**3. CLEISTANTHUS** J. D. Hooker ex Planchon, Icon. Pl. 8: t. 779. 1848.

*Leiophyxis* Miquel; *Paracleisthus* Gagnepain.

Trees or shrubs, monoecious or dioecious; indumentum of simple hairs. Leaves alternate, petiolate; stipules persistent or caducous; leaf blade simple, entire, venation pinnate. Flowers in axillary glomerules or spikes, small, sessile or sometimes shortly pedicellate. Male flowers: sepals 4–6, valvate; petals 4–6, small, scalellike; disk cupular or cushionlike; stamens 5; filaments connate up to half their length, topped with rudimentary ovary; anthers usually ovoid, dorsifixed, extrorse, anther bilocular, longitudinally dehiscent. Female flowers: sepals and petals as in male; disk cup-shaped or conical, surrounding basal ovary, sometimes as long as ovary, tearing into lobes during fruit development, rarely absent; ovary 3(or 4)-celled; ovules 2 in each cell; styles 3, bifid at apex. Fruit a capsule, subglobose, (bi- or) trivalvate when mature, sometimes stipitate (carpopodium), epicarp thin, endocarp bony, inside fibrous; columella and sepals persistent. Seeds (1 or)2 in each cell; cotyledons broad, thinly to thickly fleshy; endosperm copious to submembranous. 

About 141 species: tropical Africa, Asia, and Australia; seven species in China.

1a. Ovary and capsules pubescent or hirsute.

2a. Branchlets and petioles rusty tomentose; leaves pubescent abaxially ............................................................... 1. *C. tomentosus*

2b. Branchlets (except *C. sumatranus* young branchlets puberulent), petioles, and leaves abaxially glabrous.

3a. Leaf blade 3–10(–15) × 2–5(–7) cm, apex caudate-acuminate; lateral veins usually obscure; bract margins glabrous; petal apex entire .............................................................. 2. *C. sumatranus*

3b. Leaf blade 14–30 × 8–15 cm, apex obtuse; lateral veins prominent; bracts ciliate at margin; petal apex crenulate ............................................................................................................................................ 3. *C. macrophyllus*

1b. Ovary and capsules glabrous.

4a. Female disk as long as or longer than ovary.

5a. Leaf blade long acuminate; male pedicels 5–10(–13) mm; female disk apex pubescent ................. 4. *C. pedicellatus*

5b. Leaf blade apex acuminate; male flowers sessile; female disk apex glabrous ................................. 6. *C. petelotii*

4b. Female disk much shorter than ovary, only to base of ovary.

6a. Leaf blade apex long acuminate, lateral veins 8–10 pairs; disk margin entire ........................................ 5. *C. tonkinensis*

6b. Leaf blade apex obtuse or retuse, lateral veins 7–9 pairs; disk margin erose or with 5 crenulations ........ 7. *C. concinnus*

---

1. **Cleistanthus tomentosus** Hance, J. Bot. 15: 337. 1877. 

*Leiophyxis* Miquel; *Paracleisthus* Gagnepain.

*Leiophyxis* Miquel; *Paracleisthus* Gagnepain.

*Leiophyxis* Miquel; *Paracleisthus* Gagnepain.

*Leiophyxis* Miquel; *Paracleisthus* Gagnepain.

Evergreen trees up to 18 m tall, to 40 cm d.b.h.; bark reddish-brown, smooth; plants glabrous except for sparsely pubescent young branches and juvenile fruits and densely hispitate ovary. Stipules ovate-triangular, ca. 0.5 mm, often caducous; petiole 2–7 mm; leaf blade ovate or elliptic, 3–10(–15) × 2–5(–7) cm, papery or stiffly papery, abaxially glaucous or dull, base obtuse to rounded, apex acuminate; lateral veins 4 (or)5–7(–8) pairs, slightly obscure. Flowers in axillary few-flowered fascicles (up to ca. 7), subtended by normal leaves, or on smaller-leaved or spikelike leafless axes; bracts triangular. Male flowers: sepals 5, ovoid-lanceolate, ca. 2 mm; petals 5, obovate, ca. 1 mm; disk annular, entire, ca. 1 mm high; stamens 5; filaments ca. 0.6 mm; anthers ovate, ca. 0.5 mm; rudimentary ovary ovoid-trigonous, ca. 0.5 mm. Female flowers: pedicels short but extending to ca. 5 mm in fruit; sepals 5, obovate to ovate-lanceolate, ca. 8 mm; petals and disk as in male; ovary ovoid; styles 3, apex bifid. Fruiting pedicel to 8 mm; capsule ovoid-trigonous, ca. 9 mm in diam., 3-valved when mature; carpopodium up to 8 mm. Seeds ovoid-trigonous, ca. 6 mm. Fl. Mar–Jun, fr. Jun–Sep.
1, subglobose to ovoid, up to 6 mm. Fl. Mar–Aug, fr. Apr–Oct.

Dense deciduous or evergreen forests; sea level to 500–700 m.


Primary lowland forests; below 300 m. Guangxi (Longgang) [Indonesia, Malaysia, New Guinea, Philippines].
triangular; disk scales obovate, ca. 1 mm. Rudimentary ovary with trifid apex. Female flowers: sepals and petals as in male; disk urceolate or cylindric, ca. 2 mm high, surrounding ovary, apex with minute ligules; ovary globose, smooth; styles 3. Capsules subglobose, 11–15 × ca. 15 mm, epicarps reticulate-rugose; carpopodium 3–5 mm. Seeds ovate. Fl. Apr–Jun, fr. May–Nov.

Limestone forests; 200–400 m. W Guangxi [N Vietnam].


东方闭花木 dong fang bi hua mu

Cleistanthus dongfangensis (P. T. Li) H. S. Kiu; Phyllanthus dongfangensis P. T. Li.

Erect shrubs up to 4 m tall; stem and branches terete; branchlets pubescent when young, glabrous at maturity. Stipules angular or subulate, 1–3 mm inserted at bilateral base of petiole, brown; petiole 1–4 mm, pubescent to glabrous; leaf blade papery, elliptic or ovate, 1–7 × 0.5–3 cm, base acute, rounded, obtuse, or slightly cordate, apex acute, obtuse, or retuse, rarely shortly acuminate, glabrous on both surfaces, dark green adaxially, greenish abaxially; lateral veins 7–9 pairs, obliquely ascendant, anastomosing near margin, slightly elevated on both surfaces. Flowers androgynous, often grouped into glomerules; inflorescences axillary or inserted at middle or lower part of aphyllous branchlets, 5–7-flowered; bracts small, broadly ovate, lanate inside. Male flowers: calyx ca. 4 mm, red, glabrous; sepals 5, oblong, acute, valvate; petals 5, small, rhombic, ca. 0.4 mm, membranous, glabrous; disk annular, with 5 crenulations; stamens 5, ca. 3 mm; filaments connate; anthers ca. 2 mm, 2-celled, longitudinally dehiscent. Female flowers: calyx ca. 3 mm, glabrous; sepals 5, triangular, acute; petals 5, spatulate, ca. 1 mm, glabrous; disk cup-shaped, ca. 1 mm, erose at apex; ovary ovoid, ca. 1 mm, glabrous; styles 3, ca. 1 mm, free or connate at base, shallowly bifid. Capsules sessile, oblate-spherical, 7–8 mm in diam., gray-brown, septicidal and loculicidal, reticulate-elevated outside when mature, endocarp yellowish. Seeds subangular, ca. 3 mm. Fl. Jan–Mar, fr. Apr–Jun.

Open forests or scrub on sandy or clayey soils; 200–500 m. Hainan (Changjiang, Dongfang, Ledong) [Vietnam].

“Cleistanthus anomalus Merrill & Metcalf” (Croizat, J. Arnold Arbor. 23: 39. 1942) lacks a validating description but seems to belong here.