

A CHECKLIST OF THE FAMILY CAPRIFOLIACEAE JUSS. IN INDIA

JOYDEEP ACHARYA^{a1} AND AMBARISH MUKHERJEE^b

^aDepartment of Botany, Kalna College, Kalna, West Bengal, India

^bUGC- CAS (Phase II) Department of Botany, The University of Burdwan, Burdwan, West Bengal, India

ABSTRACT

While reviewing the Magnoliopsid family Caprifoliaceae Juss. in India the present study could document as many as 53 species of six genera, viz. *Abelia* Roxb., *Leycesteria* Wall., *Lonicera* L., *Sambucus* L. *Triosteum* L. and *Viburnum* L. of Caprifoliaceae from the Himalaya and the South Indian Hills. In the checklist, thus prepared, *Lonicera* appears to be the most dominant one with 25 species, the next to follow being *Viburnum* with 17 species. In case of *Leycesteria* and *Sambucus* as many as 5 and 4 species could be documented respectively. Both *Abelia* and *Triosteum* are represented in India by a single species each.

KEYWORDS: Caprifoliaceae, India, Genera, Species, Himalaya, South Indian Hills

The family Caprifoliaceae was named by Antoine Laurent de Jussieu in 1789 in his book *Genera Plantarum* based on *Caprifolium*, the generic name cited as early as 1754 by Phillip Miller in the fourth edition of the book entitled *The Gardeners Dictionary... Abridged*. The Latin name *Caprifolium* means Goats' Leaf. The name appears to be meaningful since herbage of plants of this family is a favourite food of goats and the stem twines like the goat's horn. Although the generic name *Caprifolium* Miller is presently treated as a synonym, the family name Caprifoliaceae Juss. stands conserved with appropriate annotations.

The family Caprifoliaceae Juss. has been assigned a position within the Dipsacales Juss. ex Bercht. & J.Presl. which is an order belonging to the class Magnoliopsida (dicotyledons) of the division Magnoliophyta (angiosperms). Cronquist (1988) treated this order as a member of the subclass Asteridae Takhtajan of the class Magnoliopsida. According to him Caprifoliaceae includes about 400 species under it. The family has been shown to include 12 genera and 260 species by Takhtajan (2009) and 12 genera and 275-300 species by Watson and Dalwitz (1992 onwards). The Angiosperm Phylogeny Group Classification (APGIII, 2009) puts Caprifoliaceae in Dipsacales under the subgroup Campanulid of the clade Asterid of the Core

order Dipsacales of the clade Campanulids of Asterid belonging to Superasterid of the major clade Eudicots.

The plants belonging to the Caprifoliaceae are mostly shrubs and vines, rarely herbs and have: leaves opposite, simple, entire or occasionally lobed, or pinnately compound being imparipinnate or incompletely bipinnate; sometimes stipulate; flowers actinomorphic or zygomorphic, in cymes; calyx 5-4, tube fused with ovary and terminating in small imbricated or open teeth; corolla 5-4, rising above the ovary to have spreading imbricated lobes, sometimes bilabiate; stamens equaling the number of corolla lobes and alternating with them, epipetalous; gynoecium compound with 2-5-8 carpels; ovules 1-many per locule, pendulous, in axile placentation; style simple with capitate stigma; fruits fleshy berry or drupe or achene or dehiscent or indehiscent capsules; seeds with fleshy endosperm. Many members of this family possess, floral or extra-floral nectaries, attract pollinators. Moreover, the flowers often emit a sweet heavy odour.

The family is somewhat cosmopolitan in distribution with a preference to temperate regions. It has its centres of diversity in the eastern North America and eastern Asia and appears to have remained absent in tropical and southern Africa.

After the work of C.B. Clarke (1880) on Caprifoliaceae in the Flora of British India, there has been scattered information about the family communicated through the regional floras and publications in journals. To fulfill the need for an updated and comprehensive revision of the taxon in India the present work was taken up in conformity with earlier work (Acharya *et al.*, 2010; Mukherjee and Acharya, 2011; Acharya and Mukherjee, 2014a, 2014b 2014c; 2015).

-----¹Corresponding author

Eudicot, the largest clade under Eudicots which is one of the major clades of Angiosperms having tricolpate or tricolpate-derived pollen types. The Angiosperm Phylogeny Group Classification in its latest version (APG IV, 2016) has kept Caprifoliaceae under the

MATERIALS AND METHODS

The work was initiated in 2010 with a review of literature having relevance to various taxonomic aspects of Caprifoliaceae collaterally with documentation of nearly 1000 specimens preserved in different Herbaria in India (Central National Herbarium (CAL), Lloyd Botanic Garden, Darjeeling (LBG), Sikkim Circle of Botanical Survey of India, Gangtok (BHSC), Burdwan University (BURD), North Bengal University, Eastern Regional Centre, Botanical Survey of India, Shillong (ERC, BSI), Arunachal Pradesh Field Station, Botanical Survey of India, Itanagar (ARUN)], Madras Herbarium (MH) of the Southern Regional Centre, Coimbatore) and abroad [Royal Botanic Gardens, Kew (K), Herbarium Haussknecht (JE), Friedrich-Schiller-Universität, Jena and Botanische Staatssammlung München (M)] as also the scanned and web images of specimens, mainly the types, availed from such sources as Herbarium of the Arnold Arboretum (A), Natural History Museum (BM), Royal Botanic Garden Herbarium (E), Muséum National d'Histoire Naturelle (P), The William and Lynda Steere Herbarium of the New York Botanical Garden, NYBG, (NY), Academy of Natural Sciences of Drexel University Museum in Philadelphia, Pennsylvania (PH) and others. Floras and other publications covering the taxon in India were consulted to confirm identification and to cite them along with protologue of respective species. Nomenclature of each species was checked with that given in the latest publications. Websites of the International Plant Names Index (IPNI) [<http://www.ipni.org/>], The Plant List (<http://www.theplantlist.org>) and Tropicos (<http://www.tropicos.org/>) were consulted for updating species names.

RESULTS

The present work documents 53 species of 6 genera viz. *Abelia* Roxb., *Leycesteria* Wall., *Lonicera* L., *Sambucus* L. *Triosteum* L. and *Viburnum* L. of the Caprifoliaceae from India covering the Himalaya extending from the North West to the North East and also in South Indian Hills. The family could not be documented from any other part of India. A very comprehensive key to the identification of the genera has been prepared to facilitate identification. The concerned species have been enumerated alphabetically under each genus along with their updated nomenclature, citations, synonyms, basionyms, etc.

Key to the Genera

1. Plants herbaceous, opposite pairs of leaves connate at the base**5.Triosteum**
1. Plants ligneous, opposite pairs of leaves are free at the base**2**
2. Leaves imparipinnate or incompletely bipinnate..... **4.Sambucus**
2. Leaves simple.....**3**
3. Stem and branches mostly scandent; the flowers in each ultimate axillary pair basally fused.....**3. Lonicera**
3. Stem and branches mostly erect; flowers not in axillary pairs and basally free...**4.**
4. Flowers with extra-floral nectaries; stem and branches fistular.....**2.Leycesteria**
4. Flowers without extrafloral nectaries; stem and branches solid... ..**5**
5. Flowers in cymose clusters of 3 or more flowers, central flower usually sessile, calyx plumose, carpels without nectaries**1. Abelia**
5. Flowers in corymbose clusters of numerous flowers, peripheral flowers usually sterile, calyx not plumose, carpels with nectaries**6.Viburnum**

ABELIA R.Br.

1. **Abelia triflora** R. Br. ex Wall., Pl. Asiat. Rar.1:14.t.15.1829; Clarke in Hook.f., Fl. Brit. India 3:9. 1880; Collett, Fl. Sim.222.1921.Parker, For. Fl. Punj. ed.3.268.1956; Polunin and Stainton, Fl. Him. 164-165. 1984.Naithani, Fl. Chamoli Dist. 1: 273.1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:334. 1984; Pusalkaret Singh, Fl. Fl. Gangotri NationalPark.330.2012.*Linnaea triflora* (R.Br. ex Wall.) A.Braun and Vatke Oesterr. Bot. Z. 22: 291 1872.*Zabelia buddleioides* (W.W. Sm.) Hisauti and H. Hara J. Jap. Bot. 29(5): 143.1954.*Zabelia buddleioides* var. *divergens* (W.W.

Sm.) Golubk. Novosti Sist. Vyssh.Rast.9:259.1972.*Zabelia buddleioides* var. *stenantha* (Hand.-Mazz.) Hisauti and H. Hara. J. Jap. Bot. 29(5): 144 1954. *Zabelia stenantha* (Hand.-Mazz.) Golubk. NovostiSist. Vyssh. Rast. 9: 259 1972.*Zabelia triflora* (R.Br. ex Wall.) Makino, Makino 9: 175 1948; Gupta, Fl. Nainitalensis 159.1968.

LEYCESTERIA Wall.

1. **Leycesteria dibangvalliensis** S.K.Das & G.S.Giri 1991. J. Bombay Nat. Hist. Soc. 88: 265 publ. 1992. Hajra *et al.*, (Ed.) in Materials for Fl. Arunachal Pradesh 1:558.t. 123.1996.
2. **Leycesteria formosa** Wall. in Roxburgh, Fl. Ind. 2:182.1824; Clarke in Hook.f., Fl. Brit. India3:16.1880; Osmaston, Forest Fl. Kumaon 284.1927; Parker, For. Fl. Punj. ed.3.274.1956; Banerji in Rec. Bot. Surv. Ind. 19(2): 50.1966; Gupta, Fl. Nainitalensis 160.1968; Hara in Fl. E. Him.317.1966, 124.1971; Nair, Fl.Bash. Himal. 129.1977; Matthew, Fl. Pl. Kurseong 41.1981; Polunin and Stainton, Fl. Him. 165. 1984. Naithani, Fl. Chamoli 1: 274. 1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:334. 1984; Mukherjee, Fl.Pl. Darjiling 109.1988; Grierson and Long in Springate, Fl. Bhutan 2(3):1355.2001. Pusalkar and Singh, Fl.Gangotri National Park.333.2012.
3. **Leycesteria glaucophylla** (Hook.f. et Thoms.) Clarke in Hook. f., Fl. Brit. India3:16.1880; Hara in Fl. E. Him.317.1966, 124.1971; Grierson and Long in Springate, Fl. Bhutan 2(3): 1355.2001.Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1:385.2013. *Leycesteria glaucophylla* (Hook.f. etThoms.) Clarke in Hook.f., Fl. Brit. India3:16.1880; Hara in Fl. E. Him.317.1966, 124.1971; Grierson and Long in Springate, Fl. Bhutan 2(3): 1355.2001.*Lonicera belliana* W. W. Sm. ; Trans. Proc. Bot. Soc. Edinb. 24: 173, t. 13 1911. *Lonicera glaucophylla* Hook. f. and Thomson in J. Proc. Linn. Soc., Bot.2:165.1858.*Leycesteria glaucophylla* var. *thibetica* (H.J. Wang) J.F. Huang in Fl. Xizang. 4: 509. 1985. *Leycesteria thibetica* H.J. Wang in Acta Phytotax. Sin. 16(4): 125–125, pl. 1 1978.
4. **Leycesteria gracilis** (Kurz) Airy Shaw in Icon. Pl. 32: t. 3166 t. 3166 1927.in Kew Bull. 1932: 174 1932. *Lonicera gracilis* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 39: 77. 1870.

5. **Leycesteria stipulata** (Hook.f. et Thoms.) Fritsch. in Engl., Die Natürlichen Pflanzenfamilien IV, 4:169.1891; Brandis, Indian Trees 360, 1906; Hara in Fl. E. Him.318.1966, 125.1971; Matthew, Fl. Pl. Kurseong 41.1981; Grierson and Long in Springate, Fl. Bhutan 2(3):1355.2001. *Lonicera stipulata* Hook.f. et Thoms. in Journ. Linn. Soc.2:165.1858.*Pentapyxis stipulata* (Hook.f. et Thoms.) Clarke in Hook. f., Fl. Brit. India 3: 17.1880; Mukherjee, Fl. Plants of Darjiling 109.1988.

Loniceraceae L.

1. **Lonicera acuminata** Wall. In Roxb., Fl. Ind.2:176.1824.Clarke in Hook.f., Fl. Brit. India 3:10.1880; Hara in Fl. E. Him.318.1966; Polunin and Stainton, Fl. Him. 165-166. 1984. Grierson and Long in Springate, Fl. Bhutan 2(3): 1353.2001.
2. **Lonicera angustifolia** Wallich ex A.P. de Candolle, Prodr. 4: 337.1830; Hooker, f., Fl. British India 3: 13. 1880; Nair, Fl. Bash. Himal. 128.1977; Parker, For. Fl. Punj. ed.3.272.1956; Rau, High Altitude Fl. Pl. W. Himal.117.1975;Polunin and Stainton, Fl. Him. 167. 1984; Naithani, Fl. Chamoli 1: 275. 1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:335. 1984.
3. **Lonicera asperifolia** (Decne.) Hook. f. et Thomson in J. Proc. Linn. Soc. Bot. 2: 166. 1858; Clarke in Hook.f., Fl. Brit. India 3:11. 1880; Parker, For. Fl. Punj. ed.3.270.1956; Rau, High Altitude Fl. Pl. W. Himal.117.1975; Polunin and Stainton, Fl. Him. 168. 1984; Naithani, Fl. Chamoli 1: 275.1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:335. 1984; Chandra Sekar and Srivastava, Fl.Pin Valley National Park.116.2009; Pusalkar and Singh, Fl.Gangotri National Park.334.2012. *Xylosteum asperifolium*Decne. in Jacquemont, Voy. Bot. 77, t. 85.1835- [ante Jun.] 1842. *Caprifolium asperifolium* (Decne.) Kuntze, Revis. Gen. Pl.1:274.1891.
4. **Lonicera caucasia**Pall., Fl. Ross. 1:59.1784, subsp. **govaniiana** (Wall. ex DC.) Hara in Hara and Williams, Enum. Fl. Pl. Nep. 2:195. 1979. Pusalkar and Singh, Fl.Gangotri National Park.334.2012. *L.discolor* Lindl. in Bot. Reg.33.t.44.1847; Nair, Fl. Bash. Himal.128.1977. *Lonicera govaniiana* Wall. ex DC., Prodr. 4: 337. 1828; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:335. 1984. *Lonicera orientalis* Lam., Encycl. 1:731.1785; Clarke in Hook.f., Fl. Brit. India 3:15. 1880; Parker, For. Fl. Punjab ed.3.273.1956; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:336. 1984;

- Caprifolium orientale* Kuntze in Revis. Gen. Pl. 1: 274 1891.
5. **Lonicera cyanocarpa** Franchet in J. Bot. (Morot). 10(19): 314. 1896. *Lonicera cyanocarpa* Franchet var. *porphyrantha* Marquand and Shaw in Journ. Linn. Soc. Bot.48:187.1929.Polunin and Stainton, Fl. Himalaya.167. 1984.
 6. **Lonicera glabrata** Wall. in Roxb., Fl.Ind.2: 175. 1824; Clarke in Hook.f., Fl. Brit. India3:10.1880; Hara in Fl. E. Him.318.1966, 125.1971; Matthew, Fl. Pl. Kurseong 41.1981;Polunin and Stainton, Fl. Him. 165. 1984.Mukherjee, Fl. Pl.Darjiling109. 1988. Chauhan in Singh, Singh and Mondal, Fl. Manipur 1: 458.2000. Grierson and Long in Springate, Fl. Bhutan 2(3): 1354. 2001.*Caprifolium glabratum* Revis. Kuntze, Gen. Pl. 1: 273. 1891.
 7. **Lonicera hildebrandiana** Collett & Hemsl. , J. Linn. Soc., Bot. 28: 64, pl. 11 1890. *L. braceana* Hemsley in J. Linn. Soc. Bot.38. in obs. 1890. Kanjilal, Fl. Assam 3:7.1939. Hajra *et al.*, (Ed.) in Materials for Fl. Arunachal Pradesh 1: 558.1996.
 8. **Lonicera hispida** Pallas ex Willd. in Roem. and Schult., Syst. Veg. 5: 258.1819; Clarke in Hook.f., Fl. Brit. India 3:11. 1880; Parker, For. Fl. Punj. ed.3.270.1956; Rau, High Altitude Fl.Pl. W. Himal.117.1975; Polunin and Stainton, Fl. Him. 167. 1984; Naithani, Fl. Chamoli 1: 275. 1984; Pusalkar and Singh, Fl.Gangotri National Park.335.2012. *L.vaccinioides* Rehder in Fedd. Reper.6:272.1909; Stewart, Ann.Cala. Vas. Pl.W. Pak & Kashmir 694. 1972; Chowdhery and Wadhwa, Fl. Himachal Pradesh.1: 338.1984.*Caprifolium hispidum* (Pall. ex Willd.) Kuntze, Revis. Gen. Pl.1:274.1891.
 9. **Lonicera hypoleuca**Decne. inJacquemont, Voyage dansl'Inde4 (Bot.): 81, t. 89.1835- [ante Jun.] 1844; Clarke in Hook.f., Fl. Brit. India 3:14. 1880; Parker, For. Fl. Punj. ed.3.272.1956; Rau,High Altitude Fl.Pl. W. Himal.117.1975.Polunin and Stainton, Fl. Him. 164. 1984. Naithani, Fl. Chamoli 1: 276. 1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:336. 1984; Pusalkar and Singh, Fl.Gangotri National Park.335.2012.*Caprifolium hypoleucum* (Decne.) Kuntze, Revis. Gen. Pl.1:274.1891.
 10. **Lonicera japonica** Thunberg in Murray, Syst. Veg., ed. 14,216. 1784. *Caprifolium japonicum* (Thunb.) Dum. Cours. in Bot. Cult. ed. 2, 7: 209. 1814. *Caprifolium roseum* Lam. in Fl. Franç. 3: 368 1779. *Lonicera brachypoda* Siebold in Prodr. 4: 335 1830. *Lonicera fauriei* H. Lév. and Vaniot in Repert. Spec. Nov. Regni Veg. 5(85-90): 100 1908.
 11. **Lonicera lanceolata**Wall. in Roxb., Fl.Ind.2: 177. 1824; Hara in Fl. E. Him. 125.1971. Polunin and Stainton, Fl. Him. 167. 1984. Grierson and Long in Springate, Fl. Bhutan 2(3):1353.2001.*L. decipiens* Hook.f. et Thoms. in J. Linn. Soc.Bot.2:170.1858; Clarke in Hook.f., Fl. Brit. India3:14.1880.
 12. **Lonicera leschenaultia** Wall.exRoxb., Fl. Ind.2:178.1824. Sharma and Singh, Fl. Karnataka 121.1984.Gamble, Fl. Madras Pres. 1: 407.1915 and 1: 577. 1997 (Rep. ed).
 13. **Lonicera ligustrina** Wall. exRoxb., Fl. Ind. 2: 179. 1824. Clarke in Hook.f., Fl. Brit. India 3:12,1880. Wight et Arn., Prodr.380.1834. Wight, Icon. Pl. Ind. Orient.1025.1840-1853. Gamble, Fl. Madras Pres. 1: 408.1915 and 1: 577. 1997 (rep. ed);Ren dong Shu, Fl. China 19: 626. 2011. Pal, Fl.Lower Subansiri Dist., Arunachal Pradesh 1:387.2013.
 14. **Lonicera macrantha**(D.Don) Spreng., Syst. Veg. 4(2): 82.1827; Hara in Fl. E. Him. 318.1966; Clarke in Hook.f. Fl. Brit. India3:10.1880; Deb, Fl. Tripura 1: 199.1981; Polunin and Stainton, Fl. Him. 166. 1984. Chauhan in Singh, Singh and Mondal, Fl. Manipur 1: 458.2000.Chauhan *et al.*, Fl. Namdhapa (Ed. P.K.Hajra) 181.1996; Grierson and Long in Springate, Fl. Bhutan 2(3):1354.2001. Bujarbaruait Sigh in Singh *et al.*, Fl.Mizoram1:677.2002. Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1:388.2013. *Caprifolium macranthum* D.Don, Prodr. Fl. Nep.140. 1825.*Xylosteum scandens* Buch.-Ham. ex D. Don, Prodr. Fl. Nep. 140. 1825, pro syn.
 15. **Lonicera microphylla** Willd. ex Roem. and Schultes, Syst. Veg. 5:258. 1819. Clarke in Hook. f., Fl. Brit. Ind. 3:15.1880; Wendelbo in Rech. f., Fl Iran. 10:9.1965; R.R. Stewart in Nasir and Ali, Ann. Cat. Vasc. Pl W. Pak. and Kashm. 693.1972; Rau,High Altitude Fl.Pl. W. Himal.117.1975;Naithani, Fl. Chamoli Dist. 1: 276. . 1984.
 16. **Lonicera myrtillos** Hook. f. et Thoms. in J. Linn. Soc. Bot. 2:168. 1858; Brandis, For. Fl. (repr. ed.) 255.1874; Wendelbo in Rech. f., Fl Iran. 10: 7.1965; R.R. Stewart in Nasir and Ali, Ann. Cat. Vasc. Pl W. Pak. and Kashm. 693.1972;Rau, High Altitude Fl.Pl. W. Himal.117.1975; Nair, Fl.Bash. Himal. 129.1977; Hara and Willams, Enum. Fl. Pl. Nepal, 196.1979;Polunin and Stainton, Fl. Him. 168. 1984; Naithani, Fl. Chamoli Dist. 1: 276. 1984. Chowdhery

- and Wadhwa, Fl. Himachal Pradesh 1:336. 1984. *Lonicera myrtillus* Hook. f. Thomson *var depressa* Rheder in Sargent Trees and Shrubs 1:87.1903. *Lonicera parvifolia* Hook. f. Thomson in J. Linn. Soc. Bot. 2: 168. 1858, non Edgew.1846, 1851; non Hyane, 1822; Clarke in Hook.f., Fl. Brit. India 3:15. 1880, *excl. var.myrtillus* (Hook. f. Thomson) C.B. Clarke. *Caprifolium parvifolia* Kuntze, Revis. Gen. Pl. 1:274.1891. *Lonicera depressa* Royle, III. Bot. Himal. Mts 1: 236.1835. *nom. nud. Devendraea myrtillus* (Hook. f. Thomson) Pulaskar *var depressa* (Rheder) Pulaskar in Taiwan 56 (3):213.2011.
- 17. *Lonicera obovata*** Royle ex Hook. f. Thomson in J. Proc. Linn. Soc. Bot. 2: 169. 1858. Clarke in Hook.f., Fl. Brit. India 3:14. 1880; Parker, For. Fl. Punj. ed.3.272.1956; Rau, High Altitude Fl.Pl. W. Himal.117.1975; Nair, Fl. Bash. Himal. 128.1977; Polunin and Stainton, Fl. Him. 168. 1984; Naithani, Fl. Chamoli Dist.1:276.1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:336. 1984; Pusalkar and Singh, Fl.Gangotri National Park.335.2012. *Caprifolium obovatum* (Royle ex Hook. f. and Thomson) Kuntze, Revis. Gen. Pl.1:274.1891.
- 18. *Lonicera parvifolia*** Hayne, Dendrol. Fl. Umg.Berl. 14. 1822. *Lonicera parvifolia* Edgew. Trans. Linn. Soc. London 20(1): 60. 1846 [1851 publ. 29 Aug 1846] *nom. illeg. later homonym non Hayne (1822)*. Clarke in Hook. f., Fl. Brit. India 3:14. 1880. *Caprifolium parvifolium* Kuntze, Revis. Gen. Pl. 1: 274 1891.
- 19. *Lonicera purpurascens*** Walp.,Repert. Bot. Syst. 2: 449 1843; Clarke in Hook.f., Fl. Brit. India 3:12. 1880; Collett, Fl. Simla 224. 1902; Parker, For. Fl. Punj. ed.3.272.1956;Rau, High Altitude Fl.Pl. W. Himal.117.1975; Nair, Fl. Bash. Himal. 129.1977; Polunin and Stainton, Fl. Him. 164. 1984. Naithani, Fl. Chamoli Dist.1:277.1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:337. 1984; *Xylosteum purpurascens* Decne in Jacq. Voy. Bot. Ind.4:79.t.87.1843. *Caprifolium purpurascens* Kuntze, Revis. Gen. Pl. 1: 274 1891.
- 20. *Lonicera quinquelocularis*** Hardw. inAsiat. Res. 6: 351. 1799; Clarke in Hook.f., Fl. Brit. India 3:14. 1880; Collett, F. Simla 225.1902; Osmaston, For. Fl. Kumaon 280.1927; Parker, For. Fl. Punj. ed.3.274.1956; Gupta, Fl. Nainitalensis 161.1968; Rau, High Altitude Fl. Pl. W. Himal.117.1975; Nair, Fl. Bash. Himal. 129.1977; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:337. 1984; Polunin and Stainton, Fl. Him. 169. 1984. Naithani, Fl. Chamoli Dist.1:277.1984. Pusalkar and Singh, Fl.Gangotri National Park.336.2012.
- 21. *Lonicera rupicola*** Hook. f. Thomson in J. Proc. Linn. Soc. Bot. 2: 168. 1858; Clarke in Hook.f., Fl. Brit. India 3:13. 1880. Rau, High Altitude Fl.Pl. W. Himal.117.1975.Polunin and Stainton, Fl. Him. 166. 1984. *Devendraea rupicola* (Hook. f. Thomson) Pulaskar in Taiwan 56 (3):215.2011.Naithani, Fl. ChamoliDist.1:277.1984. *Lonicera thibetica* Bureau and Franch in J. Bot. (Morot) 5(3): 48 1891.
- 22. *Lonicera semenovii*** Regel, Acta Hort. Petrop.5:608.1878. Naithani, Fl. Chamoli 1: 273.1984. *L.glauca* Hook.f. et Thoms., Journ. Linn. Soc.2: 166.1858; Clarke in Hook.f., Fl. Brit. India 3:11.1880.non Wall.
- 23. *Lonicera spinosa*** Jacquem. ex. Walp.,Repert. Bot. Syst. 2: 449.1843; Clarke in Hook.f., Fl. Brit. India 3:13. 1880; Rau, High Altitude Fl.Pl. W. Himal.117.1975; Nair, Fl.Bash. Himal. 129.1977; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:337. 1984; Polunin and Stainton, Fl. Him. 166. 1984; Parker, For. Fl. Punj. ed.3.271.1956;Chandra Sekar *et* Srivastava, Fl. Pin Valley National Park.117.2009. *Xylosteum spinosum* Jacquem. ex. Decne. in Jacquemont, Voy. Bot. 78, t. 86.1843. *Caprifolium spinosum* (Jacquem. ex. Decne.) Kuntze, Revis. Gen. Pl. 1:274.1891. *Lonicera albertii* Regel in Trudy Imp. S.-Peterburgsk. Bot. Sada 7: 550 1881.Naithani, Fl. Chamoli Dist.1:277.1984. *Devendraea spinosa* (Jacquem. ex. Walp.) Pusalkar *et* Singh, Fl. Fl.Gangotri National Park.332.2012.
- 24. *Lonicera tomentella*** Hook. f. et Thomson, J. Proc. Linn. Soc., Bot. 2: 167. 1858. *Lonicera tomentella* *var. conaensis* P.S. Hsu and Y.F. Huang in Fl. Xizang. 4: 495, fl. 209 1985.
- 25. *Lonicera webbiana*** Wall. ex. DC. ,Prodr. 4:336. 1830; Wendelbo in Rech. f., Fl. Iran. 10:12.1965; Parker, For. Fl. Punj. ed.3.273.1956; Gupta, Fl. Nainitalensis 161.1968; Rau, High Altitude Fl.Pl. W. Himal.117.1975; Nair, Fl.Bash. Himal. 128.1977; Polunin and Stainton, Fl. Him. 167. 1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:338.1984; Pusalkar and Singh, Fl. Gangotri National Park. 337.2012.*Loniceraalpigena* auct. non L., C.B. Clarke in Hook. f., Fl. Brit. Ind. 3:15-16.

1880. Parker, For. Fl. Punj. 273.1956. *Lonicera adenophora* Franch. J. Bot. (Morot) 10(19): 311–312. 1896. *Lonicera oxyphylla* Edgew. in Tr. Linn. Soc. 20:60. 1846. *Lonicera heterophylla* Decne. in Jacq., Voyage Autour du Monde 80, t. 89. 1843. C.B. Clarke in Hook. f., Fl. Brit. Ind. 3:15.1880; R.R. Stewart in Nasir and Ali, Ann. Cat. Vasc. Pl. W. Pak. and Kashm. 692.1972. Rau, High Altitude Fl. Pl. W. Himal. 117.1975; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:335. 1984.

SAMBUCUS L.

1. **Sambucus adnata** Wall. ex DC., Prodr. 4: 322. 1830; Clarke in Hook.f., Fl. Brit. India 3:2.1880; Hara, F. E. Himal. 1: 319.1966; Matthew, Fl. Pl. Kurseong 42.1981; Bujarbaru et Sigh in Singh *et al.*, Fl. Mizoram 1:677.2002. *Sambucus gauischii* Wettst. In Oesterr. Bot. Z. 40(6): 230–231 1890. *Sambucus schweriniana* Rehd. in Pl. Wilson. 1(2): 306–307 1912.
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308–309. 1913; Hara in Fl. E. Himal. 319.1966; in Enum. Fl. Pl. Nepal 2:197.1979; Matthew, Fl. Pl. Kurseong 42.1981; Mukherjee, Fl. Pl. Darjiling 110; Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1:389.2013; S.

javanica var. *argyi* (H. Léveillé) Rehder; S.

javanica subsp. *chinensis* (Lindley) Fukuoka, ActaPhytotax. Geobot. 62: 1987.

4. **Sambucus wightiana** Wall. ex Wight and Arn. in Prodr. Fl. Ind. Orient. 1: 388. 1834. Wendelbo in Rech. f., Fl. Iran. 10:2. 1965; R.R. Stewart, Ann. Cat. Vasc. Pl. W. Pak. and Kashm. 695. 1972; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1:339.1984. *Sambucus ebulus* auct. non L. Sp. Pl. 1: 269. 1753: C.B. Clarke in Hook.f., Fl. Brit. India 3:2.1880; Parker, For. Fl. Punj. ed. 3.275.1956.

TRIOSTEUM L.

1. **Triosteum himalayanum** Wall. in Roxb., Fl. Ind. 2: 180.1824. Grierson and Long in Springate, Fl. Bhutan 2(3):1362.2001. Polunin and Stainton, Fl. Him. 164. 2001. *Triosteum hirsutum* Wall. in Roxb., Fl. Ind. 2: 180.1824; Rau, High Alt. Fl. Pl. W. Himalaya 117. 1975. Naithani, Fl. Chamoli Dist. 1:278.1984.

VIBURNUM L.

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2. **Viburnum colebrookianum** Wallich ex DC., Prodr. 4: 325.1830; Clarke in Fl. Brit. India 3: 5.1880. Kanjilal *et al.*, Fl. Assam 3: 4.1939; Hara in Fl. E. Himal. 127. 2: 1971; Matthew, Fl. Pl. Kurseong 42.1981; Chauhan *et al.*, Fl. Namdhapa (Ed. P.K. Hajra) 181.1996; Hajra *et al.*, (Ed.) in Materials for Fl. Arunachal Pradesh 1; 562.1996; Chauhan in Singh, Singh *et* Mondal, Fl. Manipur 1: 459.2000. R.A. King in Grierson and Long, Fl. Bhutan 2(3): 1359.2001. Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1:390.2013.
3. **Viburnum cordifolium** Wallich ex DC., Prodr. 4: 327. 1830; Hara in Fl. E. Himal. 319. 1966; Rau, High Altitude Fl. Pl. W. Himal. 117. 1975. Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1:391.2013.
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5. **Viburnum corylifolium** Hook. f. and Thomson in J. Linn. Soc., Bot. 2: 174. 1858. Clarke in Hook. f., Fl. Brit. India 3: 3. 1880. Kanjilal et al., Fl. Assam 3: 3. 1939; Hajra et al., (Ed.) in Materials for Fl. Arunachal Pradesh 1; 562. 1996. Chauhan et al., Fl. Namdhapa (Ed. P.K. Hajra) 181-182. 1996; *Viburnum barbigerum* H. Lév. Fl. Kouy-Tchéou 65. 1914. *Viburnum corylifolium* Hook. f. and Thomson. Repert. Spec. Nov. Regni Veg. 9(222-226): 442-443. 1911.
 6. **Viburnum cotinifolium** D. Don, Prodr. Fl. Nepal. 141. 1825. Brandis, For. Fl. N.W. and C. India, 258. 1874; Clarke in Hooker f., Fl. Brit. India 3: 5. 1880; Osmaston, For. Fl. Kumaon 274. 1927; Parker, For. Fl. Punj. ed. 3. 275. 1956; Gupta, Fl. Nainitalensis 158. 1968; Rau, High Altitude Fl. Pl. W. Himal. 117. 1975; Nair, Fl. Bash. Himal. 129. 1977; Chowdhery and Wadhwa, Fl. Himachal Pradesh. 1: 339. 1984; Naithani, Fl. Chamoli Dist. 1: 279. 1984. *V. polycarpum* Wallich ex DC., Prodr. 4: 328 (1830).
 7. **Viburnum cylindricum** Buch.-Ham ex D. Don, Prodr. Fl. Nepal. 142. 1825; Gupta, Fl. Nainitalensis 159. 1968; Hara in Hara et al., Enum. Fl. Pl. Nepal 2: 198. 1979; Chowdhery and Wadhwa, Fl. Himachal Pradesh. 1: 339. 1984; Naithani, Fl. Chamoli Dist. 1: 279. 1984; Chauhan et al., Fl. Namdhapa (Ed. P.K. Hajra) 182. 1996; Hajra et al., (Ed.) in Materials for Fl. Arunachal Pradesh 1; 563. 1996; Chauhan in Singh, Singh and Mondal, Fl. Manipur 1: 460. 2000; Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1: 392. 2013. *Viburnum crassifolium* Rehder in Trees and Shrubs 2(2): 112. 1908; *Viburnum cylindricum* var. *crassifolium* (Rehder) C.K. Schneid in Bot. Gaz. 64(1): 77-77. 1917.
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 9. **V. foetidum** Wall., Pl. Asiat. Rar. 1: 49, pl. 61. 1830.; Clarke in Hooker f., Fl. Brit. India 3: 4. 1880. Kanjilal et al., Fl. Assam, 3: 3. 1939; Hara, Fl. E. Himal. 127. 1971; N.P. Balakr., Fl. Jowai 1: 228. 1981; Chauhan et al., Fl. Namdhapa (Ed. P.K. Hajra) 182. 1996; Hajra et al., (Ed.) in Materials for Fl. Arunachal Pradesh 1; 563. 1996; Chauhan in Singh, Singh and Mondal, Fl. Manipur 1: 460. 2000. Bujarbarua and Sigh in Singh et al., Fl. Mizoram 1: 678. 2002. Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1: 393. 2013.
 10. **Viburnum grandiflorum** Wall. ex DC, Prodr. 4: 329. 1830; Naithani, Fl. Chamoli 1: 279-280. 1984.
 11. **V. hebanthum** Wight and Arnott, Prodr. 388. 1834; Gamble, Fl. Madras Pres. 1: 407. 1915 and 1: 576. 1997 (rep.ed.); Acharya and Mukherjee, Indian J.L.Sci. 3(2): 65-71, 2014.
 12. **V. mullaha** Buchanan-Hamilton ex D. Don, Prodr. H. Nep. 141. 1825. R.R. Stewart in Nasir and Ali, Ann. Cat. Vasc. Pl. W. Pak. and Kashm. 696. 1972; Naithani, Fl. Chamoli Dist. 1: 280. 1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1: 340. 1984; Mukherjee, Fl. Pl. Darjiling 111. 1988. Hajra et al., (Ed.) in Materials for Fl. Arunachal Pradesh 1; 563. 1996; Bujarbarua et Sigh in Singh et al., Fl. Mizoram 1: 678. 2002. *Viburnum stellulatum* Wallich ex DC; C.B. Clarke in Hook. f., Fl. Brit. India 3: 4. 1880. R.A. King in Grierson and Long, Fl. Bhutan 2(3): 1357. 2001. Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1: 395. 2013.
 13. **V. nervosum** D. Don, Prodr. Fl. Nepal 141. 1825; Parker, For. Fl. Punj. ed. 3. 267. 1956; Rau, High Altitude Fl. Pl. W. Himal. 118. 1975. Naithani, Fl. Chamoli Dist. 1: 280. 1984; Chowdhery and Wadhwa, Fl. Himachal Pradesh 1: 340. 1984; Hajra et al., (Ed.) in Materials for Fl. Arunachal Pradesh 1; 564. 1996; R.A. King in Grierson and Long, Fl. Bhutan 2(3): 1358. 2001.
 14. **V. odoratissimum** Ker Gawl. In Bot. Reg. 6: t. 456. 1820. Clarke in Hook. f., Fl. Brit. India 3: 7. 1880; Hajra et al., (Ed.) in Materials for Fl. Arunachal Pradesh 1; 564. 1996.
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Naithani, Fl. Chamoli 1:280.1984; Sasidharan, Biodiversity documentation for Kerala- Flowering Plants, part 6: 209. 2004. Sharma *et al.*, Fl. Karnataka 122.1984. Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1:394.2013. *Viburnum acuminatum* Wall. ex DC., *Prodr.* 4: 325 1830. Gamble, Fl. Madras 1: 575. 1997 (rep. ed); *V. punctatum* Buch.-Ham var. *acuminatum* Clarke in Hooker f., Fl. Brit. India 3: 5. 1880.

16. **V. sempervirens** K.Koch, Hort. Dendr.300.1853; Naithani and Bennet in Ind. For. 110(7):682.1984. *V.nervosum* auct non D.Don, 1825; Hook *et* Arn., Bot. Voy. Beect.190.1833. Hajra *et al.*, (Ed.) in Materials for Fl. Arunachal Pradesh 1: 564-565.1996.
17. **V. simonsii** Hook. f. Thomson in J. Proc. Linn. Soc. Bot. 2: 177. 1858; Clarke in Hook.f., Fl. Brit. India 3:7.1880; Kanjilalet *al.*, Fl. Assam, 3:5. 1939; N. P. Balakr., Fl. Jowai: 1: 228.1981; Hajra *et al.*, (Ed.) in Materials for Fl. Arunachal Pradesh 1; 565.1996; Pal, Fl. Lower Subansiri Dist., Arunachal Pradesh 1:395.2013.

DISCUSSION

The taxonomic domain of Caprifoliaceae has been frequently revised especially in the context of *Sambucus* and *Viburnum*. These genera which are conventionally placed in the family Caprifoliaceae are presently placed in either Adoxaceae or in families of their own. The present work adopts the circumscription considered by Cronquist (1988) to include both *Sambucus* and *Viburnum* as members of the family Caprifoliaceae. Moreover the present endeavour, basically a review work, is in conformity with the circumscription of the Caprifoliaceae followed by C.B. Clarke (1882) in J.D. Hooker's *Flora of British India* since the author attempts to fulfill the objective of updating the taxon as per the territorial jurisdiction of the present day India. However the genus *Adoxa* which was included within Caprifoliaceae by C.B. Clarke is temporarily placed in its own family Adoxaceae treating it as a very close relative of Caprifoliaceae. In view of this, all the genera except *Adoxa*, viz. *Abelia*, *Leycesteria*, *Lonicera*, *Sambucus*, *Triosteum* and *Viburnum* have been considered as members of Caprifoliaceae in the present work. The species documented here are mostly distributed in the Himalayas extending from Kashmir in the Northwest to Arunachal Pradesh in the Northeast and some in the South Indian Hills. No other region of India

shows the existence of Caprifoliaceae. Both *Abelia* and *Triosteum* are represented in India by a solitary species each. *Lonicera* appears to be the most dominant one with 25 species, the next to follow being *Viburnum* with 17 species. *Leycesteria* is represented in India by 5 species while *Sambucus* has four species to its credit. The information thus gathered from Herbarium studies paved the guidelines for scheduling subsequent field survey in the regions ranging from temperate to alpine Himalaya and in temperate regions of South Indian Hills.

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