

KEY TO THE SPECIES

- 1a. Leaves larger on the average (4-18 x 2-8 cm); heads in racemes ..... 2. *A. latifolia*  
 1b. Leaves smaller and especially narrower (0.8-7 x 0.5-3 cm); heads solitary ..... 2  
 2a. Calyx entirely tomentose outside ..... 3. *A. sericea*  
 2b. Calyx entirely glabrous or pubescent only on the tube (i.e. calyx cup glabrous) ..... 1. *A. acuminata*

1. **Anogeissus acuminata** (Roxb. ex DC.) Guill. & Perr., Fl. Seneg. Tent. 1 : 280. 1832; Bedd., Fl. Sylv. S. India : t. 16. 1869; Brandis, For. Fl. NW. India : 228. 1874 & in Ind. For. 25 : 287. 1899 & Ind. Trees : 315. 1906; Kurz, For. Fl. Brit. Burma 1 : 466. 1877; Clarke in Fl. Brit. India 2 : 450. 1878; Coll. & Hemsl. in J. Linn. Soc. 28 : 58. 1889; Prain, Bengal Pl. 1 : 479. 1903; Gamble, Fl. Pres. Madras 3 : 467. 1919; Haines, Bot. Bihar & Orissa 3 : 355. 1922; Kanjilal *et al.*, Fl. Assam 2 : 248. 1938; Scott in Kew Bull. 33(4) : 563. 1979; Deb, Fl. Tripura 1 : 379. 1981; Pandey in Fl. Rajasthan 1 : 312. 1987; Clemant in Fl. Bhutan 2(1) : 309. 1991; Gang. & T. Chakrab. in J. Econ. Tax. Bot. 17(3) : 655. 1993.

*Conocarpus acuminata* Roxb. [Hort. Beng. : 34. 1814,

*nomen*] ex DC., Prodr. 3 : 17. 1828 & Mem. Combret. : 25, t. 3. 1828; Roxb., Fl. Ind. 2 : 443. 1832; G. Don, Gen. Hist. 2 : 661. 1832; Wight & Arn., Prodr. : 316. 1834; Miq., Fl. Ind. Bat. 1(1) : 605. 1855.

Type : "In India Orient. *Panch-Maun dicta*" - Roxburgh, Icon. No. 20 (CAL).

*Anogeissus bentii* R.T. Baker in Bull. Misc. Inf. Kew 1894 : 332. 1894 & in Hook., Icon. Pl. : t. 2354. 1895; Scott in Kew Bull. 33(4) : 562. 1979, *syn. nov.*

Type : South Yemen, Hadramaut, *Lunt* 189 (BM, K-n.v.; CAL).

The species is scarcely distinct from *A. sericea*, differing only in the glabrous calyx cup. The grounds



We are not sure whether the specimen, *Wight in Wallich* Cat. No. 4014 B (K, photo in CAL!), as cited by Scott (1979), represents the type of *Conocarpus acuminata*.

Indian Botanic Garden, Howrah at the bank of river Ganges.

### Key to the varieties

- 1a. Calyx entirely glabrous ..... 2  
 1b. Calyx tube including ovary pubescent ..... 3  
 2a. Leaves obovate or elliptic-obovate ..... b. var. *fischeri*  
 2b. Leaves narrowly lanceolate ..... c. var. *phillyreifolia*  
 3a. Calyx tube including ovary tomentose ..... a. var. *acuminata*  
 3b. Calyx tube including ovary sparsely pubescent ..... c. var. *phillyreifolia*

#### a. var. *acuminata* :

Scott in Kew Bull. 33(4) : 564. 1979; Gang & T. Chakrab., *l.c.* 656. 1993. (Fig.1)

*Andersonia lanceolata* Wall. [Cat. No. 4014. 1831, *nomen*].

*Anogeissus myrifolia* Buch.-Ham. [in Wall. Cat. No. 4017. 1831, *nomen*].

*A. hirta* Wall. [Cat. No. 4016. 1831, *nomen*].

*Conocarpus hirtus* Wall. [Cat. No. 4016. 1831, *nomen*].

*C. lanceolata* Wall. [Cat. No. 4014 E. 1831, *nomen*].

*Anogeissus pendula* Edgew., Cat. Pl. Banda : 47. 1851 & in J. As. Soc. Bengal 21 : 171. 1853; Clarke in Fl. Brit. India 2 : 451. 1878; Cooke, Fl. Pres. Bombay 1(3) : 483. 1903; Duthie, Fl. U. Gang. Pl. 1 : 339. 1903; Brandis, Ind. Trees : 315. 1906; Scott, *l.c.* 562. 1979; Pandey in Fl. Rajasthan 1 : 313. 1987.

*Type* : India, Bundelkhand, Sehonda hills, Apr. 1847, Edgeworth s.n. (K, photo in CAL!).

*A. acuminata* var. *genuina* Kurz, For. Fl. Brit. Burma 1 : 446. 1877 & in J. As. Soc. Bengal 46 : 58. 1877.

*A. acuminata* var. *lanceolata* Clarke, *l.c.* 451. 1878.

*Type* : Myanmar, Taong Dong, 1849, Wallich 4014 F (K, photo in CAL!) & Herb. Madras, Wallich 4014 F (K, photo in CAL!).

Shrub or tree, 2-20 (-30) m high; bark grey, whitish or dark brown to blackish; branchlets blackish, brown or coppery, 1-7 mm thick, terete, minutely grey-pubescent to glabrous. *Leaves* opposite to subopposite, elliptic to oblong-elliptic or narrowly so or ovate, wide elliptic to suborbicular or obovate to oblanceolate, 2-8(-10) x 1-3(-4) cm, acute to obtuse or subcuneate and sometimes decurrent at base, acute, obtuse or mucronate or sometimes shortly acuminate at apex, thinly coriaceous, sparsely adpressed greyish-pilose (often only on midrib) to glabrous above, sparsely to densely adpressed whitish- or greyish- or tawny pilose or sericeous or tomentellous or glabrous beneath (hairs 0.5-2 mm long), green or black-brown or dark brown above when dry, paler beneath; lateral nerves 4-8 pairs, obscure to faint above, faint to distinct beneath, ascending, arcuate or + straight; tertiary nerves inconspicuous above, obscure to faint beneath, scalariform to reticulate; petioles 1-8 mm long, 0.2-0.5 mm thick, grey or tawny-puberulous or sericeous or occasionally glabrous. *Inflorescences* : heads (10-20 mm diam.) axillary and terminal, solitary or occasionally in pairs; peduncles 5-20(-30) mm long, greyish- or tawny- or ferruginous-puberulous to tomentellous; bracts on peduncles 1-2 pairs, subfoliaceous, ovate to lanceolate or oblanceolate, 3-10 mm long, subsistent; bracteoles spatulate or ovate-elliptic, 1-2 mm long. *Flowers* : yellow; calyx tube (including ovary) 1.5-4 mm long, tawny- or ferruginous- tomentellous; expanded portion cupular or shortly campanulate, 1.5-2 x 2-2.5 mm, glabrous or





**Flowering :** Aug.-Mar.; **fruiting :** Sept.-Apr.

**Local names :** Bengali : *Chakwa*; English : *Button tree*; Gujrati : *Dhav, Dhauktra*; Hindi & Kol : *Gava hesel, Pansia, Dhunkra, Dhav, Kala dhaura*; Kannar : *Pansi*; Marathi : *Kardahi*; Oriya : *Pansi, Pasi*; Rajasthan : *Dhauria, Dhauktra, Dhav, Kala dhaura*; Tamil : *Nunnera*; Telugu : *Buckakaram, Panchman, Pansi*.

**Uses :** The timber is used for many purposes like construction of house and making agricultural implements, furniture, rafters, poles, shuttles and bobbins, shaft, carts, railway sleeper etc. The wood pulp is also used for making paper. The bark and leaves are used for tanning. The leaves yield a green dye. 'Ghatti' or Indian gum is obtained from the plant.

**Distribution :** India, Bangladesh, Myanmar, Thailand, Cambodia, Laos, Vietnam (Map 1).

**Ecology :** *South India :* Scarce (common in some areas) in deciduous forests, frequently along river banks (sometimes cultivated) up to 300 m altitude. *NW. India :* Common in mixed or dry deciduous forests on sandy loam or rocky soil up to 700 m altitude. *Central & E., India :* Scattered in hill forests or deciduous forests or along river banks up to 650 m altitude. *NE. India :* Between 600-1300 m altitudes. *Myanmar :* Up to 1300 m altitude.

**Representative specimens :** BANGLADESH. Chittagong dist., *Lister* 292 (CAL), *B. Khan* 409 (CAL), *Clarke* 19807 F (CAL), *Mukerjee* 239 (CAL). INDIA. HBC, *Deb Burman* 1574 (CAL). NW. India, *Royle s.n.*, acc. no. 164376 (CAL). Assam : Cachar dist., *Kanjilal* 4902 (CAL). Andhra Pradesh : Polavaram, *Raju* 57 (CAL). Godavari dist., *Gamble* 15989 (CAL). Bihar : Singhbhum dist., *Haines* 13 & 135 (CAL). Chotanagpur, *Gamble* 9086 (CAL). Madhya Pradesh : Bastar dist., *Balakrishnan & Henry* 12099 (CAL, MH); Gwalior dist., *Maries* 48 (CAL); Rewa dist., *Panigrahi* 5528 (CAL); Satna dist., *Mangain* 20752 (BSA), *Prasad* 31778 (BSA, CAL); Saugar dist., *Balakrishnan* 11465 (CAL, MH). Mizoram : S. Lushai hills, *Gage* 109 (CAL). Orissa : Ganjam dist., *Barber* 1478 (PCM), *Gamble* 13760

(CAL), *Ramani* 888 (PCM). Tripura : Manipal, *Datta* 5100 (CAL). West Bengal : Burdwan dist., *A.K. Dutta* s.n. (CAL). MYANMAR. Magur dist., *Blanford* 15 (CAL); Pegu dist., *Lace* 6100 (CAL), *Kurz* 1911 (CAL); Ruby mines dist., *A. Huk* 55 (CAL); S. Shan States, Keng Tung, *Mac Gregor* 1308 (CAL); Sagaing, *Khalil s.n.*, acc. no. 164334 (CAL). Tenasserim : *Gallathy* 459 (CAL).

b. var. *fischeri* (Gang. & T. Chakrab.) Gang. & T. Chakrab. in *J. Econ. Tax. Bot.* 17(3) : 656. 1993.

*Anogeissus fischeri* Gang. & T. Chakrab. in *J. Econ. Tax. Bot.* 13(3) : 685, f. 1. 1989.

**Type :** India, Tamil Nadu, Tirunelveli dist., Vallanad R.F., 14. 2. 1916, *Fischer s.n.*, acc. no. 164381 (CAL-Holotype).

Shrub or tree (stature unknown); branchlets slender, initially rufous-pubescent, finally glabrous. **Leaves :** subopposite to alternate, obovate to elliptic-obovate, 1-3.5 x 0.5-2 cm, acute or cuneate at base, acute or mucronulate at apex, thinly coriaceous, sericeous; lateral nerves 3-5 pairs, faint above, prominent beneath, arcuate; nervules inconspicuous; petioles 4-6 mm long, sericeous. **Inflorescences :** heads (8-15 mm diam.) axillary, solitary; peduncles 10-20 mm long, sericeous; bracts ovate to linear, 2-5 mm long; bracteoles ovate. **Flowers :** externally glabrous; calyx tube (including ovary) 4-5 mm long; expanded portion cupular, 1.5-2 x 2.5-3 mm; teeth 5, triangular, ca 0.5 mm long, acute; stamens 5 + 5, 3-4 mm long; anthers oblong to ovoid, ca 0.5 mm long; style ca 2 mm long; stigma subcapitate. **Fruits :** suborbicular in outline, 4.5-5 x 6-7 mm (excluding beak), glabrous, glossy, brown beak 2-3 mm long, glabrous; wings thin, entire; seeds ellipsoid-obovoid, ca 3 x 2 mm; embryo ca 1 mm long; axis minute; cotyledons oblong, obtuse.

**Flowering & fruiting :** Jan.-Feb.

**Distribution :** S. India (Tamil Nadu) - Endemic (Map 1).

**Representative specimen :** INDIA, Tamil Nadu, Tirunelveli dist., *Fischer s.n.*, acc. no. 164380 (CAL-Paratype).

c. var. *phillyreifolia* (Heurck & Muell.-Arg.) Kurz.



For. Fl. Brit. Burma 1 : 466. 1877 & in J. As. Soc. Bengal 46 : 58. 1877; Scott in Kew Bull. 33(4) : 565. 1979; Gang. & T. Chakrab. in J. Econ. Tax. Bot. 17(3) : 656. 1993. (Fig. 2)

*Anogeissus phillyreifolia* Heurck & Muell.-Arg. in Heurck, Obs. Bot. : 209. 1871; Clarke in Fl. Brit. India 2 : 451. 1878; Coll. & Hemsl. in J. Linn. Soc. 28 : 58. 1889; Brandis in Ind. For. 25 : 287. 1899.

Type : Myanmar, Wallich 8557 (K-WALL : microfiche!) (vide Scott l.c.).

Tree, up to 15 m high; bark white; branchlets brown, terete, 0.5- 4 mm thick, initially brown tomentellous, soon glabrous. Leaves: subopposite lanceolate to elliptic-lanceolate 3- 7.5 x 0.8-2.5 cm, acute or cuneate at base, acute and mucronulate at apex, thinly coriaceous, glabrous above, adpressed brown sericeous or tomentellous to glabrous beneath, greenish-brown to black-brown above when dry, paler beneath; lateral nerves slender, 4-8 pairs, obscure to faint above, somewhat prominent beneath, arcuate, forming weak loops with the superadjacents; tertiary nerves obscure to faint above, faint to prominent beneath, reticulate. Inflorescences heads (8-12 mm diam.) axillary and terminal, solitary; peduncles 5-20 mm long, brown- tomentellous to sparsely puberulous; bracts obovate or lanceolate, 3-10 x 1-3 mm; bracteoles ovate-elliptic, up to 1 mm long. Flowers : calyx tube (including ovary) 2.5-4 mm long, sparsely ferruginous puberulous to glabrous; expanded portion cupular, ca 1.5 x 2 mm, glabrous; teeth 5, widely triangular to deltoid, 0.5-0.8 mm long; stamens 5 + 5, 1.5-3 mm long; anthers ellipsoid, ca 0.4 mm long; style 1.5-2 mm long. Fruits 4-4.5 x 3.5-5.5 mm (excluding beak), brown, glabrous or puberulous towards apex; beak 2-3.5 mm long, sparsely puberulous; wings entire (Fig. 2).

Flowering : Oct.-Mar.; fruiting : Dec.-May

Local name : Myanmarese : Yon.

Distribution : Myanmar-Endemic (Map 1).

Ecology : Restricted to savannah and swampy areas.

Rogers 197 (CAL). Yemethin dist., Lace 4562 (CAL).

2. *Anogeissus latifolia* (Roxb. ex DC.) Wall. ex Guill. & Perr. Fl. Seneg. Tent. 1 : 280. 1832; Bedd., Fl. Sylv. S. India : t. 15. 1869; Brandis, For. Fl. NW. India : 227. 1874 & Ind. For. 25 : 286. 1899 & Ind. Trees : 315. 1906; Clarke in Fl. Brit. India 2 : 450. 1878, excl. var. *parvifolia*; Cooke, Fl. Pres. Bombay 1(3) : 482. 1903; Prain, Bengal Pl. 1 : 479. 1903; Duthie, Fl. U. Gang. Pl. 1 : 339. 1903; Gamble, Fl. Pres. Madras 3 : 466. 1919; Haines, Bot. Bihar & Orissa 3 : 355. 1922; Kirtikar & Basu, Ind. Med. Pl. ed. 2 : 1034, t. 418. 1935; Gandhi in Fl. Hassan : 292. 1976; Scott in Kew Bull. 33(4) : 560. 1979; Whitmore in Enum. Fl. Pl. Nepal 2 : 167. 1979; Matthew & Britto, Fl. Tamil Nadu Carnatic 3(1) : 575. 1983; Pandey in Fl. Rajasthan 1 : 313. 1987; Gang. & T. Chakrab. in J. Econ. Tax. Bot. 17(3) : 656. 1993.

*Conocarpus latifolia* Roxb. [Hort. Beng. : 34. 1814, nomen] ex DC., Prodr. 3 : 17. 1828 & Mem. Combret. : 25. 1828; Roxb., Fl. Ind. 2 : 442. 1832; G. Don, Gen. Hist. 2 : 661. 1832; Wight & Arn., Prodr. : 316. 1834; Wight, Icon. Pl. Ind. Or. : t. 994. 1845; Miq., Fl. Ind. Bat. 1(1) : 605. 1855; Thw., Enum. Pl. Zeyl. 2 : 103. 1859; Dalz. & Gibs., Bombay Fl. : 91. 1861.

Type : HBC, Roxburgh - n.v. Roxburgh, Icon. No. 19 (CAL).

*Anogeissus latifolia* var. *glabra* Clarke, l.c. 450. 1878, e descr.

Type : n.v.

*A. latifolia* var. *villosa* Clarke, l.c. 450. 1878; Gamble, l.c. 466. 1919, e descr.

Type : India, Mysore, Clarke 11271 (K) - n.v.

*A. latifolia* var. *tomentosa* Haines, For. Fl. Chotanagpur : 364. 1910 & Bot. Bihar & Orissa 3 : 355. 1922, e descr.

Type : India, Bihar, Haines 823 (K-Lectotype)-



(CAL); *Sebastine* 4377 & 6989 (CAL, MH). West Bengal : Burdwan dist., *Mukherjee* 8665, 10538 & 18757 (CAL); Purulia dist., *Malick* 910 & 944 (CAL). NEPAL. Way to Barakshetra. *C.R. Rao* 56 & 66 (CAL). SRI LANKA. Central Prov., *Thwaites* CP 1220 (CAL); Uva Prov., *Cramer* 4489 (CAL).

We are not sure whether the material, *Wight in Wallich* 4015 B (K & BM - n.v.), cited by Scott (1979) represents the type material.

The species is variable in its foliage and indument. It can be distinguished from all others in the area by the heads of inflorescences being arranged in racemiform pattern.

The following material represents a hybrid with *A. acuminata* : India, Madhya Pradesh, Dolhan Chawki, 10. 10. 1980, *Ramlal* 31092 (BSA).

#### Key to the varieties

- 1a. Leaves (1.5-)2-5.5 cm long; bracts (3-)6-15 mm long, somewhat persistent ..... a. var. *sericea*  
 1b. Leaves 0.8-2 cm long; bracts 2-5 mm long, deciduous ..... b. var. *nummularia*

#### a. var. *sericea*

(Fig. 3)

Tree, up to 10 m high; branchlets brown to greyish, terete, 1-8 mm thick, initially tawny-tomentellous, finally glabrous. *Leaves* : opposite to alternate, broadly elliptic to orbicular or obovate or sometimes ovate, 1.5-7 x 1-3.5 cm, rounded, obtuse to acute at base, acute, obtuse to rounded and mostly mucronulate at apex, thinly coriaceous, densely sericeous when young, sparsely pilose to tomentellous or glabrous above when mature, scattered yellowish- or tawny- or grey-pilose to sericeous or tomentellous beneath, pale brown to black above when dry, paler beneath; lateral nerves 4-6 pairs, obscure to faint above, somewhat prominent beneath, ascending, arcuate; tertiary nerves obscure above, inconspicuous to faint beneath, scalariform; petioles 1-5 mm long, 0.5-1 mm thick, tomentellous. *Inflorescences* : heads (10-20 mm diam.) axillary and terminal, solitary, peduncles 5-15(-25) mm long, tomentellous; bracts on peduncles 2 pairs, subopposite, obovate or lanceolate,

long; anthers oblong, 0.5-0.8 mm long; style 2-3 mm long. *Fruits* : suborbicular in outline, 3.5-4.5 x 5.5-6.5 mm (excluding beak), brown, puberulous; beak 3-5 mm long, pubescent; wings undulate towards apex along margins; seeds obovoid, 3-4 x 2-3 mm (Fig. 3).

*Flowering & fruiting* : Mar.-May

*Uses* : Probably the same as *A. acuminata*.

*Chromosome No.* :  $2n = 24$  (Gill *et al* in *Taxon* 28 : 391-408, 1979).

*Distribution* : Central & Western India. - Endemic (Map 1).

*Ecology* : Rare in mixed or dry deciduous forests.

*Representative specimens* : INDIA. Gujrat : Modara, *Sedgwick* 1168 & 1269 (CAL). Madhya Pradesh : Bilaspur dist., *Panigrahi & Arora* 8760 (CAL). Punjab : Dadri, *N.C. Nair* 20509 (BSD). Rajasthan : Mt. Abu, *no coll. s.n.*, acc. nos. 164319-27 (CAL). *India 62101* (RST); *Thwaites* CP 1220 (CAL).

3. *Anogeissus sericea* Brandis in *Ind. For.* 25(7) : 28, 1899 & *Ind. Trees* : 315, 1906; *Cooke*, *Fl. Pres. Bombay* 1(3) : 482, 1903; *Duthie*, *Fl. U. Gang.* Pl 1(1) : 340, 1903; *Scott* in *Kew Bull.* 33(4) : 558, 1979; *Pandey* in *Fl. Rajasthan* 1 : 314, 1987; *Gang.* & *T. Chakrab.* in *J. Econ. Tax. Bot.* 17(3) : 656, 1993.

*Type* : India, Madhya Pradesh, Pachmarhi, 3000 ft., Apr. 1877, *Brandis* 1289 - Sheet No. 1 (K, photo in CAL!); *ibid.*, 3-4000 ft., Apr. 1868, *Brandis s.n.* K - 2 sheets, photo in CAL!; Mandla dist., Nagapahar, *R. Thomson - n.v.*; Garhakota, *Brandis - n.v.*

*A. latifolia* var. *parvifolia* Clarke in *Fl. Brit. India* 2 : 450, 1878 (Based on a description in *Brandis, For. Fl. NW. India* : 228, 1874).





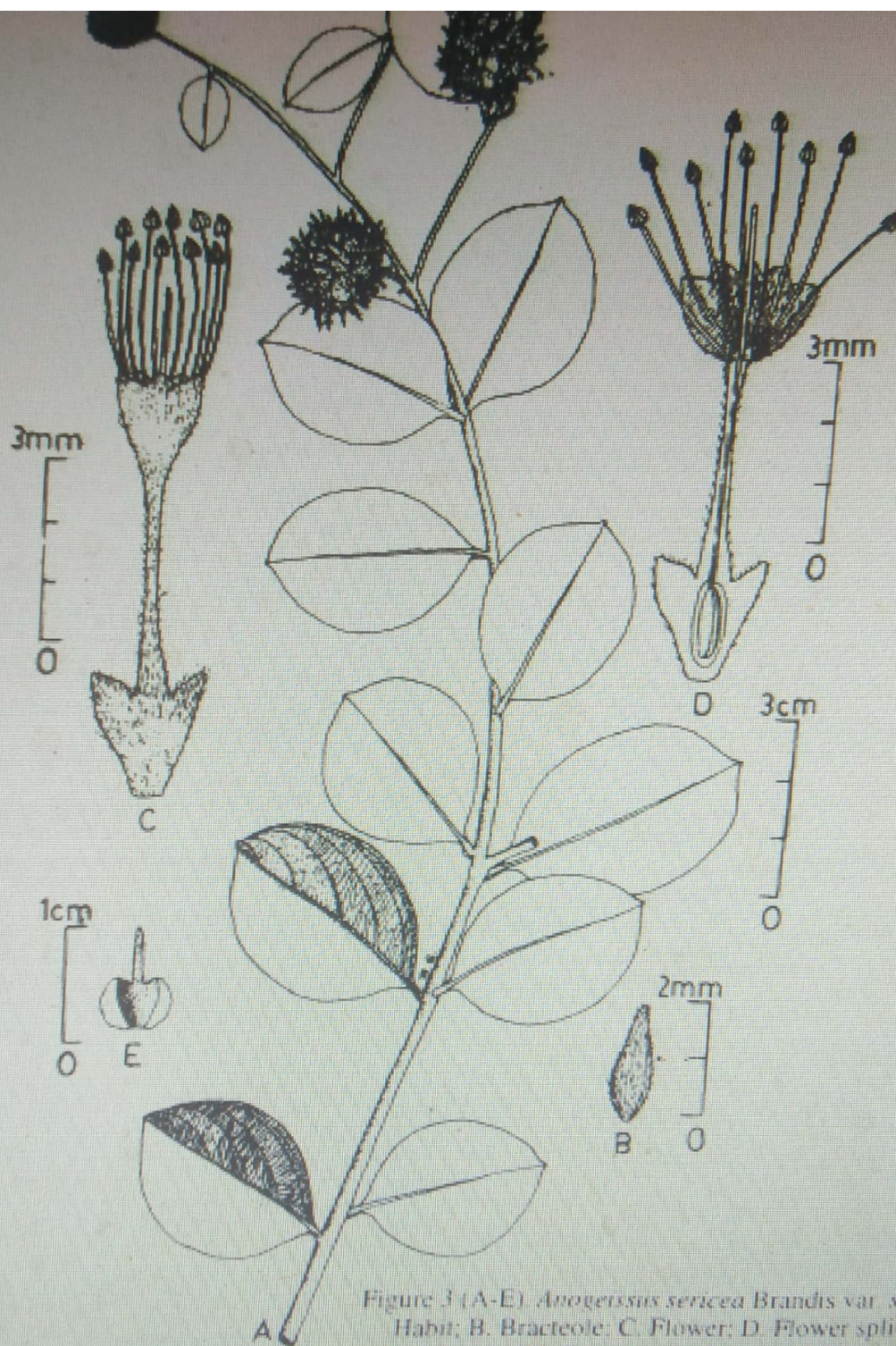


Figure 3 (A-E). *Anogeissus sericea* Brandis var. *sericea* - A. Habit; B. Bracteole; C. Flower; D. Flower split opened; E. Fruit (No Coll. s.n., acc. no. 164324 (CAL))





*Getania floribunda* Roxb., Pl. Corom. 1 : 61, t. 87, 1798 & Fl. Ind. 2 : 428. 1832; Roth, Nov. Sp. Pl. : 216. 1821; DC., Prodr. 3 : 15. 1828; G. Don, Gen. Hist. 2 : 661. 1832; Wight & Arn., Prodr. : 315. 1834; Miq., Fl. Ind. Bat. 1(1) : 605. 1855; Dalz. & Gibs., Bombay Fl. : 91. 1861.

Type : Roxburgh, Pl. Corom. : t. 87 & Icon. No. 140 (CAL).

*G. nitida* Roth, Nov. Sp. Pl. : 217. 1821.

Type : India Orientali, Heyne - n.v.

*G. nutans* Roxb. [Hort. Beng. : 33. 1814, nomen] ex DC., Prodr. 3 : 15. 1828; Roxb., Fl. Ind. 2 : 428. 1832; G. Don, l.c. 661. 1832; Miq., l.c. 605. 1855.

Type : India Orientali, Roxburgh, Icon. No. 2495 (CAL).

*Calycopteris nutans* (Roxb. ex DC.) Kurz in J. As. Soc. Bengal 46 : 59. 1877 & For. Fl. Brit. Burma 1 : 468. 1877.

Branchlets brownish or reddish-brown, terete, 1-5 mm thick, ferruginous or fulvous tomentellous or pubescent, becoming glabrescent. Leaves: ovate to elliptic or narrowly so or often lanceolate, 3-20 x 2-8 cm rounded, obtuse to subacute or subcordate at base, entire long margins, acuminate (acumen 5-15 mm long or acute at apex, chartaceous to thinly coriaceous, scattered white or fulvous hirsute to glabrous above, white or fulvous or ferruginous tomentellous (often adpressed) to scattered hirtellous or pilose or puberulous only on midrib beneath, greenish-brown, coppery, black or black-brown above when dry, greenish to brown or coppery beneath; lateral nerves 5-10 pairs, faint above, prominent beneath, arcuate, anastomosing near margins; tertiary nerves inconspicuous above, faint to prominent beneath, scalariform or sometimes forming reticulations; petioles 2-11 mm long, 1-1.5 mm thick, tomentellous. Inflorescences : terminal, paniculate or rarely simple, 15-30 cm long, fulvous or ferruginous-tomentellous to sparsely puberulous; bracts foliaceous, ovate to ovate-lanceolate, 2-10 x 2-6 mm. Flowers : white, greenish-white or yellowish-green, subsessile;

0.7-1.2 mm long; style ca 5 mm long. Fruits : ellipsoid to oblong-ellipsoid, 8-12 x 2.5-3.5 mm, villos; pedicels up to 2.5 mm long; seeds narrowly ellipsoid, 4-5 x 1.5-2 mm.

Flowering & fruiting : Jan. - May.

Local names : Hindi : Kokaray, Kohranj; Kannar : Biliyadi, Hanjarikuchiu, Kuppasa, Kukadsi, Marasuttuballi, Marasadaboli; Konkani : Upshi; Malayalam : Varavalli; Marathi : Ukshi; Myanmarese : Tabu-neue, Nabu, Kyutnenway, Nahumue; Oriya : Kukundia, Dhonoti; Sanskrit : Shveta dhataki; Tamil : Minnargodi, Pillani; Telugu : Adivijama, Bandimurugudu, Gaddapulike, Kalikatige, Kattavedala, Murugudutige, Pippindatige, Tellavadala.

Uses : The leaves are bitter and astringent and used as laxative and anthelmintic and also said to cure dysentery and malaria. These are crushed and applied externally on ulcers. The leaves are also employed as fish-poison. The fruits are used in jaundice. The stem contains a large quantity of water which is taken in thirst during emergency.

Chromosome No. : 2n = 28 (Gajapathy in Curr. Sci. 31 : 115-117. 1962).

Distribution : India, Bangladesh, Myanmar, Indo-China, Thailand, Malay Peninsula.

Ecology : One of the commonest climbers on hill slopes or in mixed forests or scrub, frequently along river banks, up to 1000 m altitude.

Representative specimens : BANGLADESH. Chittagong dist., Gage 13 (CAL). GAMBLE 7963 (CAL). INDIA. Penins. Ind. Or., Wight KD 1002 (CAL). Andaman & Nicobar Is. : South Andaman Is., King's coll. s.n., acc. no. 164187 (CAL). Andhra Pradesh : Cuddapah dist., Beddome s.n., acc. nos. 40341-2 (MH); Visakhapatnam dist., Barber 1944 (PCM); Gamble 14021 (CAL), Raju 2 (CAL). Karnataka : Dharwar dist., Sedgwick 2402 (PCM); Hassan dist., Ramanoorthy 1496 (CAL); N. Kanara dist., Talbot 76 (CAL); Shimoga dist., Ramesh et al 5633 (CAL). Kerala : Palghat dist., Yajravelu 60554 (MH); Trivandrum dist., A. Kumar 16247 (CAL).







Figure 1 (A-E). *Anogeissus acuminata* (Roxb. ex DC.) Guill. & Perr.  
 var. *acuminata*  
 A. Habit, B. Flower; C. Flower split opened; D. Fruit; E. Seed  
 [Shetty 1814 (CAL)].