

An Overview of the Genus *Ficus* L. (Moraceae) in India with Special Emphasis on Andaman and Nicobar Islands

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Introduction

Ficus L. is one of the major constituents of subtropical and tropical rain forests throughout the world. Being a keystone species its role is very significant in any forest ecosystem because it produces huge amount of figs which are eaten by insects, birds and animals throughout the year. The fallen figs are used by decomposers who improve the soil organic component and its fertility. Different insects and wasps not only dependent on figs for their food, rather they complete their life cycle within figs. Trees of *Ficus* are also considered one of the hosts for Indian lac insects. Because of good nutritious value, fig fruits are also used by humans in different delicious meals. The leaves of many species of *Ficus* are used as forage for elephants and cattle. Some of the species are commercially exploited for the production of rubber and many other things like jam, rope etc. The wood of *Ficus* trees is often soft and nondurable but can be used as well curbs as it lasts well in aquatic condition. Almost all parts of the plants including latex have many medicinal properties (Anonymous, 1956). In addition, the Indians have great religious faith on some of the species of *Ficus* since ancient time.

From the present political boundary of India ca. 115 taxa of *Ficus* (Chaudhary *et al.*, 2012) have been recorded out of 750 species occurring throughout the world (Corner, 1965; Berg and Corner, 2005). Recently, the genus has been classified into six subgenera, 19 sections and 27 subsections based on morphological features and distributional pattern (Berg and Corner, 2005).

Some of the subsections like *Hesperidiiformes* and *Platypodeae* have been further divided into series. The genus is majorly found in the Asian-Australian region with about 500 species. King (1888) has recorded 113 species and 47 infra-specific taxa from the British India out of which only 75 species and 16 infra-specific taxa were found from the present political boundary of India.

Out of 115 taxa currently recorded from India, 89 are species and 26 belong to different categories of infra-specific taxa (Chaudhary *et al.*, 2012). The genus is distributed throughout the country from south to north up to the Himalaya at about 2000 m altitude. However, Gangetic Plains, Northeast provinces, Peninsular region and Andaman and Nicobar Islands encompass the highest percentage of species. As per the existing classification, the Indian species of *Ficus* belong to all six subgenera under 12 sections and 15 subsections. The majority of the species fall within the subsections *Urostigma* and *Conosycea* under section *Urostigma* of subgenus *Urostigma*. Currently the authors have initiated a taxonomic study of the Indian *Ficus*, as the genus has not been revised after King (1887-88, 1888). Owing to the large size of the genus, the study has been concentrated firstly at regional/geographical level, hence *Ficus* of Andaman and Nicobar Islands has been considered and presented with some initial data.

Ficus in Andaman and Nicobar Islands

Although the Andaman and Nicobar Islands are very rich in biodiversity and have been designated as one of the hot spot regions of the world, yet not explored fully till date. Many

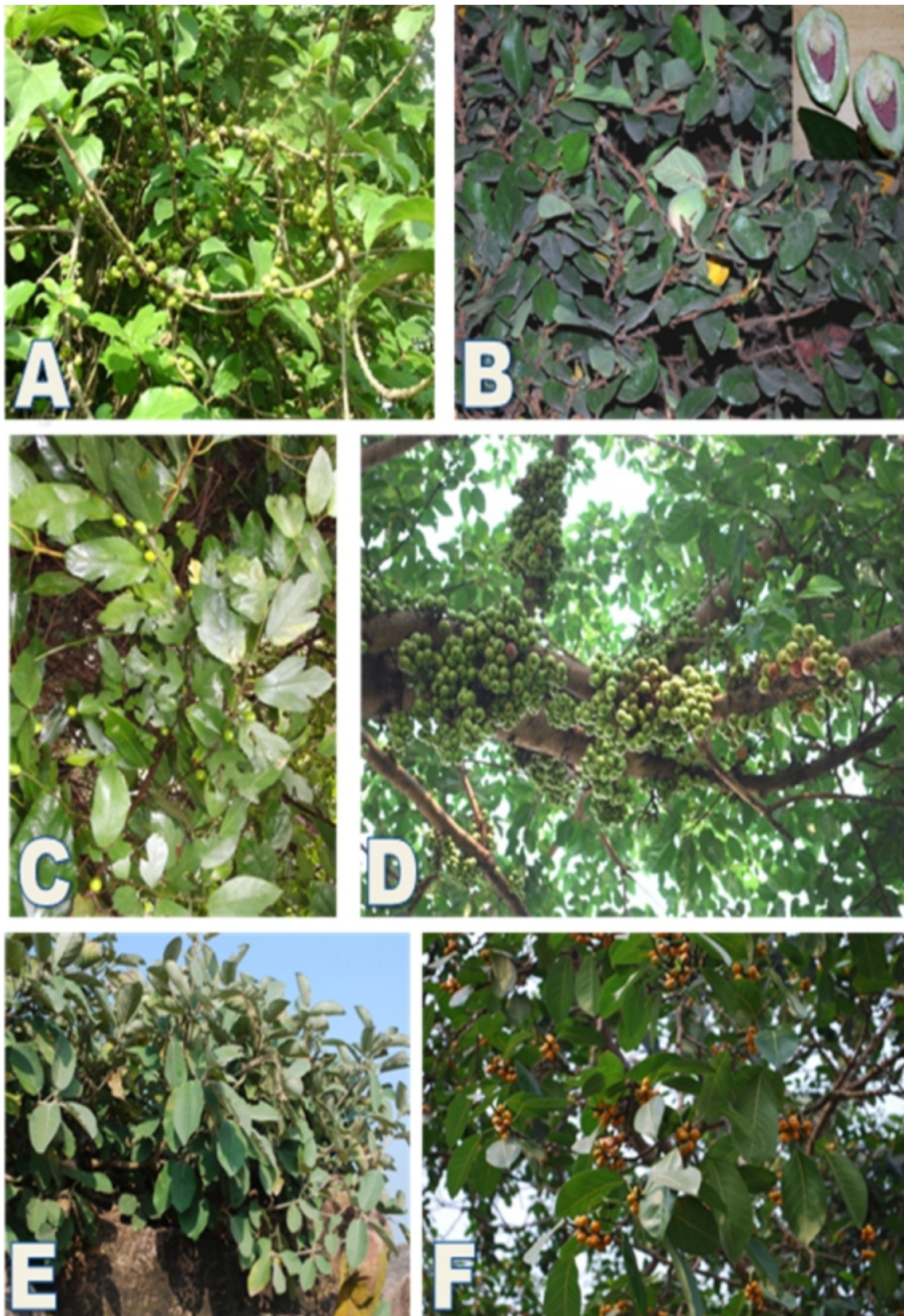


Fig. 1 : A: *Ficus hispida* L. f., B: *Ficus pumila* L., C: *Ficus heterophylla* L. f., D: *Ficus variegata* Blume, E: *Ficus mollis* Vahl, F: *Ficus altissima* Blume.

attempts have been made to enlist the flora of entire area (Rao, 1986; Lakshminarasimhan and Rao, 1996; Dagar and Singh, 1999; Hajra *et al.*, 1999; Reddy and Prasad, 2008), but it is estimated that only 80% areas of the islands have been explored so far. In a recent report about **2428 species of flowering plants under 178 families and 980 genera have been reported from the whole islands** (Pandey and Diwakar, 2008) identifying *Ficus* as the largest genus with *ca.* 50 species. Time to time new records have been added to *Ficus* (Sreekumar, 1998; Pandey and Rasingam, 2008; Rasingham and Upadhyay, 2013), however, no separate study has been carried out on the whole genus of the area. Since, it is a dominant element of the flora of Andaman and Nicobar Islands, an initiative has been pursued to revise the whole genus. There is no any separate workable list of *Ficus* from Andaman and Nicobar Islands is available except some scattered floristic accounts, hence, firstly an attempt has been made to prepare a list of all species of *Ficus* present there based on available information and herbarium specimens which is imperative for pursuing revisionary and any kind of systematic studies. In the present preliminary analysis *ca.* 54 species of *Ficus* have been encountered from the entire area of Andaman and Nicobar Islands, out of which only *F. andamanica* Corner has been found as an endemic to the region, because the majority of the species show their affinity with the elements of adjacent areas. However, **about 15 species are only confined to these areas and not anywhere else in India**, hence need especial conservation attention. Only about 22 species occurring in Andaman and Nicobar Islands exhibit wide range of distribution almost throughout the country. The remaining species are either also available in North-East region (*ca.* 11 species) or Peninsular region (*ca.* 7 species). The correct name with first citation, followed by basionym and relevant synonym (s), if any has been provided for all species. Indian distribution has also been mentioned just below the species name. The colour photographs have also been provided for a few species (Figures).

Enumeration of *Ficus* species present in Andaman and Nicobar Islands

1. *Ficus albipila* (Miq.) King, Ann. Roy. Bot. Gard. Calcutta 2: 179. 1888. *Covellia albipila* Miq. Tamil Nadu, Andaman & Nicobar Islands.
2. *Ficus altissima* Blume, Bijdr. Fl. Ned. Ind. 9: 444. 1825.
Sikkim, Assam, Arunachal Pradesh, Mizoram, Meghalaya, West Bengal, Deccan Peninsula, Andaman and Nicobar Islands.
3. *Ficus ampelas* Burm. f., Fl. Ind. 226. 1768, 'ampelos'; emend. Miq., London J. Bot. 7: 428. 1848. (excl. syn. Rheede).
Andaman and Nicobar Islands (Nicobar Islands).
4. *Ficus andamanica* Corner in Gard. Bull. Singapore 17: 454. 1960.
Andaman and Nicobar Islands (South Andaman Island, Cocos Island) – endemic.
5. *Ficus annulata* Blume, Bijdr. 448. 1825.
Andaman and Nicobar Islands (Little Andaman Island-Hut Bay).
6. *Ficus arnottiana* (Miq.) Miq. in Ann. Mus. Bot. Lugd.-Bat. 3: 287. 1867.
Throughout India including Andaman and Nicobar Islands (Andaman Island).
7. *Ficus benghalensis* L. Sp. Pl. 1059. 1753.
Planted in all parts, wild in the subhimalayan forests and on the lower slopes of the Deccan hills, Andaman and Nicobar Islands (Andaman Islands).
8. *Ficus benjamina* L., Mant. Pl. 1: 129. 1767.
Cultivated throughout, Andaman and Nicobar Islands (Andaman Island).
9. *Ficus benjamina* L. subsp. *comosa* (Roxb.) Panigrahi & Murti, Fl. Bilaspur Dist. 2: 566. 1999. *F. comosa* Roxb.
North East (Sikkim, Assam, Arunachal Pradesh), Bihar, Jharkhand, Orissa, Madhya Pradesh, Uttar Pradesh, South India and Andaman and Nicobar Islands. Cultivated in gardens.
10. *Ficus brevicuspis* Miq. in Fl. Ind. Bat. 1 (2): 315. 1859.

- Andaman and Nicobar Islands (Andaman Islands -
Johore).
11. *Ficus callosa* Willd. in Mem. Acad. Roy. Sci. Hist. 1798: 102. 1798.
Peninsular India from Konkan southwards, Andaman and Nicobar Islands (Andaman Islands).
 12. *Ficus capillipes* Gagnep. in Notul. Syst. 4: 87. 192.
Andaman and Nicobar Islands (Andaman Island).
 13. *Ficus carica* L., Sp. Pl. 1059. 1753.
Cultivated throughout India including Andaman and Nicobar Islands.
 14. *Ficus chartacea* (Wall. ex Kurz) Wall. ex King, Ann. Roy. Bot. Gard. (Calcutta) 1: 159, t. 79. 1888.
Andaman and Nicobar Islands (Central Nicobars).
 15. *Ficus concinna* (Miq.) Miq. in Ann. Mus. Bot. Lugd.-Bat. 3: 286. 1867.
North East region (Sikkim, Assam, Meghalaya - Khasi Hills), Bihar, Jharkhand, Orissa, Madhya Pradesh, Andaman and Nicobar Islands (Andaman Island).
 16. *Ficus costata* Aiton, Hort. Kew 3: 452. 1789.
Kerala, Andaman and Nicobar Islands (Nicobar Islands).
 17. *Ficus curtipes* Corner, Gard. Bull. Singapore 17: 397. 1960.
North-East region (Sikkim, Manipur, Assam, Meghalaya, Arunachal Pradesh, Tripura), West Bengal and Andaman and Nicobar Islands (Andaman Island).
 18. *Ficus elastica* Roxb. ex Hornem., Hort. Bot. Hafn. Suppl. 7. 1819.
North-East region (Sikkim, Meghalaya, Assam). Also cultivated for Indian rubber. Introduced and widely cultivated as an ornamental elsewhere including Andaman and Nicobar Islands.
 19. *Ficus exasperata* Vahl, Enum. Pl. 2: 197. 180.
Central and Southern regions, Andaman and Nicobar Islands (Nicobar Island).
 20. *Ficus fistulosa* Reinw. ex Blume in Bijdr. Fl. Ned. Ind. 9: 470. 1825.
North-East region (Assam, Meghalaya, Arunachal Pradesh, Mizoram, Tripura, Bengal, Jharkhand), Andaman and Nicobar Islands.
 21. *Ficus fulva* Reinw. ex Blume in Bijdr. Fl. Ned. Ind. 478. 1825.
North-East region (Meghalaya, Mizoram), Andaman and Nicobar Island.
 22. *Ficus geniculata* Kurz in J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 42 (2): 105. 1873
Tropical Sikkim, Meghalayas, Assam, Arunachal Pradesh, Orissa, Bihar, Jharkhand, West Bengal, Tamil Nadu, Andaman and Nicobar Islands.
 23. *Ficus hedaracea* Roxb., Fl. Ind. 3: 538. 1832.
Himalaya from Himachal Pradesh to Sikkim, Meghalaya, Assam, Arunachal Pradesh, Tripura, Bihar, Jharkhand, Bengal, Orissa, Madhya Pradesh, Andaman and Nicobar Islands.
 24. *Ficus heterophylla* L. f., Suppl. Pl. 442. 1781.
Throughout the hotter parts of India including Andaman and Nicobar Islands.
 25. *Ficus heteropleura* Blume in Bijdr. Fl. Ned. Ind. 9: 466. 1825.
Bengal, Assam, Arunachal Pradesh, Tripura and Andaman and Nicobar Islands (Nicobar Island).
 26. *Ficus hispida* L. f., Suppl. Pl. 442. 1782.
Throughout India up to 3500 m including Andaman and Nicobar Islands.
 27. *Ficus laevis* Blume in Bijdr. Fl. Ned. Ind. 9: 437. 1825.
North-East region (Meghalaya, Assam, Arunachal Pradesh, Mizoram), West Bengal, Kerala, Andaman and Nicobar Islands.
 28. *Ficus lamponga* Miq., Fl. Ind. Bat. Supple. 431. 1861.
North-East India (Assam, Meghalaya, Arunachal Pradesh, Manipur) West Bengal and Andaman and Nicobar Islands (Andaman Islands).
 29. *Ficus magnoliifolia* Blume in Bijdr. Fl. Ned. Ind. 9: 448. 1825.
Andaman and Nicobar Island (Nicobar Island).
 30. *Ficus microcarpa* L. f., Suppl. Pl. 442. 1782.
North-East region (Assam, Meghalaya, Arunachal Pradesh, Manipur, Mizoram), Punjab, Rajasthan, Peninsular India and Andaman and Nicobar Islands.

31. *Ficus mollis* Vahl in Symb. Bot. 1: 82. 1790.
Uttar Pradesh, Bihar, Jharkhand, Rajasthan, Maharashtra, Central and Southern provinces, Andaman & Nicobar Islands (Nicobar Island).
32. *Ficus nervosa* Heyne ex Roth in Nov. Pl. Sp. 388. 1821.
North-East region (Sikkim, Meghalaya, Assam, Arunachal Pradesh, Bihar, Jharkhand), Peninsular India, Andaman and Nicobar Islands.
43. *Ficus nervosa* subsp. *pubinervis* (Bl.) C.C. Berg in Blumea 48: 298. 2003. *F. pubinervis* Blume
Andaman and Nicobar Islands (Nicobar Islands).
44. *Ficus obscura* Blume var. *borneensis* (Miq.) Corner in Gard. Bull. Singapore 17: 481. 1960;
Andaman and Nicobar Islands (Andaman Islands).
45. *Ficus pendens* Corner in Gard. Bull. Singapore 18: 15. 1960.
Andaman and Nicobar Islands.
46. *Ficus pumila* L., Sp. Pl. 1060. 1753.
Cultivated against walls and buildings throughout including Andaman and Nicobar Islands.
47. *Ficus punctata* Thunb., Diss. *Ficus* 9. 1786. *F. aurantiacea* Griffith.
Andaman and Nicobar Islands.
48. *Ficus racemosa* L., Sp. Pl. 1060. 1753. *F. glomerata* Roxb.
Outer Himalaya and Plains and low hills, almost throughout India including Andaman and Nicobar Islands.
49. *Ficus recurva* Blume, Bijdr. 457. 1825.
Andaman and Nicobar Islands (Andaman Island).
20. *Ficus religiosa* L., Sp. Pl. 1059. 1753.
Wild in subhimalayan regions, Bengal, Central provinces, Andaman and Nicobar Islands; cultivated throughout.
42. *Ficus ribes* Reinw. ex Blume, Bijdr. 463. 1825.
Andaman and Nicobar Islands (Andaman Islands).
42. *Ficus rigida* Jacq. Malay. Misc. 2(7): 72. 1822.
Tropical Himalaya from Uttarakhand eastwards, Meghalaya, Assam, Arunachal Pradesh, Bihar, West Bengal, Orissa, Andaman and Nicobar Islands (Andaman Island).
43. *Ficus rumphii* Blume in Bijdr. Fl. Ned. Ind. 437. 1825. North to South, ascending to 1700 m, Andaman and Nicobar islands.
44. *Ficus sagittata* J. König ex Vahl in Symb. Bot. 1: 83. 1790.
Sikkim, Assam, Meghalaya, Andaman and Nicobar Islands (Andaman Island).
45. *Ficus semicordata* Buch.-Ham. ex J. E. Sm. in Rees, Cyclop. 14: *Ficus* n. 71. 1810. *F. cunia* Buch.-Ham. ex Roxb.
Throughout India including Andaman and Nicobar Islands.
46. *Ficus sinuata* Thunb., *Ficus* 6, 12. 1786.
Assam, Meghalaya, Arunachal Pradesh, Tripura, Andaman and Nicobar Islands (Nicobar Islands).
47. *Ficus stricta* (Miq.) Miq. in Ann. Mus. Bot. Lugd.-Bat. 3: 288. 1867.
Andaman and Nicobar Islands.
48. *Ficus subulata* Blume in Bijdr. Fl. Ned. Ind. 9: 461. 1825.
Sikkim, Meghalaya, Assam, Arunachal Pradesh, Bengal and Andaman and Nicobar Islands (Nicobar Island).
49. *Ficus sunaica* Blume in Bijdr. Fl. Ned. Ind. 9: 450. 1825.
Assam (?), Andaman and Nicobar Islands.
50. *Ficus tinctoria* G. Forst. subsp. *gibbosa* (Blume) Corner, Gard. Bull. Singapore 17: 476. 1960.
Uttar Pradesh, Bihar, Madhya Pradesh, Andaman and Nicobar Islands.
51. *Ficus tinctoria* G. Forst. subsp. *parasitica* (J. König ex Willd.) Corner, Gard. Bull. Singapore 17: 476. 1960.
Throughout India including Andaman and Nicobar Islands.
52. *Ficus variegata* Blume in Bijdr. Fl. Ned. Ind. 9: 459. 1825.
Bihar, Assam, Meghalaya, Andaman and Nicobar Islands.
53. *Ficus virens* Aiton in Hort. Kew. 3: 451. 1789.
Subhimalayan range up to 1700 m towards eastwards, Rajasthan, Peninsular India, Andaman and Nicobar Islands (Andaman Islands). Also frequently planted.
54. *Ficus villosa* Blume in Bijdr. Fl. Ned. Ind. 9: 441. 1825.

Assam, Andaman and Nicobar Islands (Andaman Island).

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