

FLORA OF BANGLADESH

NO. 68

ALANGIACEAE

EDITORS

HOSNE ARA

And

SARDER NASIR UDDIN

June 2017

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And

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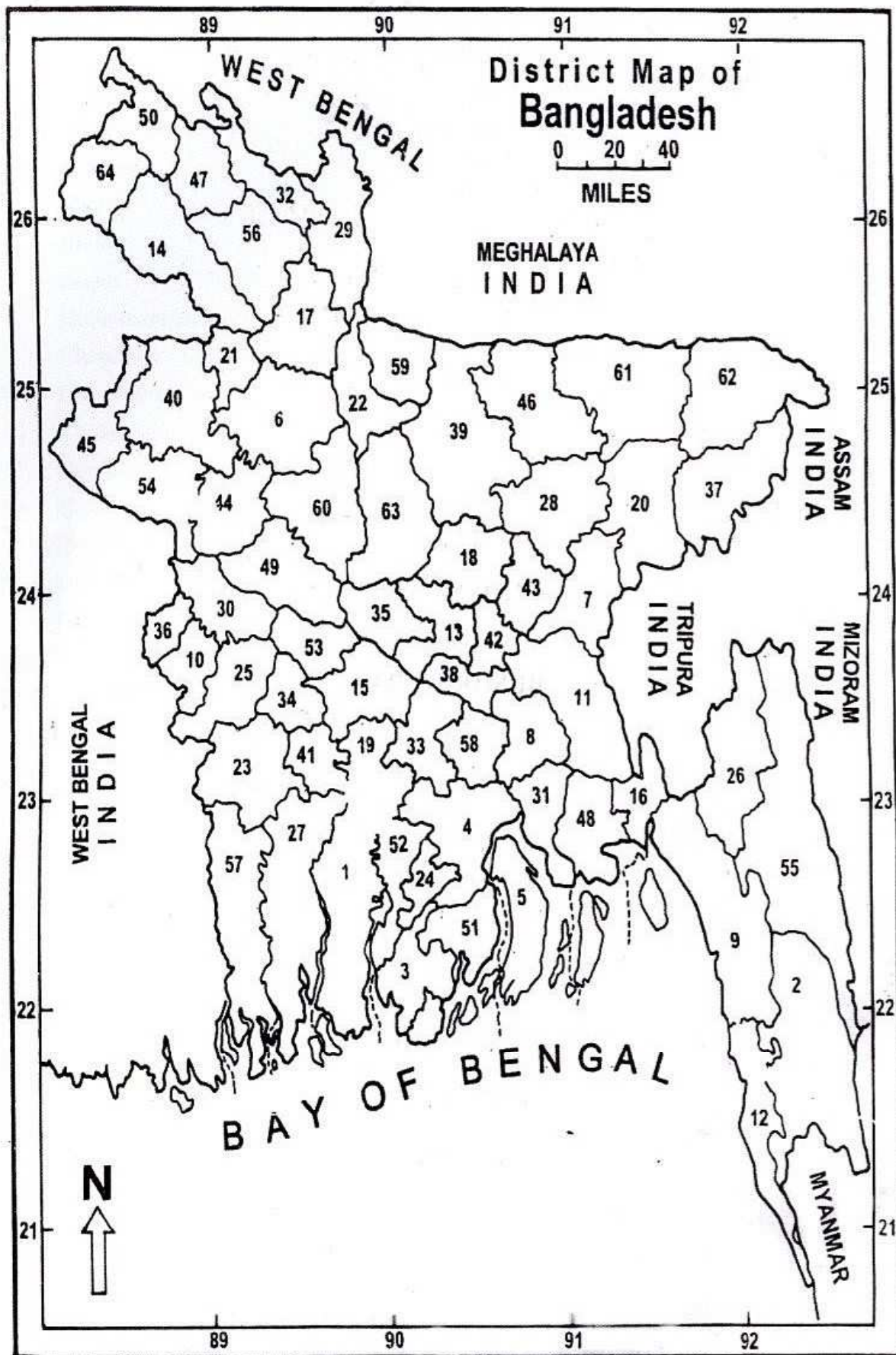
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List of Districts

The serial numbers correspond to those given in the map.

- | | |
|------------------|------------------|
| 1. Bagerhat | 33. Madaripur |
| 2. Bandarban | 34. Magura |
| 3. Barguna | 35. Manikganj |
| 4. Barisal | 36. Meherpur |
| 5. Bhola | 37. Maulvi Bazar |
| 6. Bogra | 38. Munshiganj |
| 7. Brahamanbaria | 39. Mymensingh |
| 8. Chandpur | 40. Naogaon |
| 9. Chittagong | 41. Narail |
| 10. Chuadanga | 42. Narayanganj |
| 11. Comilla | 43. Narsingdi |
| 12. Cox's Bazar | 44. Natore |
| 13. Dhaka | 45. Nawabganj |
| 14. Dinajpur | 46. Netrakona |
| 15. Faridpur | 47. Nilphamari |
| 16. Feni | 48. Noakhali |
| 17. Gaibandha | 49. Pabna |
| 18. Gazipur | 50. Panchagarh |
| 19. Gopalganj | 51. Patuakhali |
| 20. Habiganj | 52. Pirojpur |
| 21. Jaipurhat | 53. Rajbari |
| 22. Jamalpur | 54. Rajshahi |
| 23. Jessore | 55. Rangamati |
| 24. Jhalakati | 56. Rangpur |
| 25. Jhenaidaha | 57. Satkhira |
| 26. Khagrachhari | 58. Shariatpur |
| 27. Khulna | 59. Sherpur |
| 28. Kishoreganj | 60. Sirajganj |
| 29. Kurigram | 61. Sunamganj |
| 30. Kushtia | 62. Sylhet |
| 31. Lakshmipur | 63. Tangail |
| 32. Lalmonirhat | 64. Thakurgaon |

ALANGIACEAE A.P. de Candolle (1828)

Hosne Ara¹ and Md. Abul Hassan²

Trees or less often shrubs or woody vines. Leaves simple, alternate, exstipulate, entire or lobed. Inflorescence cymose, axillary. Flowers usually bisexual, rarely unisexual, epigynous. Calyx with 4-10 lobes or obsolete. Corolla with 4-10 petals, petals broadly linear, valvate, sometimes connate at the base, reflexed after anthesis. Stamens as many as or 2-4 times as many as the petals, filaments hairy, free or slightly connate at the base, anthers opening by longitudinal slits. Carpels 1-3, united to form a compound bilocular or unilocular ovary, style terminal, stigma capitate, clavate or lobed, ovule solitary and pendulous in each locule, sometimes one locule empty. Fruit a drupe, crowned by the sepals. Seeds with large, embryo straight, endosperm copious.

The family Alangiaceae consists of the single genus *Alangium*, with about 20 species, native to eastern and tropical Asia, eastern Australia, the Pacific Island, Madagascar and western Africa (Cronquist, 1981). In Bangladesh, it is represented by 3 species.

References cited in the text

- Cronquist, A. 1981. *An Integrated System of classification of Flowering Plants*. Columbia University Press, New York. 1262 pp.
- Ghani, A. 2003. *Medicinal Plants of Bangladesh (Second Edition)*. Asiatic Society of Bangladesh, Dhaka, Bangladesh. 603 pp.
- Hassan, M.A. 2008. *Alangiaceae*. In: Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., and Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A., Haque, E.U. (eds.). *Encyclopedia of Flora and Fauna of Bangladesh*, Vol. 6. *Angiosperms: Dicotyledons (Acanthaceae-Asteraceae)*. Asiatic Society of Bangladesh, Dhaka. pp. 78-80.
- Kumar, V. and Subramaniam, B. 1986. *Chromosome Atlas of Flowering Plants of the Indian Subcontinent*, Vol. 1. Dicotyledons. Botanical Survey of India, Calcutta, India, pp. 1-464.
- Kirtikar, K.R., Basu, B.D. and An ICS. 1935 (Second edition). *Indian Medicinal Plants*, Vol. 2 (Ind. Repr. 1993). Bishen Singh Mahendra Pal Singh, Dehra Dun, India. pp. 1236-1239.

Abbreviations used for the herbaria (other than the recognized acronyms)

DUSH= Dhaka University Salar Khan Herbarium

¹ Bangladesh National Herbarium, Mirpur-1, Dhaka-1216.

² Department of Botany, University of Dhaka. Dhaka-1000.

Alangium Lamk., Encycl. Meth. Bot. 1: 174 (1783).

Type species: *A. decapetalum* Lamarck

Small trees, shrubs or climbers, armed or not. Leaves simple, alternate, petiolate, oblong or ovate, entire. Inflorescence in axillary fascicles or condensed cymes. Flowers pedicellate, bisexual (rarely unisexual), white. Calyx of 4-10 sepals, connate in a calyx tube, adnate to the ovary, lobes toothed or truncate. Corolla of 4-10 petals, petals linear, oblong, valvate in bud and reflexed after anthesis. Stamens as many as or twice as many as the petals or even more, filaments hairy, anthers much elongated, opening by longitudinal slits. Carpels 1-3, united into an inferior unilocular or bilocular ovary, style long, stigma capitate or rarely lobed, ovule solitary, pendulous. Fruit a 1-seeded berry. Seed oblong.

KEY TO THE SPECIES

- | | |
|--|---------------------|
| 1. Stamens not more than 10..... | 2 |
| - Stamens not less than 10..... | salviifolium |
| 2. Leaf blade broadly elliptic or ovate-oblong | barbatum |
| - Leaf blade ovate or orbicular to cordate | chinense |

Alangium barbatum (R. Br. ex C.B. Clarke) Baill. ex Kuntze, Revis. Gen. Pl. 1: 273 (1891). Haining & Phengklai (eds.), Fl. China 13: 305 (2000); Hassan in Ahmed *et al.* (eds.), Encycl. Fl. Fauna Bangladesh 6: 79 (2008); Karthikeyan *et al.*, Fl. Pl. India Dicot. 1: 67 (2009); Barbhuiya & Gogoi, Bangladesh J. Plant Taxon. 17 (2): 141-165 (2010); *Marlea barbata* R.Br. ex C.B. Clarke in Hook. f., Fl. Brit. India 2: 743 (1879-reprint 1961); *Karangolum barbatum* (R.Br. ex C.B. Clarke) Kuntze, Revis. Gen. Pl. 1: 272 (1891). Pl. 1.

A shrub or small tree, 3-6 m tall, branchlets with soft spreading hairs. Leaves simple, alternate, petiolate, broadly elliptic or ovate-oblong, 10-15 × 5-8 cm, both surfaces pubescent, base cordate or rounded, margin entire, rarely lobed or toothed, apex acute to acuminate. Inflorescence a many-flowered cyme, with spreading golden hairs. Flowers epigynous. Peduncles 3-10 mm. Pedicels 2-10 mm. Calyx tube shaggy, teeth lanceolate. Petals 5-6, 6-10 mm, hairy on the outer surface, inside glabrous. Stamens 5-7; anthers with soft hairs inside, filaments hairy. Carpels 1-3, united into an inferior ovary, style 4-8 mm long, glabrous; stigma subclavate, ovule 1 per locule. Fruit a berry, deeply grooved, 1-seeded, bluish when ripe. *Fl.*: 6-8 & *Fr.*: 10-3. *Deciduous forests.*

Sylhet: Longai Reserve, 24 xii 1941, *U.N. Kanjilal* 4921 (Assam).

Bhutan and India (Assam region).

Alangium chinense (Lour.) Harms, Ber. Deutsch. Bot. Ges. 15: 24 (1897). Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1&2): 50 (1953); Haining & Phengklai (eds.), Fl. China 13: 205 (2000); Karthikeyan *et al.*, Fl. Pl. India Dicot. 1: 67 (2000); Hassan in Ahmed. *et al.* (eds.), Encycl. Fl. Fauna Bangladesh 6: 79-80 (2008); Maity *et al.*, Fl. Kanchen. Bio. Reser. Sikkim: 43 (2018); *Stylidium chinense* Lour., Fl. Cochinch. 221 (1790); *Marlea begoniifolia* Roxb., Pl. Coromandel 3: 80 (1820); Clarke in Fl. Brit. India 2: 743 (1879-reprint 1961); Prain, Beng. Pl. 1: 546 (1903-reprint 2004); Haines, Bot. Bihar & Orissa 3: 418 (1922-reprint 1978); Fischer in Gamble, Fl. Pres. Madras 1: 404 (1935- Reprint 1967); Ghafoor in Nasir & Ali (eds.), Fl. W. Pakistan 50: 1-3 (1973); Hara in Enum. Fl. Pl. Nepal 2: 194 (1979), Pl. II.

Bengali: *Marleza Goachh*

English: Marlia

A small-sized deciduous tree with grey bark. Leaves simple, alternate, petiolate, ovate or orbicular to-cordate, 8-20 × 5-12 cm, abaxially tufted pubescent at axils of veins, adaxially glabrous, base usually oblique, occasionally rounded or subrounded, or triangular, margin entire or with few shallow lobes, apex acuminate. Inflorescence of axillary cymes. Flowers white, epigynous, 2 cm. Sepals 7-8, free or somewhat connate at the base. Petals 7-8, 1.0-1.5 cm long, linear, free or connate at the base, narrow, valvate. Stamens 7-8, slightly adnate at the base of the petals, anthers linear. Carpels 1-3, united into a 1-3 loculed ovary, ovule one in each locule, style long, stigma slightly lobed. Fruit a 1-2 seeded berry, 5-7 mm. Seeds oblong, compressed. *Fl. & Fr.*: 4-10. *Plain lands and hill forests*. $2n = 66$ (Kumar and Subramaniam, 1986).

Jhenaidaha: Kaliganj thana, Smitalla-Mullickpur, 26 iii 1998, *Khan, Rahman & Mia* K. 9931 (DACB). **Moulvibazar**: Baralekha, Madhabkundu, 9 v 1997, *Huq & Mia* H. 10519 (DACB); Lawachara forest, Sreemongal, 11 v 2009, *Sarder Nasir Uddin* N. 3592 (DACB); Adampur, Rajkandi Range, Kamalganj, 12 ix 2012, *Sarder Nasir Uddin* N. 5029 (DACB); Madhabkundu eco-park, 20 v 2014, *Sarder Nasir Uddin* N. 5272 (DACB).

Tropical Africa, India, Nepal, Bhutan, eastern China, Myanmar and Malaysia.

Foliage used as fodder, timber is also sometimes used (Hassan, 2008).

Alangium salviifolium (L.f.) Wangerin in Engler, Pflanzenr. IV, 220b (Heft 41): 9 (1910). Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1&2): 50 (1953); Mukerjee, Bull. Bot. Surv. India 10: 330 (1969); Bennet, Fl. Howrah Dist.: 259-260 (1979); Bakshi, Fl. Murshidabad Dist.: 137 (1984); Haining & Phengkhai (eds.), Fl. China 13: 307-308 (2000); Sarma & Sarkar in Singh & Rao (eds.), Fl. Palamau Dist. Jharkhand: 296-297 (2002); Hassan in Ahmed *et al.* (eds.), Encycl. Fl. Fauna Bangladesh 6: 80 (2008); Karthikeyan, *et al.*, Fl. Pl. India Dicot. 1: 67 (2009); *Grewia salvifolia* L.f. Suppl. Pl. 409 (1782); *Alangium decapetalum* Lamk., Encycl. 1: 174 (1783); *Alangium lamarckii* Thwaites, Enum. Pl. Zeyl. 133 (1859); Clarke in Hook. f., Fl. Brit. India 2: 741 (1879-reprint 1961); Prain, Beng. Pl. 1: 545 (1903-reprint 2004); Haines, Bot. Bihar & Orissa 3: 418 (1922-reprint 1978); Fischer in Gamble, Fl. Pres. Madras 1: 404 (1935-reprint 1967); Hara in Enum. Fl. Pl. Nepal 2: 194 (1979). Pl.:III.

Bengali: *Ankora, Akarkanta*

English: Sage-leaved Alangium

A small to medium-sized tree, branchlets adpressed-tomentose, sometimes spine-tipped. Leaves simple, 8-18 × 2.3-7.0 cm, short petioled, oblong to oblong-lanceolate, sub-coriaceous, 3-5 nerved from the base. Inflorescence in axillary cymose clusters. Flowers c 1.5 cm wide, pedicellate, 2-8 mm, bisexual, epigynous, white, sweet-scented. Calyx of 5-10 sepals, connate at the base, forming a cupular tube, adnate to the ovary, tomentose, triangular-ovate. Corolla of 5-10 petals, petals 2.5 × 0.2 cm, linear-oblong, reflexed after anthesis, disk prominent. Stamens 10-30, filaments 1 cm long, base villous, connate, anthers 1 cm long, opening by longitudinal slits. Ovary inferior, unilocular, ovule 1, pendulous, style long, 8-24 mm, stigma capitate. Fruit a 1-seeded berry, globose, 9-24 × 6-16 mm, red or black when ripe. Seed ovoid. *Fl. & Fr.*: 2-5. *Plains and deciduous forests*. $2n = 22$ (Kumar and Subramaniam, 1986).

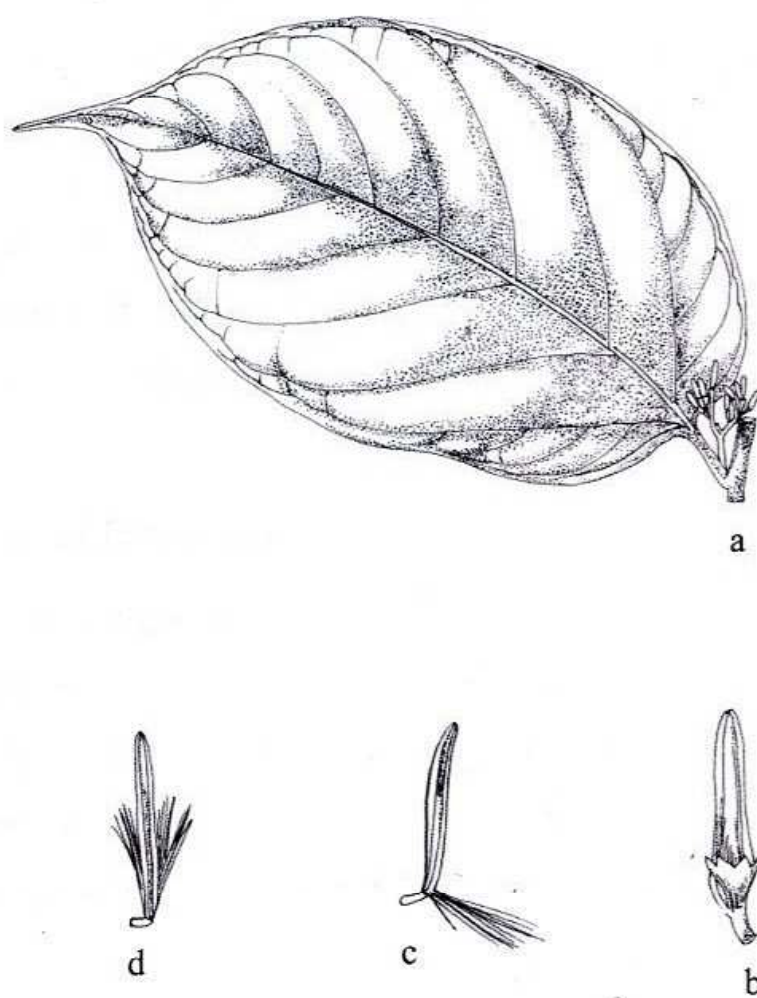
Dhaka: Dhaka University (Curzon Hall), 20 iii 1940, *Atul K. Acharjee* (DUSH); 29 ii 1946, *Sukdes* (DUSH); Biochemistry garden, Dhaka University, 03 ii 1964, *A.F. Muhammad* 112 (DUSH); Ramna, 20 ii 1964, *Din Mohammad* 256 (DUSH); Rajandrapur, 10 ii 1968, *N. Begum* 108 (DUSH); Zingira, 27 iv 1968, *Paritosh* 80 (DUSH); 28 iv 1968, *Amalendu* 106 (DUSH); Tejgaon, 16 vi 1968, *N. Begum* 186 (DUSH); Engineering college, 12 iii 1969, *Hoor Jahan* (DUSH); Savar, 07 iii 1970, *M.A. Rahman* 7 (DUSH); Joydebpur, 12 iv 1970, *Nazim* 62 (DUSH); 05 iv 1970, *Nazim* 108 (DUSH); 26 iv 1970, *Momtaz* 57 (DUSH); near medical college, 2 iv 1973, *A.M. Huq* 894 (DACB); Ramna park, 31 iii 1982, *Huq & Zaman* H. 5531 (DACB); near Chandra forest, 11 v 1997, *Huq & Khan* 10527 (DACB); near Atomic Energy Commission, 20 ix 1998, *Ali Hossain* (DACB). **Jessore:** Magura, 5 xi 1976, *Huq & Mia* H. 1943 (DACB). **Rajshahi:** Taherpur, 8 ii 1973, *A.M. Huq* 846 (DACB); Rohanpur, 10 vi 1975, *A.M. Huq* 1142 (DACB). **Tangail:** Tangail town area, 10 v 1997, *Bushra Khan* 17 (DACB); Madhupur forest, 6 v 2002, *Ali Hossain* (DACB).

Africa, India, Sri Lanka, China, Thailand, the Philippines and Malaysia.

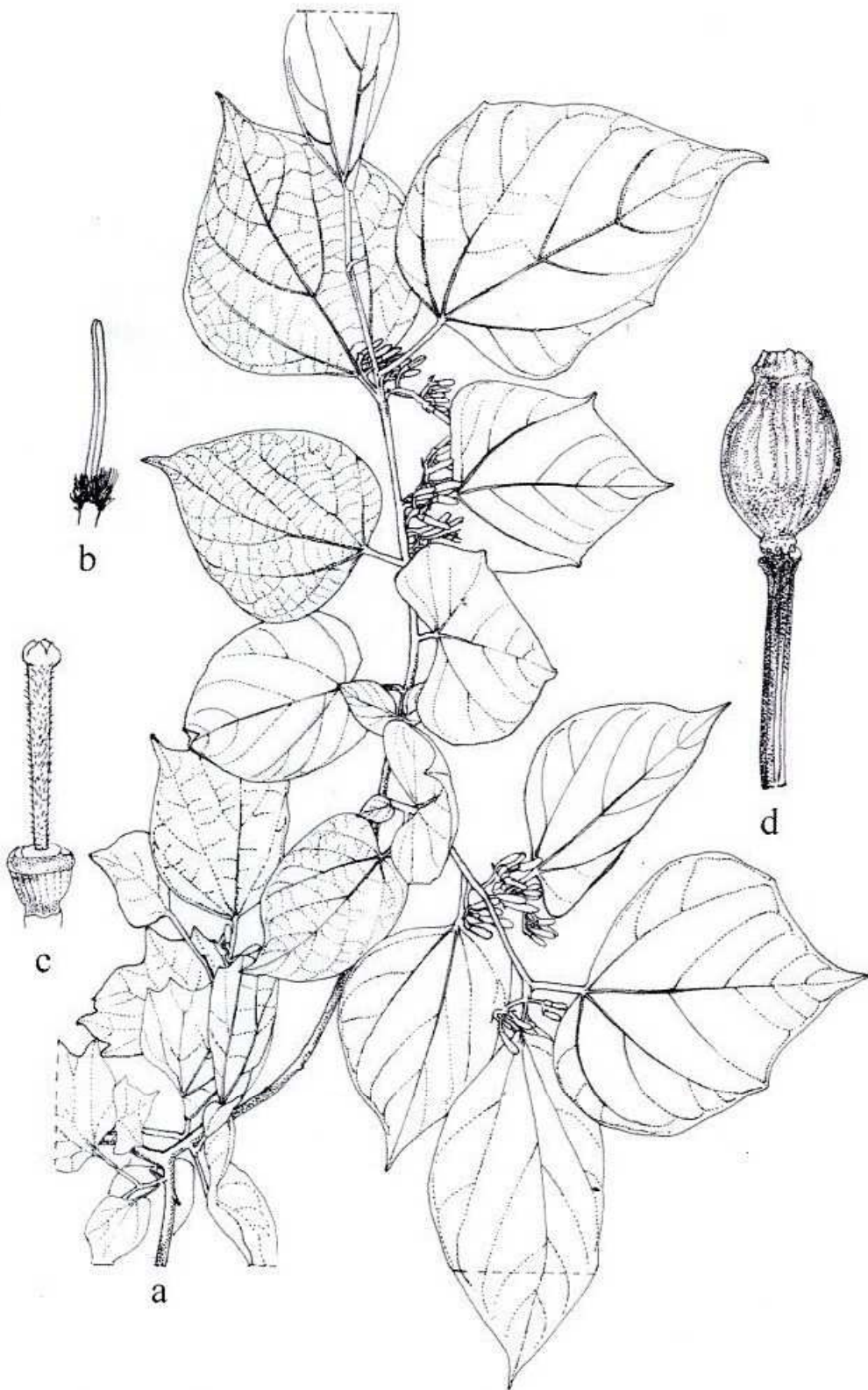
The root is acrid, bitter, anthelmintic, alterative, it cures erysipelas, biliousness and inflammations. The juice is emetic, alexipheric. The fruit is sweet, laxative, expectorant, carminative and anthelmintic. The stem bark is very bitter which is a good substitute for Ipecacuanha (Kirtikar *et al.*, 1935). The leaves, roots and seeds contain the alkaloids ankorine, marckidine, marckine, tubulosine, alangicine, cephaeline, psychotrine etc. and steroids and triterpenoids (Ghani, 2003).

In Bombay, the leaves are used as a poultice to relieve rheumatic pains. The *Munda* ethnic people of Chota Nagpur in India use the root as a purgative in dyspepsia and in gout (Kirtikar *et al.*, 1935).

PL. I

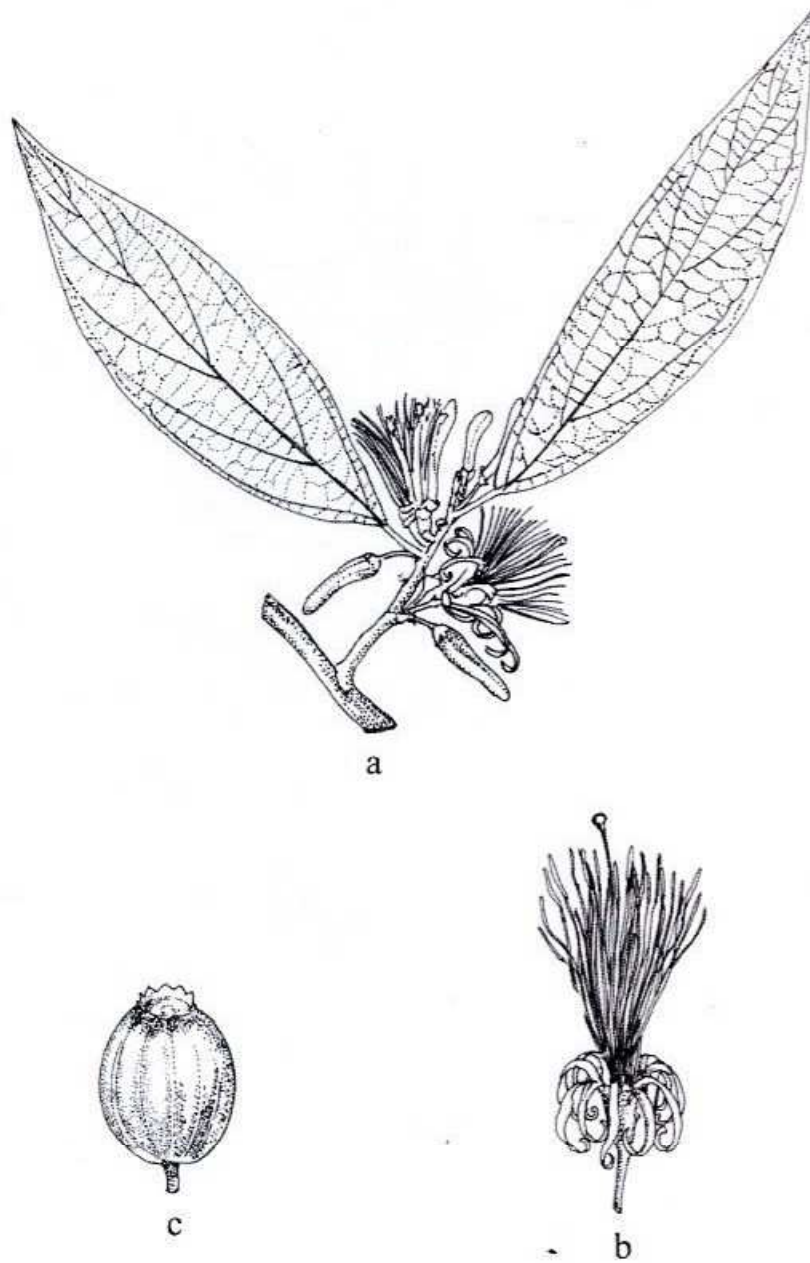


Pl. I. *Alangium barbatum* (R.Br. ex C.B. Clarke) Baill. ex Kuntze, a) a flowering branch ($\times 1$); b. a flower ($\times 2.5$); c.d) stamen ($\times 0.2$).



Pl. II. *Alangium chinense* (Lour.) Harms, a) a flowering branch ($\times 3$); b) stamen ($\times 4$); c) gynoecium ($\times 3$); d) a fruit ($\times 5$).

PL. III



Pl. III. *Alangium salviifolium* (L.f.) Wangerin, a) a flowering branch ($\times 2$); b) a flower ($\times 3.5$); c) a fruit ($\times 1.5$).

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