scandentes Pax & Hoffm. Pflanzenr. 68: 27. 1919.

Twining vines; leaves simple to palmately lobed or compound; seeds mostly smooth.

Type species: Dalechampia scandens L.

9. *Dalechampia cissifolia* Poepp. in Poepp. & Endl. Nov. Gen. Sp.
Pl. 3: 20. 1845. Type: Peru, Maynas, Yurimaguas, Poeppig 2085 (B).
Dalechampia panamensis Pax & Hoffm. Pflanzenr. 68: 19. 1919. Type:
Panama: PCanal Zone, Cerro Gordo, Pittier 2331 (US).
10. *Dalechampia heteromorpha* Pax & Hoffm. Pflanzenr. 68: 26. 1919.
Type: Costa Rica, Rio Grande, San Ramon, Brenes 14414.
11. *Dalechampia molliuscula* Blake, Contr. U. S. Nat. Herb. 24: 12.
1922. Type: Guatemala, Izabal, Quebradas, Blake 7547 (US).
12. *Dalechampia magnistipulata* Webster & Armbruster, Brittonia 31:
352. 1979. Type: Mexico, Veracruz, Los Tuxtlas, Webster &
Armbruster 20986 (DAV).
13. *Dalechampia scandens* L. Sp. Pl. 1054. 1753.
Type: presumably in Hortus Cliffortianus Herb. (BM).
14. *Dalechampia laevigata* Standley, Fieldiana Bot. 4: 312. 1929.
Type: Honduras, Atlantida, Lancetilla Valley, Standley 53531 (F).
Perhaps a synonym of D. heteromorpha.
15. *Dalechampia denticulata* Griseb. Nachr. Ges. Wiss. Goettingen
1865: 181. 1865; Muell. Arg. DC. Prodr. 15(2): 1251. 1866;
Pax & Hoffmann, Pflanzenr. 68: 50. 1919. Type: Cuba, Pinar
del Rio, Wright 2011 (GOET).