

FLORA OF HIMACHAL PRADESH

ANALYSIS

H. J. CHOWHERRY

AND

R. M. WALIWA

BOTANICAL SURVEY

OF INDIA

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**FLORA OF
HIMACHAL PRADESH
ANALYSIS**

FLORA OF INDIA

Series 2

FLORA OF HIMACHAL PRADESH

ANALYSIS

Volume 2

H. J. Chowdhery & B. M. Wadhwa



सत्यमेव जयते

BOTANICAL SURVEY OF INDIA

Department of Environment

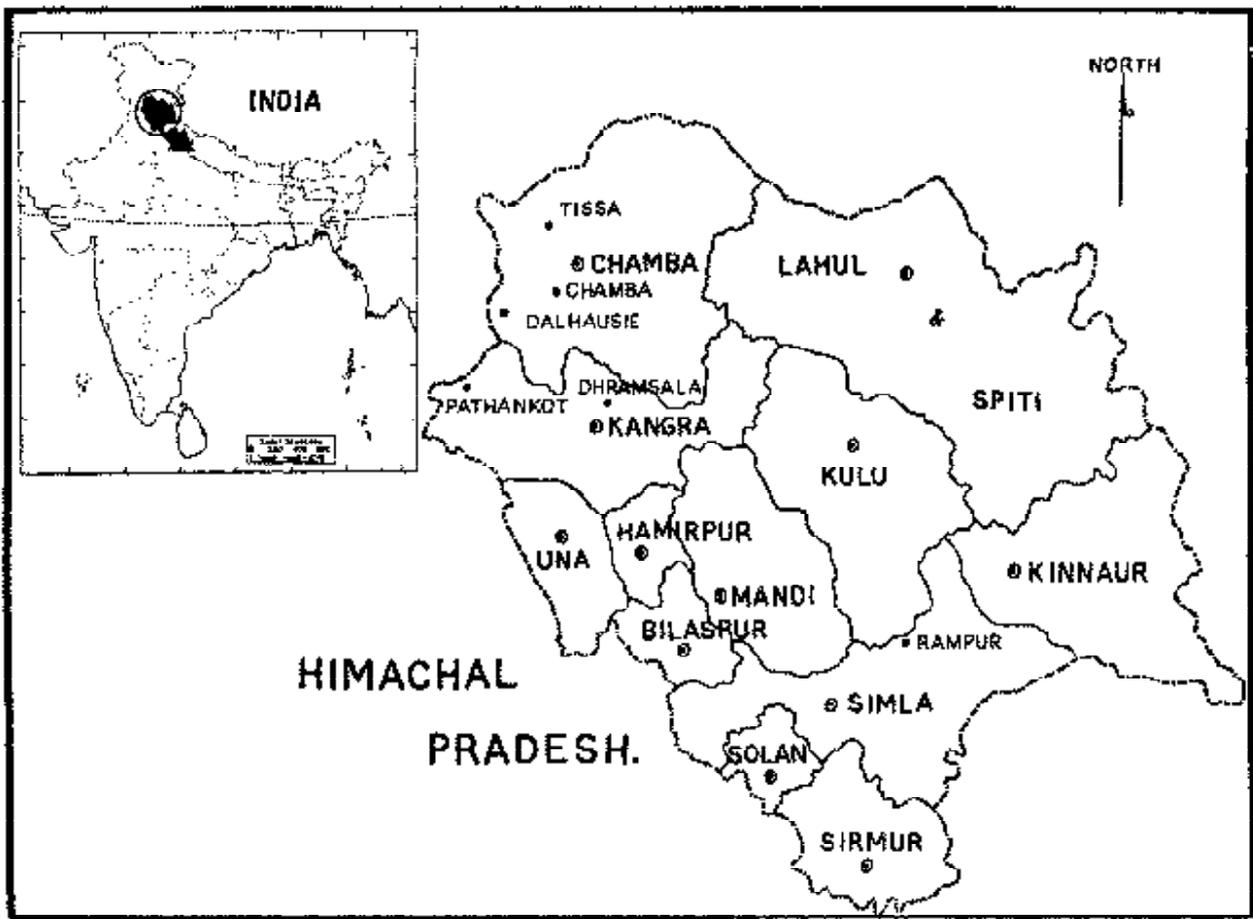
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CONTENTS

ANGIOSPERM: Dicotyledones (Cont.)	<i>Page</i>
Rubiaceae	341
Valerianaceae	351
Dipsacaceae	353
Morinaceae	354
Asteraceae	355
Campanulaceae	429
Ericaceae	434
Pyrolaceae	437
Monotropaceae	437
Plumbaginaceae	438
Primulaceae	438
Myrsinaceae	447
Sapotaceae	448
Ebenaceae	449
Symplocaceae	450
Oleaceae	451
Apocynaceae	456
Asclepiadaceae	460
Loganiaceae	467
Gentianaceae	468
Menyanthaceae	482
Polemoniaceae	483
Boraginaceae	484
Cordiaceae	496
Convolvulaceae	497
Cuscutaceae	502
Solanaceae	504
Scrophulariaceae	511
Selaginaceae	539
Orobanchaceae	540
Lentibulariaceae	541
Gesneriaceae	542
Bignoniaceae	544
Pedaliaceae	545
Martyniaceae	546
Acanthaceae	546
Verbenaceae	556

	<i>Page</i>
Phrymacea	560
Lamiaceae	561
Plantaginaceae	592
Nyctaginaceae	594
Illecebraceae	595
Amaranthaceae	596
Chenopodiaceae	601
Basellaceae	606
Phytolaccaceae	607
Polygonaceae	607
Aristolochiaceae	624
Piperaceae	624
Saururaceae	625
Lauraceae	625
Thymelaeaceae	629
Elacagnaceae	630
Loranthaceae	634
Santalaceae	635
Euphorbiaceae	635
Buxaceae	647
Daphniphyllaceae	648
Urticaceae	648
Ulmaceae	655
Cannabaceae	659
Moraceae	659
Platanaceae	665
Juglandaceae	665
Myricaceae	666
Betulaceae	666
Fagaceae	669
Salicaceae	671



RUBIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Argostemma verticillatum Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 325. 1824 ; Collett, Fl. Siml. 228. f. 70. 1902 ; Nair, Fl. Bash. Himal. 131. 1977.

Glabrous herb. Flowers white in terminal umbels, capsule 2 celled.

Fl. & Fr. : July - October.

Kangra (BSD), Kinnaur (DD).

Temperate Himalaya.

Asperula odorata L. Sp. Pl. 103. 1753 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 683. 1972.

Weak herbs.

Fl. & Fr. : May - July.

Chamba (DD), Kinnaur (DD), Kulu (DD).

Western Himalaya.

Asperula oppositifolia Reg. & Schmalh. in Pl. Nov. Fed 42. 1881. ssp. **grandiflora** Ehrend. Symb. Afghan. 4 : 131. 1959 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 683. 1972. *A. brachyantha* (non Boiss.) Hook. f. Fl. Brit. India 3 : 209. 1881. *p. p.* ; Nair, Fl. Bash. Himal. 131. 1977.

Glabrous herb. Leaves always opposite.

Fl. & Fr. : July - September.

Kinnaur (DD).

Western Himalaya.

Asperula oppositifolia Reg. & Schmalh. ssp. **pseudo-cynanchica** Ehrend. in Ann. Natur. List. Mus. Wien 56 : 132. f. 49. 51. 1948 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 683. 1972. *A. cynanchica* Ait. (non L.) sensu Hook. f. Fl. Brit. India 3 : 209. 1881 ; Nair, Fl. Bash. Himal. 131. 1977.

Glabrous, rarely pubescent herb. Flowers pink or white.

Fl. & Fr. : June August.

Chamba (BSD), Lahul and Spiti (BSD, BSIP, DD).

Western Himalaya.

Borreria articularis (L. f.) F. N. Will. in Bull. Herb. Boiss. ser. 2. 5 : 956. 1905. *Spermacoce articularis* L. f. Suppl. 119. 1781. *S. hispida* L. Sp. Pl. 102. 1753 ; Collett, Fl. Siml. 233. 1902.

Herb with hairy stem. Flowers blue or white.

Fl. & Fr. : June October.

Kangra (LWG).

North - Western Himalaya.

Borreria pusilla (Wall.) DC. 4 : 543. 1830. *Spermacoce pusilla* Wall. in Roxb. Fl. Ind. 1 : 379. 1820. *Borreria stricta* (L. f.) K. Schm. in Engl. & Prantl. Pflanzenfam. 4 (4) : 143. 1891. non Meyer. 1818 ; Nair, Fl. Bash. Himal. 132. 1977. *Spermacoce stricta* L. f. Suppl. Pl. 120. 1781 ; Hook. f. Fl. Brit. India 3 : 200. 1881 ; Collett, Fl. Siml. 233. 1902.

Minutely prickly, erect herb. Flowers white.

Fl. & Fr. : June October.

Kangra (DD), Simla (DD).

Throughout India.

Galium acutum Edgew. in Trans. Linn. Soc. Bot. 20 : 61. 1846 ; Hook. f. Fl. Brit. India 3 : 208. 1881 ; Collett, Fl. Siml. 236. 1902 ; Nair, Fl. Bash. Himal. 132. 1977. *G. himalayense* Kl. in Pr. Wald. Reise. Bot. 88. t. 73. 1862.

Glabrous, shining herb. Flowers white. Fruits smooth.

Fl. & Fr. : July - October.

Kangra (BSIP), Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya.

Galium aparine L. Sp. Pl. 108. 1753 ; Hook. f. Fl. Brit. India 3 : 205. 1881 ; Collett, Fl. Siml. 235. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 684. 1972 ; Nair, Fl. Bash. Himal. 132. 1977.

Trailing or climbing herb. Flowers white, tinged with green.

Fl. & Fr. : May September.

Chamba (BSD, RRL), Kangra (RRL, LWG), Kinnaur (BSD, DD), Kulu (LWG), Lahul and Spiti (BSD), Mandi (LWG), Simla (CDRI, LWG).

Temperate Himalaya, Kashmir to Sikkim.

Galium asperifolium Wall. in Roxb. Fl. Ind. 1 : 381. 1820 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 684. 1972. *G. mollugo* Hook. f. Fl. Brit. India 3 : 207. 1881. (non L.) *G. mollugo* L. ssp. *asperifolium* (Wall.) Kitamura in Fauna & Fl. Nepal Himal. 230. 1955 ; Collett, Fl. Siml. 235. 1902 ; Nair, Fl. Bash. Himal. 133. 1977.

Trailing herb. Flowers red.

Fl. & Fr. : May September.

Chamba (CDRI, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (DD), Simla (DD, LWG), Mandi (LWG).

Throughout the Himalaya.

Galium asperuloides Edgew. in Trans. Linn. Soc. Bot. 20 : 61. 1846 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 685. 1972 ; Nair, Fl. Bash. Himal. 132. 1977. *G. triflorum* (non Michx.) Hook. f. Fl. Brit. India. 3 : 205. 1881 ; Collett, Fl. Siml. 235. 1902.

Glabrous herb. Flowers white or tinged with yellow.

Fr. : Fr. : May August.

Chamba (BSD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSIP, DD, LWG), Lahul and Spiti, (BSD, DD), Simla (BSD, DD).

Temperate Himalaya, Kashmir to Bhutan.

Galium boreale L. Sp. Pl. 108. 1753 ; Hook. f. Fl. Brit. India 3 : 205. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 685. 1972.

Glabrous or pubescent herb. Flowers white. Fruit covered with hooked hairs.

Fl & Fr. : June September.

Chamba (BSD), Lahul and Spiti (BSD, DD, RRL).

Western temperate Himalaya.

Galium confertum Royle ex Hook. f. Fl. Brit. India 3 : 206. 1881.

Herb with woody roots, clothed with soft spreading hairs. Leaves sessile in whorls. Fruits hispid.

Fr. : Fr. : July September.

Kinnaur (DD) Type.

Galium cryptanthum Hemsley, Hook. Icon. Pl. t. 1469. 1883 ; Collett, Fl. Siml. 236. 1902 ; Nair, Fl. Bash. Himal. 132. 1977. *G. vernum* Hook. f. Fl. Brit. India 3 : 209. 1881.

Prostrate, glabrous herb. Flowers yellow or white. Fruits smooth.

Fl. & Fr. : June August.

Simla (BSD), Chamba (Hook. f.), Lahul and Spiti (DD).

Western Himalaya.

Galium elegans Wall. in Roxb. Fl. Ind. 1 : 382. 1820 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 685. 1972. *G. rotundifolium* Hook. f. Fl. Brit. India 3 : 204. 1881 (non L.) ; Collett, Fl. Siml. 234. 1902 ; Nair, Fl. Bash. Himal. 133. 1977.

Trailing herb. Flowers white, tinged with green or yellow. Fruits covered with hooked hairs.

Fl. & Fr. : May - November.

Chamba (BSD, DD, LWG), Kangra (BSD, LWG), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (BSD, DD), Mandi (LWG).

Throughout hilly regions of India.

Galium pauciflorum Bunge, Enum. Pl. Chin. Bor. 35. 1831 ; Hook. f. Fl. Brit. India 3 : 205. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 685. 1972. *G. aparine* var. *pauciflorum* (Bunge) Maxim. in Bull. Imp. Acad. Mel. Biol. 9 : 259. 1876.

Smooth slender herb. Flowers minute, white. Fruits covered with hooked hairs.

Fl. & Fr. : June - July.

Lahul and Spiti (BSD, DD).

Western Tibet and Western Himalaya.

Galium serpyllloides Royle ex Hook. f. Fl. Brit. India 3 : 207. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 685. 1972 ; Nair, Fl. Bash. Himal. 133. 1977.

Pubescent, suberect herb with woody roots. Flowers minute. Fruit densely clothed with long, woolly straight hairs.

Fl. & Fr. : July August.

Chamba (BSD, DD), Kangra (BSIP), Kinnaur (Type.).

Western Himalaya and Nepal.

Galium verum L. Sp. Pl. 107. 1753 ; Hook. f. Fl. Brit. India 3 : 208. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 386. 1972.

Rambling or erect, herb. Flowers bright yellow. Fruits glabrous,

Fl. & Fr. : June August.

Chamba (DD), Lahul and Spiti (BSD, DD, RRI).

Western Himalaya.

Galium vestitum D. Don, Prodr. Fl. Nepal. 133. 1825 ; Hook. f. Fl. Brit. India 3 : 206. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 687. 1972 ; Nair, Fl. Bash. Himal. 133. 1977.

Suberect, pubescent herb. Flowers minute.

Fl. & Fr. : July October.

Chamba (DD), Kinnaur (DD).

Western and Central Himalaya.

Hamiltonia suaveolens Roxb. Fl. Ind. 1 : 554. 1820 ; Hook. f. Fl. Brit. India 3 : 197. 1881 ; Collett, Fl. Siml. 231. f. 71. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 687. 1972 ; Nair, Fl. Bash. Himal. 133. 1977.

An erect shrub. Flowers blue-lilac or sometimes white.

Fl. & Fr. : July - October.

Chamba (DD, LWG), Kangra (DD, RRL), Kinnaur (DD), Simla (DD).

Tropical and subtropical Himalaya.

Hedyotis diffusa Willd. Sp. Pl. 1 : 556. 1797 ; T. Yamazaki in Fl. E. Himal. 1 : 309. 1966. *Oldenlandia diffusa* (Willd.) Hook. f. Fl. Brit. India 3 : 65. 1880.

Diffuse glabrous herb. Flowers Solitary.

Fl. & Fr. : August - October.

Kangra (DD).

Abundant throughout India.

Hedyotis verticillata (L) Lamk. Encycl. Meth 1 : 271. 1791 ; T. Yamazaki in Fl. E. Himal. 1 : 310. 1966. *H. hispida* Retz. Obs. Bot. 4 : 23. 1786 ; Hook. f. Fl. Brit. India 3 : 61. 1880.

Diffuse herb. Flowers in axillary clusters.

Fl. & Fr. : July - September.

Kangra (DD).

Tropical Himalaya.

Hymenodictyon excelsum (Roxb.) Wall. in Roxb. Fl. Ind. ed Carey, 2 : 149. 1824 ; Hook. f. Fl. Brit. India 3 : 35. 1880 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 687. 1972. *Cinchona excelsa* Roxb. Pl. Corom. 2 : 4. t. 106. 1799.

Deciduous tree, bark smooth. Flowers small, white, capsule on thick decurved pedicels.

Fl. & Fr. : June - August.

Simla (DD).

Dry hilly base of Himalaya.

Hymenopogon parasiticus Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 157. 1824 ; Hook. f. Fl. Brit. India 3 : 34. 1880.

Small straggling, epiphytic shrub. Corolla lobes villous.

Fl. & Fr. : July - October.

Simla (DD).

Temperate Himalaya.

Leptodermis lanceolata Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 191. 1824 ; Hook. f. Fl. Brit. India 3 : 198. 1881 ; Collett, Fl. Siml. 232. 1902 ; T. Yamazaki in Fl. E. Himal. 1 : 311. 1966 ; Stewart, Ann. Cat. Vas. Fl. W. Pak. & Kash. 387. 1972 ; Nair, Fl. Bash. Himal. 134. 1977.

Rigid, glabrous, erect shrub. Flowers white, sometimes tinged with purple.

Fl. & Fr. : June - October.

Chamba (BSD, DD, LWG, RRL), Kangra (BSD, DD, LWG, RRL), Kinnaur (BSD, DD), Simla (BSD, LWG).

Temperate Himalaya, Kashmir to Bhutan.

Leptodermis parkeri Dunn in Kew Bull. 1920 : 206. 1920.

Fl. & Fr. : June - November.

Chamba (DD).

Western Himalaya.

Leptodermis virgata Edgew. in Aitch. Cat. Pb. Plants 70. 1869 ; Hook. f. Fl. Brit. India 3 : 198. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak & Kash. 687. 1972.

Slender, rigid, much branched shrub. Flowers pubescent, purplish.

Fl. & Fr. : February - October.

Kulu (DD).

Western Himalaya.

Mitragyna parvifolia (Roxb.) Korth. Obs. Naocl. Ind. 19. 1839 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 668. 1972. *Nauclea parvifolia* Roxb. Pl. Corom. 1 : 40. 1795. *Stephegyne parvifolia* (Roxb.) Korth. Verh. Nat. Gesch. Nederl. 161. 1839 42 ; Hook. f. Fl. Brit. India 3 : 25. 1880.

Glabrous or pubescent tree.

Fl. & Fr. : June - November.

Kangra (BSD, DD), Simla (BSIP).

Throughout the drier part of India.

Neanotis calycina (Wall. ex Hook. f.) W.H. Lewis in Ann. Miss. Bot. Gard. 53. 37. 1966. *Anotis calycina* Wall. ex Hook. f. Fl. Brit. India 3 : 73. 1880 ; Collett, Fl. Siml. 230. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 682. 1972 ; Nair, Fl. Bash. Himal. 131. 1977.

Slender herb. Flower white or pale - lilac.

Fl. & Fr. : August - October.

Kinnaur (BSD), Simla (DD).

Temperate Himalaya.

Oldenlandia coccinea Royle, Ill. Bot. Himal. Mount. 241. t. 53. 1835 ; Hook. f. Fl. Brit. India 3 : 69. 1880 ; Collett, Fl. Siml. 230. 1902 ; Nair, Fl. Bash. Himal. 134. 1977.

Minutely bristly, rigid, erect herb. Flowers bright red.

Fl. & Fr. : August - October.

Chamba (DD), Kinnaur (DD), Simla (DD).

Western temperate Himalaya.

Oldenlandia corymbosa L. Sp. Pl. 119. 1753 ; Hook. f. Fl. Brit. India 3 : 64. 1880 ; Collett, Fl. Siml. 230. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 688. 1972 ; Nair, Fl. Bash. Himal. 134. 1977. *Hedyotis corymbosa* (L.) Lamk. Ency. Meth. 1 : 272. 1791.

Minutely bristly herb. Flowers white. Capsule globose not ribbed.

Fl. & Fr. : July - September.

Kangra (RRL), Kulu (BSD).

An abundant weed throughout India.

Oldenlandia crystallina Roxb. Fl. Ind. 1 : 422. 1820 ; Hook. f. Fl. Brit. India 3 : 65. 1880 ; Collett, Fl. Siml. 230. 1902 ; Nair, Fl. Bash. Himal. 134. 1977.

Nearly glabrous herb. Flowers white. Capsule bell shaped, prominently ribbed.

Simla (Nair, 1977 & Collett, 1902).

Pavetta indica L. Sp. Pl. 110. 1753 ; Hook. f. Fl. Brit. India 3 : 150. 1880.

Glabrous, pubescent or tomentose herb. Flowers white, fragrant.

Fl. & Fr. : June - September.

Kangra (BSD), Kulu (DD), Mandi (LWG).

Throughout India.

Pavetta tomentosa Roxb. ex. Sm. in Rees. Cyclop. 26. No. 2. 1819. Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 688. 1972. *P. indica* var. *tomentosa* (Roxb.) Hook. f. Fl. Brit. India 3 : 150. 1881.

Herb. Leaves puberulous above. Cymes pubescent, or tomentose.

Fl. & Fr. : July - October.

Kangra (BSD, DD).

Throughout India.

Randia tetrasperma (Roxb.) Benth. & Hook. f. in Gen. Pl. 2 : 88. 1873 ; Hook. f. Fl. Brit. India 3 : 109. 1880 ; Collett, Fl. Siml. 233. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 689. 1972 ; Nair, Fl. Bash. Himal. 135. 1977. *Aidia tetrasperma* (Roxb.) T. Yamazaki in Fl. E. Himal. 689. 1972. *Himalrandia tetrasperma* (Wall. ex Roxb.) Yamazaki in Journ. Jab. Bot. 45 : 340. 1970. *Gardenia tetrasperma* Wall. ex Roxb. Fl. Ind. 1 : 703. 1820.

Erect, rigid bush. Flowers greenish - white, fragrant.

Fl. & Fr. : June - September.

Chamba (DD), Kangra (BSD, RRL), Kulu (LWG), Mandi (LWG). Simla (BSD).

Subtropical Himalaya.

Rubia cordifolia L. Sys. Nat. ed. 12. 3 : 229. 1768 ; Hook. f. Fl. Brit. India 3 : 202. 1881 ; Collett, Fl. Siml. 233. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 689. 1972 ; Nair, Fl. Bash. Himal. 135. 1977.

Climbing herb. Flowers small, dark red. Fruits succulent.

Fl. & Fr. : July - October.

Chamba (CDRI, DD), Kangra (BSIP), Kinnaur (DD), Kulu (BSD), Lahul and Spiti (DD), Mandi (DD), Simla (DD, CDRI), Solan (DD).

Throughout hilly regions of India.

Rubia himalayense Kl. in Bot. Ergeb. Waldem. Reise 86. t. 76. 1862 ; Hook. f. Fl. Brit. India 3 : 203. 1871 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 689. 1972 ; Nair, Fl. Bash. Himal. 135. 1972.

Slender herb. Leaves elliptic ovate. Flowers funnel shaped.

Fl. & Fr. : July September.

Kinnaur (DD).

Western Himalaya.

Rubia infundibularis Hemsl. & Lace in J. Linn. Soc. 28 : 324. 1891 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 689. 1972. *R. albicaulis* Boiss. var. *stenophylla* Boiss. Fl. Orient. 3 : 19. 1875 ; Hook. f. Fl. Brit. India 3 : 204. 1881.

Stout, woody herb. Flowers minute, yellow.

Fl. & Fr. : August October.

Chamba (DD).

North western India.

Rubia tibetica Hook. f. Fl. Brit. India 3 : 204. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 690. 1972.

Herb. with long woody, brown roots. Flowers large.

Fl. & Fr. : June September.

Lahul and Spiti (BSD, BSIP, DD).

Western Tibet and Himachal Pradesh.

Wendlandia heynei (R. & S.) Sant. & Merch. in Bull. Bot. Sur. India 3 : 110. 1961. *Rondeletia heynei* R. & S. Syst. 5 : 234. 1819. *W. exserta* (Roxb.) DC. Prodr. 4 : 411. 1830 ; Hook. f. Fl. Brit. India 3 : 37. 1880 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 690. 1972. *Rondeletia exserta* Roxb. Fl. Ind. 1 : 523. 1820.

Small tree. Flowers white, fragrant. Capsule white, tomentose.

Fl. & Fr. : April June.

Kangra (DD), Simla (DD), Sirmur (BSD).

Dry forests of tropical Himalaya.

Wendlandia puberula DC. Prodr. 4 : 412 ; 1830. Hook. f. Fl. Brit. India 3 : 37. 1880 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 690. 1972.

Small tree. Panicles pubescent.

Fl. & Fr. : June - September.

Chamba (DD), Kangra (DD), Mandi (LWG).

Dry forests of tropical Himalaya.

VALERIANACEAE

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Valeriana hardwickii Wall. in Roxb. Fl. Ind. 1. 166. 1820 ; Clarke in Hook. f. Fl. Brit. India 3 : 213. 1881 ; Collett, Fl. Siml. 237. 1902 ; Nasir and Ali in Fl. West Pakistan 101 : 6. 1976 ; Nair, Fl. Bash. Himal. 135. 1977. *V. tenera* Wall ex DC. Prodr. 4 : 640. 1830. *V. acuminata* Royle, Ill. Bot. Himal. Mount. 241. 1835.

Pubescent herb. Flowers white.

Fl. & Fr. : June - October.

Chamba (BSD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD, RRL), Simla (DD).

Temperate Himalaya.

Valeriana hardwickii Wall. var. *hoffmeisteri* (Kl.) Clarke in Hook. f. Fl. Brit. India 3 : 213. 1881 ; Nasir and Ali in Fl. West Pakistan 101 : 76. 1976. *V. hoffmeisteri* Kl. in Bot. Ergeb. Waldem Reise. 84. 1862.

Herb. Flowers pinkish - white.

Fl. & Fr. : June - September.

Chamba (DD).

Himalaya.

Valeriana himalayana Grub. in Not. Syst. Herb. Inst. Bot. Acad. Sci. U.R.S.S. 19 : 344. 1959 ; Nasir and Ali in Fl. West Pakistan 101 :

70. 1976. *V. dioica* Clarke in Hook. f. Fl. Brit. India 3 : 211. 1881. *p.p.* (non L.). *V. pusilla* Royal, Ill. Bot. Himal. Mount. 241. 1835 *nom. nud.* Clarke in Hook. f. Fl. Brit. India 3 : 211. 1881.

Herb. Flowers pink white.

Fl. & Fr. : June August.

Chamba (BSD), Kangra (BSIP), Lahul and Spiti (BSD, DD).

Temperate Western Himalaya.

Valeriana jaeschkei Clarke in Hook. f. Fl. Brit. India 3 : 212. 1881 ; Nasir and Ali in Fl. West Pakistan 101 : 11. 1976.

Herb. Leaves radical, numerous at flowering time. Flowers small. Fruits hairy.

Fl. & Fr. : July October.

Lahul and Spiti (DD).

Western Himalaya.

Valeriana jatamansi Jones in Asiat. Res. 2 : 416. 1790 ; Nasir and Ali in Fl. West Pakistan 101 : 3. 1976 ; Nair, Fl. Bash. Himal. 135. 1977. *V. wallichii* DC. Mem. Valer. 15. 15. t. 4. 1832 ; Clarke in Hook. f. Fl. Brit. India 3 : 213. 1881 ; Collett, Fl. Siml. 237. 1902.

Pubescent herb. Flowers white or tinged with pink, often unisexual male and female on different plants.

Fl. & Fr. : April - October.

Chamba (BSD, DD, RRL), Kangra (CDRI), Kinnaur (BSD, DD), Lahul and Spiti (DD, RRL), Mandi (LWG), Simla (BSD, DD, LWG).

Temperate Himalaya

Valeriana pyrolifolia Decne. in Jacquem. Voy. Ind. 85. 1844 ; Clarke in Hook. f. Fl. Brit. India 3 : 212. 1881 ; Collett, Fl. Siml. 237. 1902 ; Nasir and Ali in Fl. West Pakistan 101 : 15. 1976.

Pubescent herb. Leaves all subentire, radical petioled, cauline sessile. Fruit glabrous.

Fl. & Fr. : May June.

Kulu (DD), Simla (DD).

Temperate Himalaya.

DIPSACACEAE

B.M. WADHWA AND H.J. CHOWDHERY

Dipsacus inermis Wall. in Roxb. Fl. Ind. ed. 1. 367. 1820 ; Clarke in Hook. f. Fl. Brit. India 3 : 217. 1881 ; Collett, Fl. Siml. 240. 1902 ; Nasir in Fl. West Pakistan 94 : 9. 1975. *D. strictus* D. Don, Prodr. Fl. Nepal. 160 : 1825 ; Clarke in Hook. f. Fl. Brit. India 3 : 217. 1881 ; Nair, Fl. Bash. Himal. 136. 1977.

Herb with stiff bristles or hairs. Flowers numerous, white.

Fl. & Fr. : July October.

Chamba (DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Simla (CDRI, DD).

Temperate Himalaya.

Dipsacus inermis Wall. in Roxb. Fl. Ind. ed. 1. 367. 1820 var. *mitis* (D. Don) Nasir in Fl. West Pakistan 94 : 10. 1975. *D. mitis* D. Don, Prodr. Fl. Nepal. 161. 1825 ; Nair, Fl. Bash. Himal. 136. 1977. *D. inermis* var. B Wall. in Roxb. Fl. Ind. ed 1. 367. 1820 ; Clarke in Hook. f. Fl. Brit. India 3 : 217. 1881.

Hairy herb. Leaves pinnatifid. Flowers white.

Fl. & Fr. : June September.

Kinnaur (BSD), Kulu (BSD).

Temperate Himalaya.

Scabiosa speciosa Royle, Ill. Bot. Himal. Mount. 245. t. 55. f. 2. 1835 ; Clarke in Hook. f. Fl. Brit. India 3 : 219. 1881 ; Nasir in Fl. West Pakistan : 3. 1975. Nair, Fl. Bash. Himal. 137. 1977.

Herb with pubescent leafy stem. Flowers bright mauve. Calyx bristles barbellate, nearly black.

Fl. & Fr. : July August.

Chamba (DD), Lahul and Spiti (DD).

Temperate Himalaya.

MORINACEAE

B.M. WADHWA AND H.J. CHOWDHURY

Morina coulteriana Royle. Ill. Bot. Himal. Mount. 245. 1835 ; Clarke in Hook. f. Fl. Brit. India 3 : 215. 1881 ; Collett, Fl. Siml. 240. 1902 ; Nasir in Fl. West Pakistan 67 : 1. 1974 ; Nair, Fl. Bash. Himal. 136. 1977. *M. brevifolia* Edgew. in Trans. Linn. Soc. 20 : 62. 1846.

Perennial herb. Leaves spinous - toothed, glabrous, Flowers yellow.

Fl. & Fr. : June - September.

Chamba (DD), Kinnaur (BSD), Lahul and Spiti (BSD, CDRI, DD, RRL), Simla (DD).

Subalpine Himalaya.

Morina longifolia Wall. ex DC. Prodr. 4 : 644. 1830 ; Clarke in Hook. f. Fl. Brit. India 3 : 216. 1881 ; Collett, Fl. Siml. 240. 1902 ; Nasir in Fl. West Pakistan 67 : 3. 1974 ; Nair, Fl. Bash. Himal. 136. 1977.

Perennial herb. Flowers deep pink.

Fl. & Fr. : June - November

Chamba (DD), Kangra (DD), Kinnaur (BSD, DD), Mandi (BSIP), Simla (BSD, DD, RRL).

Temperate and alpine Himalaya.

Morina persica L. Sp. Pl. 28. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 216. 1881 ; Nasir in Fl. West Pakistan 67 : 3. 1974 ; Collett, Fl. Siml. 239. 1902. Nair, Fl. Bash. Himal. 136. 1977. *M. wallichiana* Royle, Illus. Bot. Himal. Mount. 345. 1835. *M. persica* L. ssp. *turcica* Hal. Ost. Bot. Zeitschr. 41 : 409. 1891.

Herb. Leaves very prickly. Flowers white or faintly tinged with pink.

Fl. & Fr. : June - September.

Kinnaur (DD), Lahul and Spiti (DD), Simla (DD).

Western Himalaya, from Kashmir to Kumaon.

Morina polyphylla Wall. ex. DC. Prodr. 4 : 644. 1830 ; Clarke in Hook. f. Fl. Brit. India 3 : 216. 1881.

Tall herb. Lower leaves double spinous toothed, glabrous.

Fl. & Fr. : May September.

Lahul and Spiti (DD), Simla (DD).

Temperate Himalaya.

ASTERACEAE

H. J. CHOWDHERY

Acanthospermum hispidum DC. Prodr. 5 : 522. 1836 ; Nair, Fl. Bash. Himal. 138. 1977.

Herbs. Leaves ovate, acute, cuneate at base, hairy. Florets yellow.

Fl. & Fr. : July September.

Kinnaur (DD), Simla (LWG).

North Western Himalaya.

Achillea millefolium L. Sp. Pl. 899. 1753 ; Hook. f. Fl. Brit. India 3 : 312. 1881 ; Collett, Fl. Siml. 265. 1902 ; Nair, Fl. Bash. Himal. 138. 1977.

Erect, pubescent herbs. Stem furrowed.

Fl. & Fr. : May September.

Chamba (BSD, DD, RRL), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD, DD, LWG), Lahul and Spiti (BSD, DD, RRL), Simla (BSD, DD).

Western Himalaya, Kashmir to Kumaon.

Adenocaulon himalaicum Edgeworth in Trans. Linn. Soc. 20 : 64. 1846. *Adenocaulon bicolor* Hook. sensu Hook. f. Fl. Brit. India 3 : 302. 1881.

Erect herbs with thick fibrous root. Leaves with grey, appressed cottony tomentum beneath. Heads in glandular panicles.

Fl. & Fr. : July - September.

Kulu (BSD, DD), Simla (DD).

Temperate Himalaya.

Adenostemma parviflorum (Bl.) DC. Prodr. 5 : 111. 1836 ; Nair, Fl. Bash. Himal. 138. 1977. *Adenostemma viscosum* Forst. var. *parviflora* (Bl.) Clarke ex Hook. f. Fl. Brit. India 3 : 242. 1881. *p.p.* *A. viscosum* (non Forst.) Collett, Fl. Siml. 246. 1902.

Erect, glandular - pubescent or glabrous herbs. Leaves coarsely toothed. Heads white.

Fl. & Fr. : August - October.

Kangra (DD, RRL), Kinnaur (BSD, DD), Solon (DD).

Throughout India.

Ageratum conyzoides L. Sp. Pl. 839. 1753 ; Hook. f. Fl. Brit. India 3 : 243. 1881.

Erect hairy herb. Leaves opposite, stalked, lanceolate. Heads numerous. Flowers pale blue or white. Achenes angled, black, viscid.

Fl. & Fr. : May - September.

Kangra (RRL), Kulu (LWG).

Throughout India.

Ainsliaea aptera DC. Prodr. 7 : 14. 1838 ; Hook. f. Fl. Brit. India 3 : 388. 1881 ; Collett, Fl. Siml. 276. f. 82. 1902 ; Nair, Fl. Bash. Himal. 138. 1977.

Villous, slender herbs with long petioled, triangular or orbicular leaves. Heads in interrupted spikes or branched panicles.

Fl. & Fr. : March - September.

Chamba (DD, RRL), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (DD, LWG).

Temperate Himalaya.

Ainsliaea latifolia (D. Don) Schultz. Bip. in Jahresber. Pollichia 18 19 : 169. 1861 ; Nair, Fl. Bash. Himal. 139. 1977. *Liatris latifolia* D. Don, Prodr. Fl. Nep. 169. 1825. *A. pteropoda* DC. Prodr. 7 : 14. 1838 ; Hook. f. Fl. Brit. India 3 : 338. 1881 ; Collett, Fl. Siml. 277. 1902.

Tomentose, cottony or hairy herbs. Leaves with long winged petiole, hairy or white - tomentose beneath. Heads in spikes. Achenes 10 ribbed. Pappus pale brown.

Fl. & Fr. : March - July.

Chamba (DD, LWG), Kinnaur (DD), Simla (BSIP, DD, LWG).

Temperate Himalaya, Himachal Pradesh to Bhutan.

Anaphalis adnata DC. Prodr. 6 : 274. 1838 ; Hook. f. Fl. Brit. India 3 : 282. 1881 ; Collett, Fl. Siml. 256. 1902 ; Nair, Fl. Bash. Himal. 139. 1977.

Herbs with white silky or cottony wool. Leaves thick, lower surface white. Heads white.

Fl. & Fr. : August - September.

Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya, Himachal Pradesh to Bhutan.

Anaphalis busua (Buch. Ham. ex D. Don) DC. Prodr. 6 : 275 1838 ; Nair, Fl. Bash. Himal. 139. 1977. *Gnaphalium busua* Buch. - Ham. ex D. Don, Prodr. Fl. Nep. 173. 1825. *Anaphalis araneosa* DC. Prodr. 6 : 275. 1838 ; Hook. f. Fl. Brit. India 3 : 283. 1881 ; Collett, Fl. Siml. 256. 1902.

Herb with winged stem due to decurrent leaf bases. Leaves linear. Heads white.

Fl. & Fr. : August - October.

Chamba (DD, RRL), Kinnaur (BSD), Kulu (BSD), Lahul and Spiti (BSD), Simla (DD).

Temperate Himalaya, Himachal Pradesh to Bhutan.

Anaphalis contorta (D. Don) Hook. f. Fl. Brit. India 3 : 284. 1881 ; Collett, Fl. Siml. 256. 1902 ; Nair, Fl. Bash. Himal. 140. 1977. *Antennaria contorta* D. Don in B. Reg. 7 : t. 605. 1821 et Prodr. Fl. Nep. 175. 1825.

Slender, stout, woolly below herbs with stems branching from the base. Leaves cottony on both sides. Heads in dense, terminal corymbs, yellowish white.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSD, DD), Simla (BSD, DD).

Temperate and subalpine Himalaya, Kashmir to Sikkim.

Anaphalis conefolia Hook. f. *Fl. Brit. India* 3 : 280. 1881 ; Nair, *Fl. Bash. Himal.* 140. 1977.

Herb with softly woolly or cottony stems. Leaves linear oblong or lanceolate and half - amplexicaul. Heads white.

Fl. & Fr. : June - September.

Chamba (DD), Lahul and Spiti (BSIP, DD).

Temperate and alpine Himalaya, Kashmir to Sikkim.

Anaphalis margaritacea (L.) Benth. in Benth. et Hook. f. *Gen. Pl.* 2 : 303. 1873 ; Clarke, *Comp. Ind.* 103. 1876 ; Kitam. in *Fl. E. Himal.* 2 : 132. 1971. *Gnaphalium margaritaceum* L. *Sp. Pl.* 850. 1753. *Anaphalis cinnamomea* Clarke, *Comp. Ind.* 104. 1876 ; Hook. f. *Fl. Brit. India* 3 : 281. 1881 ; Collett, *Fl. Siml.* 256. f. 77. 1902.

Robust, leafy herbs. Leaves densely clothed with white grey wool beneath.

Fl. & Fr. : March - September.

Kinnaur (BSD, DD), Simla (BSIP, DD).

Temperate Himalaya, Kashmir to Sikkim and Bhutan.

Anaphalis nepalensis (Spreng.) Hand. *Maz. Symb. Sin.* 1099. 1936 ; Nair, *Fl. Bash. Himal.* 140. 1977. *Helichrysum nepalensis* Spreng. *Syst.* 3 : 485. 1826. *Anaphalis nubigena* DC. *Prodr.* 6 : 272. 1838 ; Hook. f. *Fl. Brit. India* 3 : 279. 1881 ; Collett, *Fl. Siml.* 255. 1902.

Herbs softly woolly or cottony.

Fl. & Fr. : June - September.

Chamba (DD), Kangra (DD), Kinnaur (DD), Kulu (BSD, DD), Lahul and Spiti (BSD, BSIP, DD, RRL), Simla (DD).

Alpine Himalaya and Tibet.

Anaphalis royleana DC. Prodr. 6 : 272. 1838 ; Hook. f. Fl. Brit. India 3 : 280. 1881 ; Nair, Fl. Bash. Himal. 140. 1977.

Herbs with several stems from the base. Leaves linear oblong, puberulous above woolly below. Heads white.

Fl. & Fr. : June - September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD), Chandra valley (BSIP).

Alpine Himalaya.

Anaphalis triplinervis (Sims) Clarke, Comp. Ind. 105. 1876 ; Hook. f. Fl. Brit. India 3 : 281. 1881. *Antennaria triplinervis* Sims in B. Mag. 51 : t. 2468. 1824.

Stout, flexuous, leafy herbs. Leaves densely clothed with white wool. Heads white.

Fl. & Fr. : August - September.

Kangra (BSD, DD), Kinnaur (BSD), Kulu (DD), Simla (DD).

Temperate Himalaya, Kashmir to Bhutan.

Anaphalis triplinervis (Sims) Clarke var. *intermedia* (DC). Airy-Shaw in Curtis Bot. Mag. 158 : t. 9393. 1935 ; Nair, Fl. Bash. Himal. 140. 1977. *Antennaria triplinervis* var. *intermedia* DC. Prodr. 6 : 272. 1838. *Anaphalis nubigena* DC. var. *intermedia* (DC.) Hook. f. Fl. Brit. India 3 : 280. 1881 ; Collett, Fl. Siml. 255. 1902.

Tufted herbs. Heads corymbose, crowded.

Fl. & Fr. : June - September.

Kulu (DD), Lahul and Spiti (BSD), Simla (DD).

Alpine Himalaya and Tibet.

Anthemis cotula L. Sp. Pl. 894. 1753 ; Hook. f. Fl. Brit. India 3 : 312. 1881 ; Nair, Fl. Bash. Himal. 141. 1977.

Erect, glabrous or hairy herbs. Leaves gland dotted. Heads white yellow.

Fl. & Fr. : May August.

Kinnaur (BSD), Lahul and Spiti (BSD, RRL).

Throughout India.

Aretium lappa L. Sp. Pl. 816. 1753 ; Hook. f. Fl. Brit. India 3 : 359, 1881 ; Collett, Fl. Siml. 271. 1902 ; Nair, Fl. Bash. Himal. 141. 1977.

Coarse, erect, tall herbs. Leaves cottony beneath. Heads purple white.

Fl. & Fr. : May October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD, LWG, RRL).

Western Himalaya.

Artemisia biennis Willd. Phyt. 11. 170. 39. 1794 ; Hook. f. Fl. Brit. India 3 : 324. 1881.

Succulent, glabrous or pilose herbs.

Fl. & Fr. : July August.

Chandra valley (BSIP), Lahul and Spiti (BSD, DD).

Western Tibet, Kumaon, Himachal Pradesh and Sikkim.

Artemisia desertorum Spreng. Syst. 3 : 490. 1826 ; Hook. f. Fl. Brit. India 3 : 322. 1881.

Suberect, foetid herbs. Leaves sessile. Heads dark - green.

Fl. & Fr. : March - August.

Kinnaur (DD).

Western Tibet and Himachal Pradesh.

Artemisia dracunculus L. Sp. Pl. 849. 1753 ; Hook. f. Fl. Brit. India 3 : 321. 1881 ; Nair, Fl. Bash. Himal. 141. 1977.

Tall herbs with grooved and ribbed stems. Heads clustered in threes.

Fl. & Fr. : May October.

Kinnaur (BSD), Lahul and Spiti (BSD, DD, RRL).

Western Tibet and Himachal Pradesh.

Artemisia glauca Pallas ex Willd. Sp. Pl. 3 : 1831. 1803 ; Hook. f. Fl. Brit. India 3 : 322. 1881 ; Nair, Fl. Bash. Himal. 141. 1977.

Perennial, pubescent herbs. Leaves trifid. Heads subglobose.

Fl. & Fr. : July - October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSIP), Simla (DD).

Western Himalaya.

Artemisia laciniata Willd. Sp. Pl. 3 : 1843. 1803 ; Hook. f. Fl. Brit. India 3 : 326. 1881.

Erect, hoary herbs. Leaves puberulous on both surfaces.

Fl. & Fr. : July - September.

Chamba (BSD), Kinnaur (BSD), Lahul and Spiti (DD).

Western Tibet and Western Himalaya.

Artemisia macrocephala Jacquem. ex Bess. in Bull. Soc. Nat. Mosc. 9 : 28. 1836 ; Hook. f. Fl. Brit. India 3 : 329. 1881.

Dwarf, hairy tomentose herbs. Leaves hoary on both the sides. Heads yellow.

Fl. & Fr. : June - September.

Kangra (LWG), Lahul and Spiti (BSD, BSIP, DD).

Himachal Pradesh and Western Tibet.

Artemisia maritima L. Sp. Pl. 846. 1753 ; Hook. f. Fl. Brit. India 3 : 323. 1881 ; Nair, Fl. Bash. Himal. 141. 1977.

Hoary, tomentose, aromatic shrubs with woody root stock. Leaves white. Heads reddish

Fl. & Fr. : May - August.

Simla (BSIP, DD).

Western Himalaya, Kashmir to Kumaon.

Artemisia maritima L. var. **thomsoniana** Clarke, Comp. Ind. 160. 1876 ; Jeffrey in Kew Bull. 19 : 400. 1965. *A. brevifolia* Wall. ex DC. Prodr. 7 : 103. 1838. *A. maritima* L. var. *maritima* forma *subereota* Ledeb. Fl. Ross. 2 : 572. 1845.

Differs from *A. maritima* L. in having woolly leaves and sub-erect stems.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kinnaur (BSD, DD, LWG), Lahul and Spiti (BSD, BSIP, DD, RRL), Simla (DD, LWG).

Western Himalaya.

Artemisia minor Jacquem. ex Bess. in Bull. Soc. Nat. Mosc. 9 : 28. 1836 ; Hook. f. Fl. Brit. India 3 : 329. 1881.

Strongly scented, dwarf, silky, tomentose, densely tufted herbs. Leaves grey.

Fl. & Fr. : July - October.

Lahul and Spiti (DD).

Western and Eastern Tibet, Himachal Pradesh and Sikkim.

Artemisia moorcroftiana Wall. ex DC. Prodr. 6 : 117. 1838 ; Hook. f. Fl. Brit. India 3 : 327. 1881.

Hoary, tomentose herbs with creeping root stocks. Leaves white tomentose beneath. Heads numerous, purple.

Fl. & Fr. : July - August.

Lahul and Spiti (BSD).

Western Himalaya and Western Tibet.

Artemisia nilagirica (C. B. Clarke) Pamp. Nuov. Giorn. Bot. Ital. 33 : 452. 1926. *A. vulgaris* L. var. *nilagirica* Clarke, Comp. Ind. 162. 1876.

Profusely branched under shrubs. Leaves deeply lobed with a pair of stipule like appendages. Flowers white.

Fl. & Fr. : July - October.

Chamba (BSD), Kinnaur (BSD), Kulu (BSD), Lahul and Spiti (BSD), Simla (BSD), Moralkanda (LWG).

Throughout the hilly regions of India.

Artemisia parviflora Buch. Ham. ex Roxb. Hort. Beng. 61. 1814. nom. nud. ex D. Don, Prodr. Fl. Nep. 181. 1825 ; Roxb. Fl. Ind. 3 : 420.

1832 ; Hook. f. Fl. Brit. India 3 : 322. 1881 ; Collett, Fl. Siml. 266. 1902 ; Nair, Fl. Bash. Himal. 142. 1977.

Hairy or glabrous herbs. Lower leaves sessile, wedge shaped. Heads brownish yellow.

Fl. & Fr. : August - September.

Chamba (DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD, LWG).

Temperate Himalaya, Kashmir to Sikkim.

Artemisia roxburghiana Wall. ex Besser in Bull. S. Imp. Nat. Mosc. 9 : 57. 1836. *Artemisia roxburghiana* Wall. ex Besser var. *grata* (Wall.) Hook. f. Fl. Brit. India 3 : 326. 1881. *A. grata* Wall. ex Besser. in Bull. Soc. Nat. Mosc. 9 : 57. 1836.

Herbs with purple stems. Leave segments broad, white tomentose.

Fl. & Fr. : April - July.

Simla (LWG).

Western Himalaya.

Artemisia rutifolia Steph. ex Spreng. Syst. Veg. 3 : 488. 1826. *Artemisia falconeri* Clarke ex Hook. f. Fl. Brit. India 3 : 328. 1881.

Hoary, tomentose, stiff herbs. Lower cauline leaves petioled, upper sessile.

Fl. & Fr. : April - July.

Lahul and Spiti (RRL).

Western Tibet and Himachal Pradesh.

Artemisia sacrorum Ledeb. in Mem. Acad. Petersb. 5 : 571. 1805 ; Hook. f. Fl. Brit. India 3 : 326. 1881 ; Nair, Fl. Bash. Himal. 142. 1977.

Erect, hoary shrubs. Leaves long petioled, white pubescent on both the sides, aromatic. Heads yellow.

Fl. & Fr. : July - September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD).

Western Tibet, Tibetan region of Kumaon and Himachal Pradesh.

Artemisia salsoloides Willd. Sp. Pl. 3 : 1832. 1803 ; Hook. f. Fl. Brit. India 3 : 321. 1881.

Glabrous or sparsely villous herbs with pale shining stems. Leaves glaucous.

Fl. & Fr. : July - October.

Lahul and Spiti (DD).

Western Tibet from Rupch (North of Kumaon) to westward and Himachal Pradesh.

Artemisia scoparia Waldst. & Kit. Descr. Pl. Rar. Hung. 1 : 66. t. 65. 1801 ; Hook. f. Fl. Brit. India 3 : 323. 1881 ; Collett, Fl. Siml. 266. 1902 ; Nair, Fl. Bash. Himal. 143. 1977.

Glabrous, slender, much branched herb. Heads numerous, small, yellow.

Fl. & Fr. : July - October.

Chamba (BSD, CDRI, DD), Kinnaur (BSD, DD), Kulu (BSD, CDRI, DD), Lahul and Spiti (BSD, DD, RRL), Simla (DD, LWG).

Western Himalaya, Western Tibet and upper Gangetic plains.

Artemisia sieversiana Ehrh. ex Willd. Sp. Pl. 3 : 1845. 1804 ; Hook. f. Fl. Brit. India 3 : 329. 1881.

Erect, hoary - pubescent, angled herbs with ribbed stem. Leaves hoary on both sides.

Fl. & Fr. : April - August.

Lahul and Spiti (DD).

Western Himalaya and Western Tibet.

Artemisia stricta Edgew. in Trans. Linn. Soc. 20 : 73. 1846 ; Hook. f. Fl. Brit. India 3 : 323. 1881 ; Nair, Fl. Bash. Himal. 143. 1977.

Diffuse, villous herbs with spreading, prostrate branches. Heads subglobose, sessile, in spiked clusters.

Fl. & Fr. : August - September.

Kinnaur (BSD), Lahul and Spiti (BSD, DD).

Tibetan passes of Himalaya, Himachal Pradesh, Kumaon and Sikkim.

Artemisia tournefortiana Reichenb. Icon. Exot. 1 : 6. t. 5. 1824 ; Hook. f. Fl. Brit. India 3 : 324. 1881 ; Nair, Fl. Bash. Himal. 143. 1977.

Erect, stout, glabrous herbs. Leaves linear, oblong. Heads clustered.

Fl. & Fr. : May August.

Kinnaur (DD), Lahul and Spiti (BSD).

Western Himalaya and Western Tibet.

Artemisia vestita Wall. ex DC. Prodr. 6 : 106. 1828 ; Hook. f. Fl. Brit. India 3 : 326. 1881 ; Collett, Fl. Siml. 267. f. 79. 1902 ; Nair, Fl. Bash. Himal. 143. 1977.

Hoary pubescent, erect herb with grooved stems. Leaves fern like, upper surface dark - green pubescent and lower white - tomentose.

Fl. & Fr. : August October.

Kinnaur (BSD), Kulu (CDRI, RRL), Lahul and Spiti (RRL), Simla (LWG).

Western Himalaya.

Artemisia vulgaris L. Sp. Pl. 848. 1753 ; Hook. f. Fl. Brit. India 3 : 325. 1881.

Tall, aromatic, shrubby herbs. Leaves large, white tomentose below. Heads clustered.

Fl. & Fr. : April - July.

Chamba (BSIP, LWG), Simla (LWG).

Throughout the hilly regions of India.

Aster albescens (DC.) Wall. ex Hand. Mazz. in Act. Hort. Goth. 12 : 205. 1938 ; Nair, Fl. Bash. Himal. 144. 1977. *Amphirhaphis albescens* DC. Prodr. 5 : 343. 1836. *Microglossa albescens* (DC.) Clarke, Comp. Ind. 59. 1876 ; Hook. f. Fl. Brit. India 3 : 257. 1881.

Stout, erect shrubs with faintly grooved branches. Leaves lanceolate, hoary beneath. Heads pinkish-white, pappus red, not longer than the achenes.

Fl. & Fr. : June October.

Chamba (BSD, DD), Kinnaur (BSD, DD).

Temperate Himalaya.

Aster asperulus Nees, *Aster* 281. 1832 ; Hook. f. *Fl. Brit. India* 3 : 252. 1881 ; Nair, *Fl. Bash. Himal.* 144. 1977.

Laxly hairy or glabrate, erect herbs. Leaves on winged stalks. Heads few, large on slender stalks. Pappus hairs white or reddish.

Fl. & Fr. : August October.

Kinnaur (BSD, DD), Kulu (DD), Simla (BSIP, DD, LWG), Solan (DD).

Western Himalaya.

Aster asteroides (DC.) O. Kuntze, *Rev. Gen. Pl.* 315. 1891. *Heterochaeta asteroides* DC. *Prodr.* 5 : 282. 1836. *Aster heterochaeta* Benth. in Benth. & Hook. f. *Gen. Pl.* 2 : 272. 1873 ; Hook. f. *Fl. Brit. India* 3 : 250. 1881.

Tomentose, wooly herbs with tuberous roots. Heads solitary, very large, ligules purple-blue. Pappus double.

Fl. & Fr. : July September.

Simla (BSD).

Alpine Himalaya and Western Tibet.

Aster diplostephioides (DC.) Clarke, *Comp. Ind.* 45. 1876 ; Hook. f. *Fl. Brit. India* 3 : 251. 1881. *Heterochaeta diplostephioides* DC. *Prodr.* 5 : 282. 1836.

Robust, erect, villous herbs. Leaves sessile, erect, lanceolate. Achenes silky, pappus reddish.

Fl. & Fr. : July - September.

Chamba (DD).

Alpine Himalaya.

Aster falconeri (Clarke) Hutch. in *Gard. Chron. Ser.* 3. 47 : 398. 1910. *A. diplostephioides* var. *falconeri* Clarke, *Comp. Ind.* 45. 1876.

Herb. Ornamental.

Fl. & Fr. : April August.

Lahul and Spiti (DD).

Alpine Himalaya.

Aster flaccidus Bunge in Mem. Acad. Sci. St. Petersb. 2 : 599. 1835 ;
A. heterochaeta Clarke, Comp. Ind. 44. 1876 ; Hook. f. Fl. Brit. India 3 :
250. 1881 (*p. p.*). *A. tibeticus* Hook. f. Fl. Brit. India 3 : 251. 1881 (*p. p.*).

Tomentose or hairy with erect leafy stem or stemless herbs. Heads solitary, very large. Pappus white or reddish.

Fl. & Fr. : June September.

Chamba (BSD), Kinnaur (BSD), Chandra Valley (BSIP), Lahul and Spiti (BSD, DD).

Alpine Himalaya and Western Tibet.

Aster laka Clarke, Comp. Ind. 49. 1876 ; Hook. f. Fl. Brit. India 3 :
253. 1881.

Short, stout herbs with woody, tomentose rootstock. Leaves with sheathing petioles, broad. Heads large, solitary. Achenes hairy. Pappus white-reddish.

Fl. & Fr. : June September.

Kangra (Hook. f. FBI).

Western Himalaya.

Aster molliusculus Wall. ex Clarke, Comp. Ind. 45. 1876 ; Hook. f. Fl. Brit. India 3 : 251. 1881 ; Collett, Fl. Siml. 249. f. 75. 1902 ; Nair, Fl. Bash. Himal. 144. 1977.

Pubescent or sparsely villous herbs. Stems many, erect from woody rootstock. Heads long-stalked. Achenes hairy.

Fl. & Fr. : April - July.

Chamba (DD), Kangra (RRL), Kinnaur (DD), Simla (DD).

Western Himalaya.

Aster peduncularis Wall. ex Nees, Gen. & Sp. Ast. 24. 1832. *A. asperulus* (DC.) Hook. f. Fl. Brit. India 3 : 252. 1881. *Diplopappus asperulus* DC. 5 : 277. 1836.

Erect, laxly hairy herbs. Heads few, large, on slender peduncles. Achenes hairy.

Fl. & Fr. : July August.

Simla (DD, LWG).

Western Himalaya.

Aster pseudamellus Hook. f. Fl. Brit. India 3 : 249. 1881 ; Nair, Fl. Bash. Himal. 144. 1977.

Scaberulous herbs with slender stems. Leaves sessile. Achenes pubescent. Pappus white.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur (DD), Lahul and Spiti (DD).

Western Himalaya.

Aster stracheyi Hook. f. Fl. Brit. India 3 : 250. 1881.

Stoloniferous, pubescent, villous herbs. Achenes silky pubescent. Pappus reddish.

Fl. & Fr. : June September.

Simla (LWG).

Western alpine Himalaya upto Bhutan.

Aster thomsonii Clarke, Comp. Ind. 48. 1876 ; Hook. f. Fl. Brit. India 3 : 252. 1881 ; Collett, Fl. Siml. 250. 1902 ; Nair, Fl. Bash. Himal. 145. 1977.

Laxly villous, erect, branched herbs. Leaves subsessile, coarsely serrate. Heads few, large, long petioled. Achenes pubescent. Pappus reddish.

Fl. & Fr. : June September.

Chamba (BSD, DD), Kinnaur (DD), Lahul and Spiti (BSIP), Simla (DD, LWG).

Western Himalaya.

Aster tibeticus Hook. f. Fl. Brit. India 3 : 251. 1881.

Pubescent or slightly villous, slender, erect herbs. Heads bright blue. Achenes glabrescent. Pappus white.

Fl. & Fr. : July September.

Chandra valley (BSIP), Lahul and Spiti (DD).

Western Himalaya and Tibet.

Bellis perennis L. Sp. Pl. 886. 1753.

Daisy-cultivated for flowers in the Gardens.

Fl. & Fr. : July August.

Chamba (BSD, DD).

Bidens bipinnata L. Sp. Pl. 832. 1753. *B. pilosa* L. var. *bipinnata* (L.) Hook. f. Fl. Brit. India 3 : 309. 1881. *B. pilosa* L. var. *decomposita* (Wall. ex DC.) Hook. f. Fl. Brit. India 3 : 309. 1881. *B. decomposita* Wall. ex DC Prodr. 5 : 602. 1836.

Erect herbs. Leaves thinly hairy. Heads yellow.

Fl. & Fr. : July September.

Kinnaur (DD).

Throughout India.

Bidens biternata (Lour.) Merrill & Sherff in Bot. Gaz. 88 : 293. 1929 ; Nair, Fl. Bash. Himal. 145. 1977. *Coreopsis biternata* Lour. Fl. Cochinch. 508. 1790. *B. wallichii* DC. Prodr. 5 : 598. 1836 ; Collett, Fl. Siml. 264. 1702. *B. pilosa* L. var. *wallichii* (DC.) Clarke, Comp. Ind. 141. 1876 ; Hook. f. Fl. Brit. India 3 : 209. 1881. *B. chinensis* Willd. Sp. Pl. 3 : 1719. 1800.

Annual, erect herbs. Stem terete, grooved, hairy. Leaves bipinnatifidly compound.

Fl. & Fr. : July September.

Kangra (RRL).

Throughout India.

Bidens pilosa L. Sp. Pl. 832. 1753 ; Hook. f. Fl. Brit. India 3 : 309. 1881 ; Collett, Fl. Siml. 264. 1902 ; Nair, Fl. Bash. Himal. 145. 1977.

Erect herbs, glabrous, pilose or pubescent. Leaves pinnate. Heads white.

Fl. & Fr. : May - October.

Chamba (DD), Kinnaur (BSD, DD), Simla (LWG), Solan (DD),

Throughout India.

Bidens tripartita L. Sp. Pl. 831. 1753 ; Hook. f. Fl. Brit. India 3 : 309. 1881 ; Collett, Fl. Siml. 264. 1902 ; Nair, Fl. Bash. Himal. 145. 1977.

Stout, erect herbs. Leaves digitately 3-lobed. Heads yellow. Achenes glabrous.

Fl. & Fr. : August - October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (DD).

Central and Western Himalaya.

Blainvillea acmella (L.) Philipson in Blumea 6 : 350. 1950 ; Nair, Fl. Bash. Himal. 145. 1977. *Verbesisna acmella* L. Sp. Pl. 901. 1753. *Blainvillea latifolia* (L. f.) DC. ex Wight. Contrib. 17. 1834 ; Hook. f. Fl. Brit. India 3 : 305. 1881 ; Collett, Fl. Simil. 263. 1902. *Eclipta latifolia* L. f. Suppl. Pl. 378. 1781.

Stiff, roughly pubescent, erect herbs. Heads yellow - white.

Fl. & Fr. : August - October.

Kinnaur (BSD), Simla (BSIP).

Western India.

Blumea hieraciifolia (D. Don) DC. in Wt. Contrib. Bot. Ind. 15. 1834 ; Hook. f. Fl. Brit. India 3 : 263. 1881. *Erigeron hieraciifolium* D. Don, Prodr. Fl. Nep. 272. 1835.

Tomentose, villous or silky, woody, robust herb. Leaves oblong, crenulate, silky villous beneath. Heads yellow. Achenes hairy.

Common throughout India.

Blumea lacera (Burm. f.) DC. in Wight, Contrib. Bot. Ind. 14. 1834 ; Hook. f. Fl. Brit. India 3 : 263. 1881. *Conyza lacera* Burm. f. Fl. Ind. 180, t. 59, f. 1. 1768.

Hairy, villous or glandular erect herbs. Heads yellow. Achenes glabrate.

Throughout the plains of India.

Blumea membranacea DC. Prodr. 5 : 440. 1836 ; Hook. f. Fl. Brit. India 3 : 265. 1881.

Pubescent, tall, slender, much branched herbs. Leaves large, membranous.

Common throughout India.

Blumea mollis (D. Don) Merr. Philipp. Journ. Sci. 5 : 395. 1910. *Erigeron molle* D. Don, Prodr. Fl. Nep. 172. 1825. *Blumea wightiana* DC. in Wt. Contrib. Bot. Ind. 14 : 1834 et Prodr. 5 : 435. 1836 ; Hook. f. Fl. Brit. India 3 : 261. 1881.

Strongly aromatic, erect viscid herbs. Stems several from woody base. Achenes hairy.

Fl. & Fr. : April - June.

Camba (DD), Kangra (RRL), Kinnaur (BSD), Sirmur (BSD).

Throughout plains of India and outer Himalaya.

Blumea obliqua (L.) Druce in Rep. Bot. Exch. Club. Brit. 1916. 4 : 609. 1917. *Erigeron obliquum* L. Mant. Pl. 2 : 110. 1767.

Softly hairy herbs. Heads solitary, yellow. Pappus reddish.

Fl. & Fr. : May - July.

Kulu (BSIP).

Throughout India.

Brachyactis pubescens (DC.) Aitch. & Clarke in Journ. Linn. Soc. Bot. 18 : 68. 1880 ; Nair, Fl. Bash. Himal. 146. 1977. *Conyza pubescens* DC. Prodr. 5 : 281. 1836. f. *Brachyactis robusta* Benth. in Hook. Ic. Pl. 12 6. sub. t. 1106. 1876 ; Hook. f. Fl. Brit. India 3 : 254. 1881.

Glandular, pubescent, erect herbs. Heads long pedicelled.

Fl. & Fr. : July - September.

Chamba (DD), Kulu (DD), Lahul and Spiti.

Western Himalaya, Kashmir to Kumaun.

Brachyactis roylei (DC). Wendelbo in Nytt Mag. B. 1 : 62. 1952. *Conyza roylei* DC. Prodr. 5 : 381. 1836. *Brachyactis umbrosa* (Kar. & Kir.) Benth. in Hook. Icon. Pl. t. 1106. 1872 ; Hook. f. Fl. Brit. India 3 : 253. 1881.

Small, glandular, villous herbs, branching from the base. Achenes sparingly silky. Pappus reddish.

Fl. & Fr. : July September.

Kinnaur (BSD, DD), Lahul and Spiti (BSD, BSIP).

Western Himalaya, Kashmir to Himachal Pradesh and Tibet.

Brachyactis menthodora Benth. in Hook. Icon. 12. t. 1106. 1876 ; Hook. f. Fl. Brit. India 3 : 253. 1881. *B. indica* Clarke, Comp. Ind. 49. 1876. *Erigeron anomalum* DC. Prodr. 5 : 293. 1836.

Tall, erect, glandular pubescent herbs with smell of mint. Achenes glabrous. Pappus reddish.

Alpine Himalaya, Kashmir to Sikkim.

Calendula arvensis L. Sp. Pl. ed. 2. 1303. 1762 ; Hook. f. Fl. Brit. India 3 : 358. 1881.

Pubescent herbs. Leaves subspathulate, entire. Achenes curved, beaked.

Fl. & Fr. : May July.

Kulu (DD), Lahul and Spiti (DD).

Kashmir and Himachal Pradesh.

Callistephus hortensis Cass. in Dict. Sci. Nat. 37 : 491. 1825. *Callistephus chinensis* (L.) Nees, Gen. & Sp. Aster. 222. 1832.

Fl. & Fr. : August October.

Simla (DD).

Himalaya.

Carduus onopordioides Fisch. ex Bieb. Fl. Taur. Cauc. 3 : 552. 1899 ; Nair, Fl. Bash. Himal. 146. 1977. *Carduus nutans* Hook. f. Fl. Brit. India 3 : 361. 1881 (non L.) ; Collett, Fl. Siml. 272. 1902.

Tall, stout herbs with grooved stems. Leaves spinous. Heads in drooping clusters, pink or purple.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD), Simla (BSD, DD).

Western Himalaya.

Carpesium abrotanoides L. Sp. Pl. 860. 1753 ; Hook. f. Fl. Brit. India 3 : 301. 1881 ; Collett, Fl. Siml. 261. 1902 ; Nair, Fl. Bash. Himal. 146. 1977.

Erect, slender, leafy herbs. Stem pubescent or glabrate. Heads yellow.

Fl. & Fr. : August October.

Chamba (DD), Kinnaur (DD), Kulu (DD), Simla (DD, LGW), Lahul and Spiti (RRL).

Temperate Himalaya.

Carpesium cernuum L. Sp. Pl. 859. 1753. var. ***cernuum*** ; Hook. f. Fl. Brit. India 3 : 300. 1881 ; Collett, Fl. Siml. 260. 1902 ; Nair, Fl. Bash. Himal. 147. 1977. *C. nepalense* Less. in Linnæa 6 : 234. 1832.

Pubescent herbs with pubescent or more or less cottony branches. Heads yellow, drooping with broad, leafy bracts.

Fl. & Fr. : August October.

Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (BSD, DD, LWG).

Temperate Himalaya, Khasi and Nilgery hills.

Carpesium cernuum L. var. ***glandulosa*** Herb. Ind. Or Hook. f. & Thom. ; Clarke, Comp. Ind. 130. 1876 ; Hook. f. Fl. Brit. India 3 : 301. 1881.

Hirsute or villous herbs. Leaves long petioled and ovate cordate.

Himalaya and Sikkim (Hook. f.).

Carpesium pedunculosum Wall. ex DC. Prodr. 6 : 11. 1838 ; Nair, Fl. Bash. Himal. 147. 1977. *C. cernuum* L. var. ***pedunculosa*** Clarke, Comp. Ind. 131. 1876 ; Hook. f. Fl. Brit. India 3 : 301. 1881.

Glabrous or loosely hairy herbs. Leaves with winged petioles.

Fl. & Fr. : May September.

Simla (DD).

North Western Himalaya.

Carpesium trachelifolium Less. in *Linnaea* 6 : 233. 1831 ; Hook. f. *Fl. Brit. India* 3 : 301. 1881 ; Collett, *Fl. Siml.* 260. 1902 ; Nair, *Fl. Bash. Himal.* 147. 1977.

Slender, pubescent or hirsute herbs, more or less covered with soft, long hairs. Leaves sinuate toothed. Heads few on long stalks.

Fl. & Fr. : August September.

Chamba (DD), Simla (DD).

Temperate Himalaya.

Centipeda minima (L.) A. Br. & Aschers. *Ind. Sem. Hort. Berol. App.* 6. 1867. *Artemisia minima* L. *Sp. Pl.* 849. 1753. *Centipeda orbicularis* Lour. *Fl. Cobhinch.* 493. 1790 ; Hook. f. *Fl. Brit. India* 3 : 317. 1881.

Prostrate or decumbent ascending, densely leafy herbs with cottony young stem parts. Heads white, sessile. Achenes, oblong, patently hairy on angles.

Fl. & Fr. : June September.

Chamba (DD), Mandi (BSIP).

Throughout the plains of India.

Centratherum anthelminticum (L.) O. Kuntze, *Rev. Gen. Pl.* 1 : 320. 1891 ; Nair, *Fl. Bash. Himal.* 147. 1977. *Conyza anthelmintica* L. *Sp. Pl. ed.* 2. 1207. 1763. *Vernonia anthelmintica* (L.) Willd. *Sp. Pl.* 3 : 1803 ; Hook. f. *Fl. Brit. India* 3 : 236. 1881.

Erect, aromatic herbs with terete, glandular - pubescent stems. Leaves glabrescent or thinly hairy. Heads purple. Achenes teret, thinly hairy. Pappus brownish - white.

Fl. & Fr. : April August.

Kinnaur (BSD).

Throughout India.

Chrysanthellum indicum DC. Prodr. 5 : 631. 1836 ; Hook. f. Fl. Brit. India 3 : 310. 1881 ; Nair, Fl. Bash. Himal. 147. 1977.

Glabrous herbs with branches spreading from the roots. Leaves succulent. Achenes cuneate, compressed.

Cultivated for flowers.

Fl. & Fr. : April - October.

Kulu (BSIP), Simla (DD).

Upper gangetic plains and Western Himalaya.

Chrysanthemum leucanthemum L. Sp. Pl. 888. 1753 ; Nair, Fl. Bash. Himal. 148. 1977.

Cultivated, the ox eye daisy.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kangra (LWG), Kulu (DD), Mandi (RRL), Simla (DD, LWG),

Chrysanthemum pyrethroides (Kar. & Kir.) B. Fedtsch. Rastit. Turkest. 737. 1915. *Richteria pyrethroides* Kar. & Kir. in Bull. Soc. Imp. Nat. Misc. 120. 1842. *Chrysanthemum richteria* Benth. in Benth. & Hook. f. Gen. Pl. 2 : 426. 1873 ; Hook. f. Fl. Brit. India. 3 : 315. 1881.

Dwarf, laxly villous or woolly herbs with many short tufted stems. Achenes many, ribbed.

Fl. & Fr. : June - September.

Lahul and Spiti (DD).

Western Tibet, Ladakh and Himachal Pradesh.

Chrysanthemum stoliczkaei Clarke, Comp. Ind. 147. 1876 ; Hook. f. Fl. Brit. India 3 : 314. 1881 ; Nair, Fl. Bash. Himal. 148. 1977.

Viscid, pubescent, shrubby, branched herbs. Heads long peduncled, involucrel bracts pubescent or viscid, purple. Achenes strongly 5 - ribbed.

Fl. & Fr. : July - August.

Kulu (CDRI), Simla (BSD).

Western Tibet and Himachal Pradesh.

Chrysanthemum tibeticum Hook. f. & Thoms. in Clarke, Comp. Ind. 147. 1876 ; Hook. f. Fl. Brit. India 3 : 314. 1881. *Pyrethrum roylei* DC. Prodr. 8 : 56. 1838.

Puberulous, viscid, shrubby herbs. Heads solitary, ligules large, white or pink.

Fl. & Fr. : May August.

Lahul and Spiti (BSIP).

Western Tibet and Himachal Pradesh.

Cichorium intybus L. Sp. Pl. 813. 1753 ; Hook. f. Fl. Brit. India 3 : 391. 1881. *C. intybus* L. var. *eglandulosum* Freyn. & Sint. Osterr. Bot. Zei. 44 : 295. 1894. *C. intybus* L. var. *glabratum* (Presl.) Gren. & Godron f. *eglandulosum* (Freyn & Sint.) Bornm. Beih. Bot. Centrbl. 60 B : 216. 1940.

Herbs with thick fleshy tap roots and terete, ribbed stem. Heads sessile. Achenes turbinate, truncate.

Fl. & Fr. : April June.

Chamba (DD), Una (BSD).

North Western India.

Cirsium argyranthum DC. Prodr. 6 : 640. 1838 ; Nair, Fl. Bash. Himal. 148. 1977. *Cnicus argyranthum* (DC.) Hook. f. Fl. Brit. India 3 : 362 1881 ; Collett, Fl. Siml. 273. 1902.

Erect, spinescent herbs with cottony stems. Heads densely fascicled, white. Pappus white.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (DD), Simla (DD, LWG).

Temperate Himalaya.

Cirsium arvense (L.) Scop. Fl. Carn. ed. 2. 2 : 126. 1772 ; Nair, Fl. Bash. Himal. 148. 1977. *Serratula arvensis* L. Sp. Pl. 820. 1753. *Cnicus arvensis* (L.) Hoffm. Deutschl. Fl. ed. 2. 2 : 130. 1804 ; Hook. f. Fl. Brit. India 3 : 362. 1881 ; Collett, Fl. Siml. 272. 1902.

Thistle like erect herbs with cottony stems. Leaves sessile, white lanate or woolly beneath. Heads purple. Achenes oblong, glabrous with a truncate apex. Pappus brownish white.

Fl. & Fr. : July August.

Kangra (RRL), Lahul and Spiti (BSD, BSIP, RRL), Simla (DD, LWG).

Western Himalaya, Western Tibet, Bengal and Gangetic plains.

Cirsium falconeri (Hook. f.) Petrak in Biblioth. Bot. 78 : 9. 1912. *Cnicus falconeri* Hook. f. Fl. Brit. India 3 : 363. 1881.

Tall, robust, villous herbs. Leaves spinescent, setose, membranous. Heads globose, drooping, densely woolly.

Fl. & Fr. : April July.

Kinnaur (DD).

Western Himalaya.

Cirsium involucreatum DC. Prodr. 6 : 639. 1838. *Cnicus involucreatus* (DC.) Hook. f. Fl. Brit. India 3 : 362. 1881.

Tall, stout, erect herbs. Leaves setulose above, white tomentose beneath.

Fl. & Fr. : April July.

Kulu (BSD, LWG), Mandi (LWG), Simla (LWG).

Temperate Himalaya.

Cirsium wallichii DC. Prodr. 6 : 643. 1838 ; Nair, Fl. Bash. Himal. 148. 1977. *Cnicus wallichii* (DC.) Hook. f. Fl. Brit. India 3 : 363. 1881 ; Collett, Fl. Siml. 273. 1902.

Erect, thistle like pubescent herbs. Leaves sessile. Heads terminal in dense fascicles- Pappus dirty - white or brown.

Fl. & Fr. : May September.

Chamba (DD), Kangra (CDRI), Kinnaur (BSD), Kulu (RRL), Lahul and Spiti (BSD), Mandi (BSD), Simla (BSD, DD, LWG).

Temperate Himalaya.

Cirsium wallichii DC. var. **platylepis** Hook. f. Fl. Brit. India 3 : 364. 1881.

Very spinous herbs. Leaves sessile. Heads fascicled.

Fl. & Fr. : July August.

Lahul and Spiti (BSD).

Kashmir, Ladakh and Himachal Pradesh.

Conyza aegyptiaca (L.) W. Ait. Hort. Kew ed. 1. 3 : 183. 1789 ; Hook. f. Fl. Brit. India 3 : 258. 1881. *Erigeron aegyptiacus* L. Mant. Pl. 2 : 112. 1767.

Erect herbs with glandular pubescent or villous stem. Leaves thinly pubescent. Achenes sparingly hairy. Pappus reddish.

Fl. & Fr. : April June.

Chamba (DD).

Tropical Western Himalaya.

Conyza japonica (Thunb.) Less. (Syn. Comp. 204. 1832. nom. inval.) ex DC. Prodr. 5 : 383. 1836 ; Hook. f. Fl. Brit. India 3 : 258. 1881 ; Collett, Fl. Siml. 252. 1902 ; Nair, Fl. Bash. Himal. 149. 1977.

Erect, white villous herbs with ribbed stem. Leaves oblong spathulate. Heads yellowish. Achenes thinly hairy.

Fl. & Fr. : May July.

Kinnaur (BSD), Simla (BSIP).

Tropical Himalaya.

Conyza stricta Willd. Sp. Pl. 3 : 1922. 1803 ; Hook. f. Fl. Brit. India 3 : 258. 1881 ; Collett, Fl. Siml. 252. 1902 ; Nair, Fl. Bash. Himal. 149. 1977. *C. stricta* Willd. var. *pinnatifida* (D. Don) Kitamura in Fl. Eastern Himal. 337. 1966.

Erect, viscid pubescent or villous herbs. Stem ribbed, glandular villous. Heads yellow. Achenes minute. Pappus white.

Fl. & Fr. : August October.

Chamba (DD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD), Simla (BSD, BSIP, DD).

Sub tropical Himalaya and Khasia hills.

Conyza viscidula Wall. ex DC. Prodr. 5 : 383. 1836 ; Hook. f. Fl. Brit. India 3 : 258. 1881 ; Collett, Fl. Siml. 252. 1902 ; Nair, Fl. Bash. Himal. 149. 1977.

Glandular, pubescent herbs. Leaves lanceolate, tapering at both ends. Achenes glabrous. Pappus reddish.

Fl. & Fr. : August September.

Kulu (CDRI).

Subtropical Himalaya.

Cotula anthemoides L. Sp. Pl. 891. 1753 ; Hook. f. Fl. Brit. India 3 : 316. 1881.

Prostrate or decumbent diffused herbs with much branched, glabrous stem. Heads yellow.

Fl. & Fr. : May September.

Kulu (LWG), Simla (LWG).

Gangetic plain, Himachal Pradesh and Sikkim,

Cotula australis (Sieber ex Sprengel) Hook. f. Bot. Antart. Voy. 2 (1) : 128. 1852.

Pubescent, procumbent, much branched, flaccid herbs. Leaves sessile, deeply pinnatifid. Heads solitary, terminal, long peduncled.

Fl. & Fr. : April September.

Kulu (BSD, DD), Simla (BSD, DD, LWG).

Himalaya and plains of India.

Cousinia thomsoni Clarke, Comp. Ind. 213. 1876 ; Hook. f. Fl. Brit. India 3 : 360. 1881 ; Nair, Fl. Bash. Himal. 149. 1977.

Tall, stout, erect, cottony herbs. Heads suberect or nodding, involueral bracts woolly.

Fl. & Fr. : June September.

Kinnaur (DD), Kulu (BSIP), Lahul and Spiti (BSD, DD, RRL).

Western Himalaya.

Cremanthodium arnicoides (DC. ex Royle) R. Good in Jour. Linn. Soc. Bot. 48 : 288. 1929. *Ligularia arnicoides* DC. ex Royle, Ill. Bot. Himal. Mount. 251. t. 60. f. 2. 1835. *Senecio arnicoides* Wall. ex DC. Prodr. 6 : 314. 1836 ; Hook. f. Fl. Brit. India 3 : 351. 1881.

Stout, glabrous or sparingly cottony herbs. Leaves coriaceous. Heads solitary or in simple or branched racemes.

Fl. & Fr. : July September.

Kinnaur (DD), Kangra (DD), Lahul and Spiti (DD).

Western and Central Himalaya.

Cremanthodium decaisnei Clarke, Comp. Ind. 168. 1876 ; Hook. f. Fl. Brit. India 3 : 331. 1881.

Pubescent, small, robust herbs. Leaves radical, reniform. Heads yellow. Achenes slender. Pappus white.

Fl. & Fr. : July September.

Lahul and Spiti (DD).

Alpine Himalaya.

Cremanthodium plantagineum Max. in Bull. Acad. Petersb. 27 : 482. 1881. forma *ellissii* (Hook. f.) R. Good in Journ. Linn. Soc. Bot. 48 : 293. 1929. *Werneria ellissii* Hook. f. Fl. Brit. India 3 : 357. 1881.

Herbs with tuberous roots. Leaves coriaceous. Achenes glabrous.

Western Himalaya - Chamba (Hook. f.).

Cremanthodium plantagineum Max. forma *maximowiczii* R. Good in Journ. Linn. Soc. Bot. 48 : 293. 1927. *Senecio arnicoides* var. *frigida* Hook. f. Fl. Brit. India 3 : 351. 1881.

Stout, dwarf herbs. Leaves radical, very coriaceous. Heads solitary.

Ladakh, Kinnaur and Western Tibet (Hook. f.).

Cremanthodium reniforme Benth. in Hook. Icon. Pl. 12 : 37 t. 1141. 1873 ; Hook. f. Fl. Brit. India 3 : 330. 1881.

Glabrous, scapigerous herbs. Leaves long petioled, reniform or orbicular. Scapes sparsely hairy with black hairs.

Fl. & Fr. : August - September.

Chamba (DD), Lahul and Spiti (DD).

Himalaya.

Crepis flexuosa (DC.) Benth. in Benth. & Hook. f. Gen. Pl. 2 (2) : 515, 1873. *Barkhausia flexuosa* DC. Prodr. 7 : 155. 1838. *Crepis glauca* Hook. f. Fl. Brit. India 3 : 394. 1881 (non Benth.).

Densely corymbosely branched herbs. Heads small, yellow. Achenes slender, pale. Pappus white.

Fl. & Fr. : May - September.

Kinnaur (BSD), Kulu (DD), Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Crepis multicaulis Ledeb. Fl. Altaica 4 : 125. 1833.

Pubescent herbs. Leaves inconspicuously pubescent, dentate or lyrate.

Fl. & Fr. : April - August.

Chandra valley (BSIP).

Himalaya.

Crepis multicaulis Ledeb. ssp. *congesta* (Regel) Babo. Univ. Cal. Pub. 19 : 401. 1941.

Pubescent herbs.

Fl. & Fr. : June - July.

Lahul and Spiti (DD).

Himalaya.

Crepis multicaulis Ledeb. ssp. *genuina* (Regel) Babo. Univ. Cal. Pub. 19 : 401. 1941.

Fl. & Fr. : June - September.

Lahul and Spiti (BSD).

Himalaya.

Crepis sancta (L.) Babcock in Univ. Calif. Publ. Bot. 22. : 736. f. 236 - 239. 1947 ; Nair, Fl. Bash. Himal. 149. 1977. *Hieracium sanctum* L. Cent. Pl. 2 : 30. 1756, Collett, Fl. Siml. 282. 1902.

Hispid or glandular herbs. Leaves all radical. Heads yellow. Pappus white.

Fl. & Fr. : July - September.

Simla (DD).

Western Himalaya.

Cyathocline purpurea (D. Don) O. Kuntze, *Rev. Gen. Pl.* 1 : 333. 1891 ; Nair, *Fl. Bash. Himal.* 150. 1977. *Tanacetum purpureum* D. Don, *Prodr. Fl. Nepal.* 181. 1825. *Cyathocline lyrata* Cass. *Ann. Soc. Sci. Nat. Ser. 1.* 17 : 420. 1829 ; Hook. f. *Fl. Brit. India* 3 : 246. 1881.

Erect, strongly aromatic, glandular hairy herbs with reddish - purple tinged stem. Leaves glabrescent or thinly hairy. Heads rose purple. Pappus absent.

Fl. & Fr. : March - June.

Chamba (DD), Kulu (BSIP, DD), Mandi (BSD).

Western Himalaya.

Cynara scolymus L. *Sp. Pl.* 827. 1753.

Cultivated in Gardens.

Simla (CDRI).

Dichrocephala bicolor (Roth) Schlecht. in *Linnaea* 25 : 209. 1852. *Cotula bicolor* Roth, *Cat. Bot.* 2 : 116. 1800. *D. latifolia* DC. in *Wt. Contrib. Bot. Ind.* 11. 1834 ; Hook. f. *Fl. Brit. India* 3 : 245. 1881. *D. integrifolia* (W. Ait.) O. Kuntze, *Rev. Gen. Pl.* 1 : 333. 1891. *Hippia integrifolia* W. Ait. *Hort. Kew.* ed. 2. 279. 1789 (non L.f. 1781).

Erect or decumbent, aromatic herbs with pubescent stem. Heads greenish yellow, corolla persistent. Achenes smooth, glandular at the top.

Fl. & Fr. : June - September.

Chamba (DD), Kangra (BSD, CDRI, RRL), Kulu (DD), Mandi (BSD, BSIP), Simla (BSD, DD, LWG).

Tropical and subtropical Himalaya.

Doronicum falconeri Clarke ex Hook. f. *Fl. Brit. India* 3 : 333. 1881.

Stout, glabrate or puberulous herbs. Leaves spatulate. Heads 1-2 glandular villous.

Fl. & Fr. : June - August.

Lahul and Spiti (DD).

Kashmir, Himachal Pradesh and Western Tibet.

Echinops cornigerous DC. Prodr. 6 : 525. 1838 ; Hook. f. Fl. Brit. India 3 : 358. 1881 ; Collett, Fl. Siml. 370. 1902 ; Nair, Fl. Bash. Himal. 150. 1977.

Erect, spinescent herbs. Leaves lanate above, densely cottony beneath. Achenes villous.

Fl. & Fr. : August - October.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Simla (CDRI, DD, LWG).

Western Himalaya.

Echinops echinatus Roxb. Fl. Ind. 3 : 447. 1832 ; DC. in Wight, Contrib. 24. 1834 ; Hook. f. Fl. Brit. India 3 : 358. 1881 ; Collett, Fl. Siml. 270. 1902 ; Nair, Fl. Bash. Himal. 150. 1977.

Tomentose herbs with stem branching from the base, wide spreading. Heads white with several projecting spines.

Fl. & Fr. : July - September.

Lahul and Spiti (BSD).

Upper Gangetic plains and North - Western Himalaya.

Echinopsis niveus Wall. ex Royle, Ill. Bot. Himal. Mount. 251. t. 56. f. 1. 1835 ; DC. Prodr. 6 : 526. 1838 ; Hook. f. Fl. Brit. India 3 : 359. 1881 ; Collett, Fl. Siml. 271. 1902 ; Nair, Fl. Bash. Himal. 150. 1977.

Erect, tomentose herbs. Leaves pinnately divided into numerous linear, spiny segments with recurved margins. Heads devoid of projecting spines.

Fl. & Fr. : June - October.

Simla (BSIP, DD, LWG).

North - Western Himalaya.

Eclipta prostrata (L.) L. Mant. Pl. 2 : 286. 1771 ; Nair Fl. Bash. Himal. 151. 1977. *Verbesina prostrata* L. Sp. Pl. 902. 1753. *V. alba* L. Sp. Pl. 902. 1759. *E. erecta* L. Mant. Pl. 2 : 286. 1771. *E. alba* (L.) Hassk. Pl. Java. Rar. 528. 1848 ; Hook. f. Fl. Brit. India 3 : 304. 1881 ; Collett, Fl. Siml. 262. 1902.

Prostrate, decumbent, ascending or erect herb with appressed pubescent stem. Leaves very variable. Achenes narrowly oblong, ribbed.

Fl. & Fr. : June August.

Chamba (DD), Kangra (BSD, RRL), Mandi (BSIP), Simla (BSD).

Throughout India.

Elephantopus scaber L. Sp. Pl. 814. 1753 ; Hook. f. Fl. Brit. India 3 : 242. 1881.

Strigose, villous, dichotomously branched herbs. Heads in clusters, surrounded by cordate, leafy bracts.

Fl. & Fr. : March - July.

Simla (BSIP).

Throughout India.

Emilia sonchifolia (L.) DC. in Wt. Contrib. Bot. Ind. 24. 1834 et Prodr. 6 : 302. 1838 ; Hook. f. Fl. Brit. India 3 : 336. 1881 ; Collett, Fl. Siml. 268. 1902.

Erect, glabrous herbs. Leaves sessile. Heads long peduncled, reddish-purple. Achenes with 5 hairy ribs.

Fl. & Fr. : July September.

Kangra (DD).

Common throughout India.

Erigeron acris L. Sp. Pl. 863. 1753 ; Nair, Fl. Bash. Himal. 151. 1977.

Erect herbs with hirsute stem and leaves.

Fl. & Fr. : June October.

Chamba (DD), Kinnaur (DD), Simla (DD).

Himalaya.

Erigeron alpinus L. Sp. Pl. 864, 1753 ; Hook. f. Fl. Brit. India 3 : 255. 1881 ; Nair, Fl. Bash. Himal. 151. 1977.

Erect, hispidately hairy herbs. Heads pinkish - white. Achenes sub silky. Pappus hairs reddish.

Fl. & Fr. : June - September.

Chamba (BSD), Kangra (LWG), Kinnaur (BSD), Kulu (LWG), Lahul and Spiti (BSD, BSIP, RRL), Simla (BSD, LWG).

Temperate and alpine Western Himalaya.

Erigeron alpinus L. var. *semibarbata* Hook. f. Fl. Brit. India 3 : 255. 1881.

Differs from var. *alpinus* in having more robust, hispid hairy stem. Heads few, larger and peduncles thickened at the top.

Western Himalaya (Hook. f.).

Erigeron alpinus L. var. *uniflora* Hook. f. Fl. Brit. India 3 : 256. 1881.

Erect, subscapigerous, hispid herbs.

Fl. & Fr. : June - August.

Lahul and Spiti (DD).

Alpine Western Himalaya and Tibet.

Erigeron andryaloides (DC.) Benth. ex Clarke, Comp. Ind. 52. 1876 ; Hook. f. Fl. Brit. India 3 : 255. 1881 ; Nair, Fl. Bash. Himal. 151. 1977.

Densely, softly tomentose or woolly, stout, erect herbs with woody rootstocks. Leaves spatulate, densely, softly tomentose. Heads on a scape like, slender stem. Achenes silky. Pappus hairs reddish white.

Fl. & Fr. : June - September.

Kinnaur (DD), Lahul and Spiti (BSD, BSIP, DD).

Western Himalaya and Western Tibet.

Erigeron bellidioides Benth. in Benth. & Hook. f. Gen. Pl. 2 : 280. 1873 ; Hook. f. Fl. Brit. India 3 : 256. 1881.

Nearly glabrous, erect herbs with slender grooved stem. Achenes sub - silky. Pappus red.

Fl. & Fr. : May - September.

Chamba (DD), Kulu (DD), Lahul and Spiti (DD).

Central and Western Himalaya.

Erigeron bonariensis L. Sp. Pl. 863. 1753 ; Nair, Fl. Bash. Himal. 151. 1977. *Conyza bonariensis* (L.) Cronquist in Bull. Torr. Bot. Club. 70 (6) : 632. 1943. *E. linifolius* Willd. Sp. Pl. 3 : 1955. 1804 ; Hook. f. Fl. Brit. India 3 : 254. 1881 ; Collett, Fl. Siml. 251. 1902. *E. ambiguus* (DC.) Sch. Bip. in Webb. & Berth. Phyt. Canar. Sect. 2 : 208. 1815.

Erect herbs clothed with short, appressed hairs mixed with long, white hairs, and ribbed stem. Leaves linear lanceolate to spatulate. Heads small, white. Achenes thinly hairy. Pappus hairs dirty white.

Fl. & Fr. : May August.

Kulu (BSIP).

Northern India.

Erigeron canadensis L. Sp. Pl. 863. 1753 ; Hook. f. Fl. Brit. India 3 : 254. 1881 ; Nair, Fl. Bash. Himal. 152. 1977. *Conyza canadensis* (L.) Cronquist in Bull. Torr. Bot. Club 70 : 632. 1943.

Hirsute, pubescent or glabrous, slender, leafy herbs. Heads peduncled, purple pink. Achenes thinly hairy. Pappus white.

Fl. & Fr. : June October.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD), Lahul and Spiti (BSD), Simla (BSD, LWG).

Western Himalaya and Punjab.

Erigeron floribundus (HBK) Sch. Bip. Bull. Soc. Bot. Fr. 12 : 81. 1865 ; Burt in Kew Bull. 1948 : 372. 1948. *Conyza floribunda* HBK, Nov. Gen. Sp. 4 : 73. 1820. *Erigeron sumatrensis* Retz. Observ. Bot. 5 : 28. 1789.

Erect herbs with patently long hairy stem branching corymbosely at the top. Leaves linear lanceolate, glabrescent or thinly hairy. Heads in a pyramidal, leafy panicle, yellow. Achenes thinly hairy. Pappus hairs dirty white.

Fl. & Fr. : June August.

Kinnaur (BSD), Kulu (DD).

North Western Himalaya.

Erigeron karvinskianus DC. Prodr. 5 : 285. 1836 ; Blake, Contrib. Gray Herb. N. S. 52 : 30. 1917. *E. mucronatus* DC. Prodr. 5 : 285. 1836. *E. trilobum* Sond. Hamburger Gaerten Blumenzeitung 12 : 78. 1956.

Prostrate ascending, multicauline herbs with purple tinged stem, young parts hairy. Heads long peduncled. Achenes thinly hairy. Pappus hairs whitish.

Fl. & Fr. : June September.

Kinnaur (BSD), Simla (DD).

Himalaya.

Erigeron monticolus DC. Prodr. 5 : 286. 1836 ; Hook. f. Fl. Brit. India 3 : 255. 1881.

Sparsely hairy or glabrous herbs. Heads solitary or few on scape. Achenes narrow, flat, silky.

Fl. & Fr. : May August.

Chandra valley (BSIP).

Temperate, alpine Himalaya.

Erigeron multicaulis Wall. ex DC. Prodr. 5 : 292. 1836 ; Collett, Fl. Siml. 251. 1902 ; Nair, Fl. Bash. Himal. 152. 1977. *E. alpinus* L. var. *multicaulis* Hook. f. Fl. Brit. India 3 : 255. 1881.

Hairy or pubescent herbs with tufted stem. Heads long peduncled, pale purple. Achenes hairy.

Fl. & Fr. : May September.

Chamba (DD), Kulu (DD), Lahul and Spiti (DD).

Alpine Himalaya.

Erigeron multiradiatus Benth. in Benth. & Hook. f. Gen. Pl. 2 : 280. 1873 ; Hook. f. Fl. Brit. India 3 : 256. 1881 ; Collett, Fl. Siml. 251. 1902 ; Nair, Fl. Bash. Himal. 152. 1977.

Erect, hirsute or pubescent herbs. Leaves sessile. Heads long stalked.

Fl. & Fr. : July October.

Chamba (DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSD, DD, RRL), Simla (DD, LWG).

Temperate and alpine Himalaya.

Erigeron roylei DC. Prodr. 5 : 292. 1836. *Erigeron ellisii* Hook. f. Icon. Pl. t. 1447. 1883.

Pubescent herbs.

Fl. & Fr. : July August.

Lahul and Spiti (DD).

North Western Himalaya.

Eupatorium cannabinum L. Sp. Pl. 838. 1753 ; Hook. f. Fl. Brit. India 3 : 243. 1881.

Erect, pubescent shrub. Leaves sessile in distant pairs or whorls. Flowers nearly white.

Fl. & Fr. : July August.

Kulu (LWG).

Temperate Himalaya and Khasia hills.

Eupatorium chinense L. Sp. Pl. 837. 1753. *Eupatorium reevesii* Wall. ex DC. Prodr. 5 : 179. 1836 ; Hook. f. Fl. Brit. India 3 : 243. 1881. *E. wallichii* DC. Prodr. 5 : 179. 1836. *E. squamosum* Buch. Ham. ex D. Don, Prodr. Fl. Nep. 170. 1825.

Erect shrub. Leave opposite or whorled. Heads numerous. Flowers pale purple or white. Achenes angled.

Fl. & Fr. : September October.

Simla (DD).

Subtropical Himalaya.

Filago arvensis L. Sp. Pl. 1312. 1753 ; Hook. f. Fl. Brit. India 3 : 277. 1881 ; Nair, Fl. Bash. Himal. 152. 1977.

Erect, woolly herbs. Leaves linear, lanceolate, woolly. Heads yellow, surrounded by leafy bracts.

Fl. & Fr. : July August.

Chamba (BSD, DD), Lahul and Spiti (BSD).

North Western India, Western Tibet.

Filago pyramidata L. Sp. Pl. 119. 1753. *Filago spathulata* Presl. Delic. Prag. 99. 1822 ; Nair, Fl. Bash. Himal. 152. 1977. *Filago germanica*

auct. pl. (non L.) Hook. f. Fl. Brit. India 3 : 277. 1881 ; Collett, Fl. Siml. 254. 1902.

Prostrate, woolly herbs. Heads yellow, surrounded by leafy bracts. Achenes minute, papillose. Pappus white.

Fl. & Fr. : March August.

Chamba (BSD), Kinnaur (BSD), Lahul and Spiti (BSD, DD).

North Western India.

Galinsoga parviflora Cav. Icon. Descr. Pl. 3 : 41. t. 281. 1795 ; Hook. f. Fl. Brit. India 3 : 311. 1881 ; Collett, Fl. Siml. 264. 1902 ; Nair, Fl. Bash. Himal. 153. 1977.

Erect, some what flaccid herbs. Leaves opposite, glabrescent, membranous. Heads yellow - white. Achenes black, viscid, hairy.

Fl. & Fr. : May October.

Chamba (BSD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD), Lahul and Spiti (BSD, DD), Simla (LWG).

Throughout Himalaya a weed.

Gerbera gossypina (Royle) Beauv. in Bull. Soc. Bot. Gen. Ser. 2. 2 : 40. 1910 ; Nair, Fl. Bash. Himal. 153. 1977. *Chaptalia gossypina* Royle, Ill. Bot. Himal. Mount. 251. t. 59. f. 2. 1835. *G. lanuginosa* (Wall. ex DC.) Benth. in Benth. & Hook. f. Gen. Pl. 2 : 497. 1873 ; Hook. f. Fl. Brit. India 3 : 390. 1881 ; Collett, Fl. Siml. 279. 1902.

Woolly herbs with creeping, woody, rhizome. Leaves in a radical rosette. Heads white. Achenes ribbed. Pappus white.

Fl. & Fr. : April September.

Chamba (DD, LWG, RRL), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (DD), Mandi (LWG), Simla (BSD, BSIP, DD).

Western Himalaya.

Gerbera kunzeana Braun & Asch. in App. Pl. Nov. and Cat. Sem. Hort. Berol. 3. 1871 ; Hook. f. Fl. Brit. India 3 : 390. 1881 ; Collett, Fl. Siml. 279. 1902 ; Nair, Fl. Bash. Himal. 153. 1977.

Woolly herbs. Leaves pinnately lobed. Heads cylindric on stalks with thread like bracts. Achenes hairy.

Fl. & Fr. : July - September.

Simla (DD).

Temperate Himalaya.

Gerbera lacei Wall. in Kew, Bull. 272. 1911 ; Nair, Fl. Bash. Himal. 153. 1977.

Herbs. Heads solitary.

Fl. & Fr. : May - September.

Chamba (DD), Kinnaur (DD).

Western Himalaya.

Gerbera nepalensis Sch. Bip. in Flora 27 : 778. 1844. *Gerbera lamuginosa* Benth. var. *pusilla* (DC). Hook. f. Fl. Brit. India 3 : 390. 1881.

Scapigerous herbs. Leaves radical. Heads on scape, solitary.

Fl. & Fr. : May - August.

Kulu (DD).

Western Himalaya.

Glossogyne bidens (Retz.) Alston, Handb. Fl. Ceyl. Supp. 6 : 168. 1931. *Zinnia bidens* Retz. Observ. Bot. 5 : 28. 1789. *Glossogyne planatifida* DC. in Wt. Contrib. Bot. Ind. 19. 1834 et Prodr. 5 : 632. 1836 ; Hook. f. Fl. Brit. India 3 : 310. 1881.

Glabrous herbs with fusiform, woody roots. Leaves mostly in a radical rosette. Heads yellow. Achenes black.

Fl. & Fr. : June - October.

Harabagh (DD).

Plains of Western India.

Gnaphalium affine D. Don, Prodr. Fl. Nep. 173. 1825 ; Nair, Fl. Bash. Himal. 153. 1977. *G. luteo-album* L. var. *multiceps* Hook. f. Fl. Brit. India 3 : 288. 1881 ; Collett, Fl. Siml. 257. 1902. *G. multiceps* Wall. ex DC. Prodr. 6 : 222. 1838. *G. luteo-album* (non L.) Hook. f. Fl. Brit. India 3 : 288. 1881.

Hoary or woolly herbs with tufted stems. Leaves sessile, spatulate, woolly on both the sides. Heads whitish-yellow. Achenes tubercled or with minute curved bristles.

Fl. & Fr. : June September.

Chamba (BSD), Kinnaur (BSD, DD), Kulu (BSIP, RRL), Mandi (BSD), Simla (DD).

Throughout India.

Gnaphalium hypoleucum DC. in *Wt. Contrib. Bot. Ind.* 21. 1834 ; Hook. f. *Fl. Brit. India* 3 : 288. 1881 ; Collett, *Fl. Siml.* 257. 1902 ; Nair, *Fl. Bash. Himal.* 154. 1977.

Tall, stout herbs with pubescent basal part and upper woolly. Leaves sessile, long pointed with upper green, rough and lower white, woolly surface. Heads golden-yellow. Achenes papillose.

Fl. & Fr. : May October.

Chamba (DD), Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya.

Gnaphalium polycaulon Pers. *Syn. Pl.* 2 : 421. 1807 ; Grierson in *Notes Roy. Bot. Gard. Edinb.* 31 : 135-138. 1971. *G. multicaule* Willd. *Sp. Pl.* 3 : 188. 1803. *G. pluricaule* Poir. in *Lam. Encycl. Suppl.* 2 : 807. 1812. *G. strictum* Roxb. *Fl. Ind. ed. Carey* 2 : 424. 1832. *G. indicum* auct. pl. (non L. 1753) Hook. f. *Fl. Brit. India* 3 : 289. 1881.

Prostrate or decumbent-ascending, multicauline woolly herbs. Heads sessile, Achenes minutely papillose.

Fl. & Fr. : April August.

Kangra (LWG, RRL), Kulu (LWG), Mandi (LWG).

Throughout India.

Gnaphalium stewartii Clarke ex Hook. f. *Fl. Brit. India* 3 : 289. 1881.

Small, tufted, cottony herbs. Leaves very narrow, erect or recurved. Heads in lax or dense leafy racemes. Achenes silky.

Fl. & Fr. : June August.

Lahul and Spiti (DD).

Western Himalaya and Western Tibet.

Gnaphalium thomsonii Hook. f. *Fl. Brit. India* 3 : 290. 1881.

Stout, erect, softly cottony herbs. Leaves linear, acute. Heads yellowish. Achenes minutely papillose.

Fl. & Fr. : June - September.

Kinnaur (DD), Kulu (DD), Lahul and Spiti (BSD), Simla (DD).

Western Himalaya.

Goniocaulon glabrum Cass. in Bull. Philom. 34. 1817 ; Hook. f. Fl. Brit. India 3 : 377. 1881. *G. indicum* Clarke, Comp. Ind. 236. 1876.

Erect, glabrous herbs with long tap root. Leaves sessile, toothed with black dots on both the surfaces. Heads narrow, pedicelled, rose-purple.

Fl. & Fr. : March - August.

Simla (LWG).

Central and Northern India.

Grangea maderaspatana (L.) Poir. Encyc. Suppl. 2 : 825. 1811 ; Hook. f. Fl. Brit. India 3 : 247. 1881. *Artemisia maderaspatana* L. Sp. Pl. 849. 1753.

Pubescent or villous herbs. Heads yellow. Achenes flattened to subterete.

Throughout India (Hook. f.).

Gynura cusimbua (D. Don) S. Moore in Journ. Bot. 50 : 212. 1912. *Cacalia cusimbua* D. Don. Prodr. Fl. Nep. 179. 1825. *G. angulosa* DC. Prodr. 6 : 298. 1838 ; Hook. f. Fl. Brit. India 3 : 334. 1881 ; Collett, Fl. Siml. 268. 1902 ; Nair, Fl. Bash. Himal. 154. 1977.

Robust, succulent, glabrous herbs. Heads orange-yellow. Achenes ribbed. Pappus white.

Fl. & Fr. : July - September.

Kinnaur (BSD, DD), Kulu (DD), Simla (BSIP, DD).

Temperate Himalaya.

Helianthus tuberosus L. Sp. Pl. 905. 1753.

Scabrid-hispid or glabrous, branched herbs with tuberous rhizomes. Leaves ovate acuminate, whitish pubescent beneath, narrowing into a winged petiole. Achenes glabrous or hairy.

Fl. & Fr. : August - September.

Kulu (DD), Simla (DD).

Cultivated for edible tubers (in Europe).

Heteropappus altaicus (Willd.) Novopokr. in Sched. ad Herb. Fl. Ross. 8 : 193. 1922. *Aster altaicus* Willd. Enum. Hort. Berol. 881. 1809 ; Hook. f. Fl. Brit. India 3 : 251. 1881 ; Nair, Fl. Bash. Himal. 144. 1977.

Regid, scaberulous herbs with grooved stem. Leaves sessile, linear-oblong, quite entire. Pappus single, reddish.

Fl. & Fr. : July August.

Chamba (BSD, DD), Kinnaur (DD), Lahul and Spiti (BSD, BSIP, DD).

Western Himalaya.

Heteropappus holohermaphroditus Gerson in Notes Roy. Bot. Gard. 26 : 155. 1964.

Herbs.

Fl. & Fr. : August September.

Lahul and Spiti (BSD).

Western Himalaya.

Hieracium crocatum Fries, Summa Veg. Scand. 6. 1846 ; Hook. f. Fl. Brit. India 3 : 400. 1881.

Hirsute or glabrous herbs. Leaves very variable in shape. Heads on downy glabrous or hirsute stalks. Achenes faintly ribbed, black shining.

Fl. & Fr. : May August.

Lahul and Spiti (BSD).

Western Himalaya and Western Tibet.

Hieracium umbellatum L. Sp. Pl. 804. 1753 ; Hook. f. Fl. Brit. India 3 : 400. 1881 ; Collett, Fl. Siml. 282. 1902. var. **umbellatum**.

Glabrous or hirsute herbs. Leaves sessile, narrowly lanceolate. Heads numerous.

Fl. & Fr. : July September.

Chamba (DD), Lahul and Spiti (BSD, DD), Pin Valley (BSIP).

Western Himalaya.

Hieracium umbellatum L. var. **lanceolatum** Hook. f. Fl. Brit. India 3 : 400. 1881 ; Nair, Fl. Bash. Himal. 154. 1977.

Differs from var. *umbellatum* in having small, more slender plants and a few (1-3) heads.

Fl. & Fr. : August-September.

Simla (DD).

Western Himalaya.

Hieracium vulgatum Fries, Nov. Fl. Suec. 76. 1819 ; Hook. f. Fl. Brit. India 3 : 399. 1881 ; Collett, Fl. Siml. 282. 1902.

Hairy herbs. Leaves glabrous on upper surface, hairy on the lower surface. Heads on glandular hairy stalks. Achenes glabrous, terete, ribbed, black.

Fl. & Fr. : June-September.

Kinnaur (DD), Kulu (DD), Simla (DD), Pin Valley (BSIP).

Western Himalaya.

Inula acuminata Royle ex DC. Prodr. 5 : 471. 1836 ; Hook. f. Fl. Brit. India 3 : 294. 1881. *I. salicina* Clarke, Comp. Ind. 123. 1876 (non L.).

Glabrous herbs. Leaves hastate, acuminate from a dilated sessile cordate base. Achenes glabrous with a few short erect hairs. Pappus pale-reddish.

Western Himalaya (Hook. f.).

Inula cappa (Buch. - Ham. ex D. Don) DC. Prodr. 5 : 469. 1836 ; Hook. f. Fl. Brit. India 3 : 295. 1881 ; Collett, Fl. Siml. 258. 1902 ; Nair, Fl. Bash. Himal. 154. 1977. *Conyza cappa* Buch. - Ham. ex D. Don, Prodr. Fl. Nep. 176. 1825.

Erect, aromatic undershrubs or shrubs, stems with dense, yellowish-brown-grey, tomentum on young parts. Achenes thinly hairy. Pappus-hairs white.

Fl. & Fr. : May-October.

Chamba (BSIP), Kangra (RRL), Kinnaur (DD), Simla (DD).

Temperate Himalaya.

Inula clarkii (Hook. f.) Stewart, Ann. Cal. Vas. Pl. W. Pak. & Kash 753. 1972. *Inula obtusifolia* Kerner var. *clarkii* Hook. f. Fl. Brit. India 3 : 294. 1881.

Herbs with stem and leaves tomentose.

Lahul, Himachal Pradesh (Hook. f.).

Inula cuspidata (DC.) Clarke, Comp. Ind. 125. 1876 ; Hook. f. Fl. Brit. India 3 : 296. 1881 ; Collett, Fl. Siml. 258. 1902 ; Nair, Fl. Bash. Himal. 155. 1977. *Amphirhapis cuspidata* DC. Prodr. 5 : 343. 1836.

Nearly glabrous undershrubs or shrubs with glabrous stem except hairy young parts. Achenes hairy. Pappus hairs yellowish.

Fl. & Fr. : June - October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (BSD), Simla (DD, RRI), Solon (BSIP, DD).

Western Himalaya.

Inula grandiflora Willd. Sp. Pl. 3 : 2096. 1820 ; Hook. f. Fl. Brit. India 3 : 294. 1881 ; Collett, Fl. Siml. 258. 1902 ; Nair, Fl. Bash. Himal. 155. 1977.

Bristly hairy shrubs. Leaves sessile, dilated at the base. Heads radiate, yellow. Achenes very small, nearly glabrous.

Fl. & Fr. : July - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSD, DD), Simla (DD).

Western Himalaya.

Inula graveolens Desf. Fl. Atlant. 2 : 245. 1798 - 1800 ; Hook. f. Fl. Brit. India 3 : 292. 1881.

Slender, much branched, viscid pubescent herbs. Leaves small, sessile. Achenes hairy, viscid.

North - Western India (Hook. f.).

Inula obtusifolia Kerner in Ber. Naturw. Verz. Innsbruck 1 : 111. 1870 ; Hook. f. Fl. Brit. India 3 : 293. 1881.

Rigid, erect herbs with woody root stocks. Stem many. Pappus pale reddish.

Fl. & Fr. : July - September.

Chamba (DD), Lahul and Spiti (DD).

Western Tibet, Kumaon and Himachal Pradesh.

Inula racemosa Hook. f. *Fl. Brit. India* 3 : 292. 1881.

Tall, stout herbs with grooved stems. Leaves coriaceous. Achenes slender, glabrous. Pappus reddish.

Fl. & Fr. : July - August.

Lahul and Spiti (BSD, DD).

Western Himalaya.

Inula royleana Clarke, *Comp. Ind.* 118. 1876 ; Hook. f. *Fl. Brit. India* 3 : 292. 1881.

Stout herbs with grooved stem. Leaves membranous, villous above, thickly woolly below. Heads showy, on woolly or hirsute, erect stalks.

Fl. & Fr. : July - September.

Chamba (BSD, DD), Lahul and Spiti (RRL).

Kashmir and Himachal Pradesh.

Inula vestita Wall. ex DC. *Prodr.* 5 : 470. 1836. *Vicoa vestita* (Wall. ex DC.) Benth. in Benth. & Hook. f. *Gen. Pl.* 2 : 335. 1873 ; Hook. f. *Fl. Brit. India* 3 : 297. 1881 ; Collett, *Fl. Siml.* 260. 1902 ; Nair, *Fl. Bash. Himalaya* 168. 1977.

Densely, softly hairy herbs. Heads bright yellow.

Fl. & Fr. : April - June.

Simla (BSD, DD), Solon (BSD).

Throughout India.

Ixeris polycephala Cass. in *Diet. Sci. Nat.* 24 : 50. 1822. *Lactuca polycephala* Benth. in Benth. & Hook. f. *Gen. Pl.* 2 : 526. 1873 ; Hook. f. *Fl. Brit. India* 3 : 410. 1881.

Flaccid, glabrous herb with long, membranous leaves. Achenes with very strong ribs, red brown.

Northern India (Hook. f.).

Ixeris sagittarioides (Clarke) Stebbins in Journ. Bot. Lond. 75 : 51. 1937. *Lactuca sagittarioides* Clarke, Comp. Ind. 265. 1876 ; Hook. f. Fl. Brit. India 3 : 410. 1881.

Glabrous herbs. Leaves radical, long petioled. Flowering stem erect, generally smooth.

Western and Central Himalaya (Hook. f.).

Jurinea ceratocarpa (Decne.) Benth. in Benth. & Hook. f. Gen. Pl. 2 : 474. 1873 ; Hook. f. Fl. Brit. India 3 : 378. 1881 ; Nair, Fl. Bash. Himal. 155. 1977. *Saussurea ceratocarpa* Decne. in Jacquem. Voy. Bot. 93. t. 101. 1853.

Scaberulous herbs without stem. Leaves linear - oblong, white-tomentose beneath. Heads terminal, sessile, purple. Achenes rough, brown. Pappus hairs white.

Fl. & Fr. : July - September.

Chamba (BSD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, BSIP, DD).

Kashmir and Himachal Pradesh.

Jurinea ceratocarpa (Decne.) Benth. var. *depressa* Clarke ex Hook. f. Fl. Brit. India 3 : 378. 1881.

Nearly stemless herbs.

Fl. & Fr. : August - September.

Lahul and Spiti (BSD).

Western Tibet, Kashmir and Himachal Pradesh.

Jurinea macrocephala DC. Prodr. 6 : 674. 1838 ; Benth. in Benth. & Hook. f. Gen. Pl. 2 : 474. 1873 ; Hook. f. Fl. Brit. India 3 : 378. 1881 ; Nair, Fl. Bash. Himal. 155. 1977. *Dolomiaea macrocephala* Royle, Ill. Bot. Himal. Mount. 251. t. 57. 1835 ; DC. Prodr. 6 : 542. 1838.

Stemless herbs with woody root. Leaves cottony above, thickly white - tomentose beneath. Achenes curved, compressed.

Fl. & Fr. : September - October.

Chamba (DD), Kangra (DD), Kinnaur (BSD), Kulu (DD), Lahul and Spiti (DD).

Western Himalaya.

Koelpinia linearis Pall. Reise durch versch. Prov. d. Russ. Reiches 3-
append : 755. 1776 ; Hook. f. Fl. Brit. India 3 : 392. 1881. *Rhagadiolus*
koelpinia Willd. Sp. Pl. 3 : 1626. 1803.

Glabrous or puberulous herbs. Leaves linear, narrowed at both ends.
Achenes incurved, puberulous.

Fl. & Fr. : June August.

Lahul and Spiti (DD, RRL).

Western Tibet and Western Himalaya.

Lactuca brunoniana (Wall. ex DC.) Clarke, Comp. Ind. 266. 1876 ;
Nair, Fl. Bash. Himal. 155. 1977. *Prenanthes brunoniana* Wall. ex DC.
Prodr. 7 : 195. 1838 ; Hook. f. Fl. Brit. India 3 : 411. 1881 ; Collett, Fl.
Siml. 286. 1902.

Glabrous to hispid herbs. Leaves variable in shape. Heads purplish
white. Achenes narrow, compressed. Pappus white to pale brown.

Fl. & Fr. : July October.

Chamba (DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD),
Lahul and Spiti (BSD, DD), Simla (DD).

Western Himalaya.

Lactuca decipiens (Hook. f. & Thoms.) Clarke, Comp. Ind. 266.
1876 ; Hook. f. Fl. Brit. India 3 : 407. 1881.

Tall, branched, glabrous herbs. Achenes oblanceolate, narrowed
into a short dark beak.

Fl. & Fr. : July September.

Lahul and Spiti (BSD, DD).

Western Himalaya.

Lactuca dissecta D. Don, Prodr. Fl. Nep. 164. 1825 ; Hook. f. Fl.
Brit. India 3 : 405. 1881 ; Collett, Fl. Siml. 284. 1902 ; Nair, Fl. Bash.
Himal. 156. 1977.

Tufted, erect, nearly glabrous herbs with white latex. Leaves
pinnatifid. Heads many, pale blue. Achenes 3 ribbed.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu
(BSD, DD), Lahul and Spiti (BSD, DD, RRL), Simla (BSD, DD, LWG).

Temperate Himalaya.

Lactuca hastata DC. Prodr. 7 : 139. 1838 ; Hook. f. Fl. Brit. India 3 : 407. 1881 ; Collett, Fl. Siml. 284. 1902 ; Nair, Fl. Bash. Himal. 156. 1977.

Glabrous pubescent or hispidly, erect, robust herbs. Heads dark blue. Achenes black.

Fl. & Fr. : September October.

Kinnaur (BSD, DD), Kulu (BSD).

Temperate Himalaya.

Lactuca lessertiana (DC.) Clarke, Comp. Ind. 270. 1876 ; Hook. f. Fl. Brit. India 3 : 408. 1881. *Mulgedium lessertianum* DC. Prodr. 7 : 251. 1838.

Laxly villous or glabrous herbs. Heads blackish, sometimes densely villous with long hairs. Achenes black. Strongly ribbed.

Fl. & Fr. : June September.

Chamba (DD), Kangra (DD), Kinnaur (BSD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD).

Temperate and alpine Himalaya.

Lactuca lessertiana Clarke ssp. *lyrata* Stebbins in Ind. For. Record. Bot. 1 (6) : 240. 1939.

Laxly villous or glabrous herbs. Heads erect or drooping, black, glabrous or densely villous.

Fl. & Fr. : July August.

Chamba (DD).

Temperate and alpine Himalaya.

Lactuca longifolia DC. Prodr. 7 : 135. 1838 ; Hook. f. Fl. Brit. India 3 : 405. 1881 ; Collett, Fl. Siml. 284. 1902 ; Nair, Fl. Bash. Himal. 156. 1977.

Glabrous, tall, erect herbs. Leaves long pointed. Heads blue-purple. Achenes much compressed, dark brown.

Fl. & Fr. : June October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, BSIP, DD), Simla (BSD, DD).

Western and Central Himalaya.

Lactuca macrorhiza (Royle) Hook. f. Fl. Brit. India 3 : 408. 1881 ; Collett, Fl. Siml. 285. 1902 ; Nair, Fl. Bash. Himal. 157. 1977. *Mulgedium macrorhizum* Royle, Ill. Bot. Himal. Mount. 251. t. 61. 1835. *Cicerbita macrorhiza* (Royle) Beauverd in Bull. Soc. Bot. Geneve Ser. 2. 2 : 134. 1910.

Sparsely villous to glabrous herbs with thick-woody root. Heads grey-blue. Achenes black.

Fl. & Fr. : June October.

Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSD, DD), Mandi (LWG), Simla (BSD, DD).

Temperate Himalaya.

Lactuca orientalis (Boiss.) Boiss. Fl. Orient. 3 : 819. 1875 ; Hook. f. Fl. Brit. India 3 : 404. 1881 ; Nair, Fl. Bash. Himal. 157. 1977. *Phenopus orientalis* Boiss. Voy. Esp. 390. 1838.

Glabrous herbs with white branches and green wings. Heads yellow. Achenes narrowed at both the ends.

Fl. & Fr. : July September.

Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD).

Western Tibet and Himachal Pradesh.

Lactuca rapunculoides (DC.) Clarke, Comp. Ind. 268. 1876 ; Hook. f. Fl. Brit. India 3 : 407. 1881. *Mulgedium rapunculoides* DC. Prodr. 7 : 249. 1838.

Sparsely setose or glabrous herbs. Achenes very slender, elongate, fusiform, narrowed into a beak.

Western Himalaya (Hook. f.).

Lactuca sativa L. Sp. Pl. 795. 1753 ; Nair, Fl. Bash. Himal. 157. 1977. *L. scariola* L. var. *sativa* (L.) Clarke, Comp. Ind. 263. 1876 ; Hook. f. Fl. Brit. India 3 : 404. 1881.

Glabrous, erect, leafy herbs. Leaves succulent. Heads yellow. Achenes black.

Fl. & Fr. : June August.

Kinnaur (BSD).

Cultivated the garden lettuce (Salad).

Lactuca scariola L. Sp. Pl. ed. 2 : 119. 1763 ; Hook. f. Fl. Brit. India 3 : 404. 1881 ; Collett, Fl. Siml. 284. 1902 ; Nair, Fl. Bash. Himal. 157. 1977.

Tall, erect, glabrous herbs. Heads yellow. Achenes greyish-brown.

Fl. & Fr. : April October.

Chamba (DD), Kinnaur (BSD, DD), Simla (DD).

Western Himalaya and Western Tibet.

Lactuca sikkimensis (Hook. f.) Stebbins in Ind. For. Records Bot. 1 (6) : 239. 1939. *Prenanthes sikkimensis* Hook. f. Fl. Brit. India 3 : 412. 1881.

Slender, branched, glabrous herbs. Leaves very membranous. Heads long peduncled, pendulous. Achenes large, fusiform.

Fl. & Fr. : June September.

Kinnaur (DD), Kulu (DD), Chandra valley (BSIP).

Sikkim and Himachal Pradesh.

Lactuca tatarica (L.) C. A. Mey. var. *tibetica* Hook. f. Fl. Brit. India 3 : 406. 1881.

Stout, erect, leafy, glabrous herbs. Leaves coriaceous. Achenes narrowly oblong, strongly ribbed.

Fl. & Fr. : August September.

Lahul and Spiti (BSD, BSIP).

Western Tibet and Himachal Pradesh.

Lactuca viminea (L.) F. W. Schmidt. Samml. Phys. Oekonom. aufs. 1 : 270. 1795. *Prenanthes viminea* L. Sp. Pl. 797. 1753.

Erect herbs.

Fl. & Fr. : May August.

Kinnaur (DD), Lahul and Spiti (BSIP).

Western Himalaya.

Lactuca violaeifolia (Decne.) Clarke, Comp. Ind. 269. 1876 ; Nair, Fl. Bash. Himal. 158. 1977. *Prenanthes violaeifolia* Decne. in Jacquem. Voy. Bot. 100. t. 108. 1854 ; Hook. f. Fl. Brit. India 3 : 412. 1881 ; Collett, Fl. Siml. 287. 1902.

Glabrous herbs with milky latex. Leaves triangular, lower ones with stem-clasping base. Heads purple.

Fl. & Fr. : July September.

Chamba (BSD, DD), Kinnaur (BSD), Kulu (BSD, DD).

Western Himalaya.

Laggera alata (D. Don) Schultz-Bip. ex Oliv. in Trans. Linn. Soc. Lond. 29 : 94. 1873 ; Hook. f. Fl. Brit. India 3 : 271. 1881 ; Collett, Fl. Siml. 253. 1902 ; Nair, Fl. Bash. Himal. 158. 1977. *Erigeron alatum* D. Don, Prodr. Fl. Nep. 171. 1825. *Blumea alata* DC. Prodr. 5 : 448. 1836.

Stout, pubescent or tomentose herbs. Heads purple. Achenes small, hairy.

Fl. & Fr. : August September.

Kinnaur (DD), Kulu (DD).

Tropical Himalaya.

Laggera pterodonta (DC.) Schultz-Bip. ex Oliv. in Trans. Linn. Soc. Lond. 29 : 94. 1873 ; Hook. f. Fl. Brit. India 3 : 271. 1881. *Blumea pterodonta* DC. in Wt. Contrib. Bot. Ind. 16. 1834 et Prodr. 5 : 448. 1836.

Erect, strongly aromatic, viscid herbs. Heads purple.

Fl. & Fr. : April August.

Sirmur (BSD).

Tropical Himalaya.

Launaea fallax (Jaub. et Spach) O. Kuntze, Rev. Gen. Pl. 1 : 351. 1891 ; Nair, Fl. Bash. Himal. 158. 1977. *Microrhynchus fallax* Jaub. et Spach. Ill. Pl. Orient. 3 : 106. t. 276. 1847. *Launaea nudicaulis* Hook. f. Fl. Brit. India 3 : 416. 1881 (non Less.) ; Collett, Fl. Siml. 288. 1902.

Glabrous, decumbent herbs. Heads yellow. Achenes columnar, thickly ribbed, smaller than the pappus. Pappus white.

Fl. & Fr. : March August.

Kangra (RRL), Kinnaur (BSD), Mandi (LWG), Simla (LWG), Solan (BSD).

Common in the plains and Western Himalaya.

Launaea secunda (Clarke) Hook. f. Fl. Brit. India 3 : 416. 1881 ; Collett, Fl. Siml. 288. 1902 ; Nair, Fl. Bash. Himal. 158. 1977. *Microorhynchus secundus* Clarke, Comp. Ind. 276. 1876.

Glabrous, sparsely hairy, erect herbs with leaves restricted at the base. Heads yellow. Achenes pale, smooth, ribbed, as long as pappus. Pappus white.

Fl. & Fr. : June - October.

Chamba (DD), Kinnaur (BSD, DD), Simla (BSD, DD).

Western Himalaya.

Leibnitzia nepalensis (Kunze) Kitamura in Journ. Jap. Bot. 14 : 297. 1938. *Cleistanthium nepalense* Kunze in Bot. Zeit. 9 : 350. 1851. *Gerbera kunzeana* Braun & Aschers. in App. Plant. nov. ad Cat. Sem. Hort. Berol. 3. 1871 ; Hook. f. Fl. Brit. India 3 : 390. 1881.

Scapigerous herbs. Leaves oblong, glabrous above, densely cottony beneath. Bracts filiform on the scape.

Fl. & Fr. : August - September.

Chamba (BSD), Kinnaur (BSD), Kulu (BSD).

Temperate Himalaya.

Leontopodium himalayanum DC. Prodr. 6 : 276. 1838 ; Nair, Fl. Bash. Himal. 159. 1977. *L. alpinum* Hook. f. Fl. Brit. India 3 : 279. 1881 (non Cass. Dict. Sci. Nat. 25 : 474. 1822) ; Collett, Fl. Siml. 255. 1902.

Woolly, tufted, erect herbs. Heads white. Achenes ovoid, rough.

Fl. & Fr. : May - October.

Chamba (DD), Kangra (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (DD, RRL), Simla (DD, BSD), Chandra valley (BSIP).

Alpine Himalaya and Tibet.

Ligularia fischerii (Ledeb.) Turcz. Cat. Fl. Baic. Dahur. n. 644. 1837. *Cineraria fischerii* Ledeb. Index Sem. Hort. Dorp. 17. 1820. *L. racemosa* DC. Prodr. 6 : 314. 1838. *Senecio ligularia* Hook. f. Fl. Brit. India 3 : 349. 1881.

Stout, erect, glabrous or cottony herbs. Leaves cordate or kidney-shaped. Heads many fid - in a solitary, terminal, simple, pendulous raceme.

Fl. & Fr. : June September.

Kulu (BSD).

Temperate and subalpine Himalaya.

Matricaria chamomilla L. Sp. Pl. 256. 1753; Hook. f. Fl. Brit. India 3 : 315. 1881.

Aromatic, branched herbs. Heads corymbose, involueral bracts with white margins.

Fl. & Fr. : April September.

Solon (DD).

Northern India.

Microglossa albescens (DC.) Clarke, Comp. Ind. 59. 1876; Hook. f. Fl. Brit. India 3 : 257. 1881; Nair, Fl. Bash. Himal. 159. 1977. *Amphiraphis albescens* DC. Prodr. 5 : 343. 1836.

Erect, hoary herbs. Head lilac. Achenes puberulous. Pappus red.

Fl. & Fr. : July September.

Simla (DD).

Temperate Himalaya.

Myriactis nepalensis Less. in Linnæa 6 : 128. t. 2. 1831; Hook. f. Fl. Brit. India 3 : 247. 1881. *Myriactis wallichii* Less. in Linnæa 6 : 129. 1831; Hook. f. Fl. Brit. India 3 : 247. 1881; Collett, Fl. Siml. 249. 1902; Nair, Fl. Bash. Himal. 159. 1977.

Slender, sparsely hairy herbs with dentate leaves. Heads subpaniculate, involueral bracts acute, reflexed.

Fl. & Fr. : July October.

Chamba (DD, RRL), Kangra (BSD, DD, RRL), Kinnaur (BSD), Kulu (BSD, DD, RRL), Lahul and Spiti (BSD, BSIP), Mandi (BSD), Simla (BSD, DD).

Temperate Himalaya.

Parthenium hysterophorus L. Sp. Pl. 988. 1753.

Erect, tufted, profusely branched herbs with angular hairy stem. Leaves pinnately or bipinnately dissected.

Fl. & Fr. : July October.

Kulu (DD).

A weed, introduced in India around 1956 along with imported food grains. It causes dermatitis on contact.

Phaeccasium lampanoides Cass. in *Dict. Sci-Nat.* 39 : 387. 1826 ; Hook. f. *Fl. Brit. India* 3 : 398. 1881.

Erect, hispid herbs. Leaves rosulate. Flowering stem corymbosely branched.

Fl. & Fr. July September.

Lahul and Spiti (DD).

Western Himalaya.

Phagnalon niveum Edgew. in *Trans. Linn. Soc.* 20 : 68. 1846 ; Hook. f. *Fl. Brit. India* 3 : 288. 1881.

Cottony or woolly shrubs. Leaves snow white with dense cottony wool beneath. Heads axillary.

Fl. & Fr. : April September.

Chamba (DD), Kinnaur (DD), Kulu (DD).

Western Himalaya and Western Tibet.

Picris hieracioides L. ssp. **kaimaensis** Kitamura in *Act. Phytotax.*

Geobot. 8 : 127. 1939 ; Nair, *Fl. Bash. Himal.* 159. 1977. *P. hieracioides* Hook. f. *Fl. Brit. India* 3 : 393. 1881. *P. hieracioides* var. *indica* Wight, *Ic. Pl. Ind. Orient.* 3 : 1143. 1846.

Erect, coarse, sticky, glandular herbs. Heads yellow. Achenes narrowly ellipsoid, reddish-brown. Pappus white.

Fl. & Fr. : May October.

Chamba (BSD), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate Himalaya.

Pterotheca falconeri Hook. f. *Fl. Brit. India* 3 : 399. 1881.

Scapigerous, hispid or glandular herbs. Flowering stem with hispid, gland - tipped hairs.

Fl. & Fr. : May - October.

Chamba (BSD, DD, LWG), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, BSIP, DD), Simla (BSD, DD).

Western Himalaya.

Pulicaria foliolosa DC. Prodr. 5 : 480. 1836 ; Hook. f. Fl. Brit. India 3 : 298. 1881.

Erect, branched herbs with pubescent stem and branches. Leaves sessile, hairy. Heads small, woolly.

Fl. & Fr. : April - August.

Simla (BSD).

Central and Northern India.

Rhynchospermum verticillatum Reinwardt ex Blume, Bijdr. 902. 1826 ; Hook. f. Fl. Brit. India 3 : 248. 1881.

Slender, puberulous, branched herbs. Leaves membranous. Heads on short, rigid, stout, bracteate peduncle.

Fl. & Fr. : June - October.

Chamba (LWG), Simla (BSIP).

Temperate Himalaya.

Saussurea albescens (DC.) Sch. Bip. in Linnæa 19 : 330. 1846 ; Hook. f. & Thoms. in Clarke, Comp. Ind. 233. 1876 ; Hook. f. Fl. Brit. India 3 : 374. 1881 ; Collett, Fl. Siml. 274. 1902 ; Nair, Fl. Bash. Himal. 160. 1977. *Aplotaxis albescens* DC. Prodr. 6 : 540. 1838.

Erect, cottony herbs. Leaves glabrous to rough above and tomentose or cottony beneath. Heads pale red or purple. Achenes muricatus above. Pappus white.

Fl. & Fr. : July - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD).

Western and Central Himalaya.

Saussurea atkinsonii Clarke, Comp. Ind. 226. 1876 ; Hook. f. Fl. Brit. India 3 : 367. 1881.

Glabrous or pubescent, stemless herbs. Leaves spreading, flat on the ground. Achenes glabrous. Pappus brown.

Fl. & Fr. : August October.

Chamba (DD), Kulu (BSD), Lahul and Spiti (BSD).

Western Himalaya.

Saussurea auriculata (Spreng. ex DC.) Sch. Bip. in Linnaea 19 : 331. 1846. *Aplotaxis auriculata* DC. Prodr. 6 : 541. 1838.

Kashmir to Sikkim. (Stewart, 1972).

Saussurea bracteata Decne. in Jacquem. Voy. Ind. Bot. 94. t. 102. 1844 ; Hook. f. Fl. Brit. India 3 : 366. 1881.

Scaberulous or puberulous, dwarf herbs. Achenes glabrous. Pappus white.

Fl. & Fr. : August October.

Lahul and Spiti (DD).

Western Tibet and Himachal Pradesh.

Saussurea candolleana (Wall. ex DC.) Sch. Bip. in Linnaea 19 : 331. 1846 ; Clarke, Comp. Ind. 230. 1876 ; Hook. f. Fl. Brit. India 3 : 372. 1881. *Aplotaxis candolleana* DC. Prodr. 6 : 541. 1838.

Stout, deeply grooved, tall herbs with stem more or less winged due to decurrent petiole. Achenes narrow, glabrous. Pappus pale brown.

Fl. & Fr. : June September.

Chamba (BSIP), Simla (LWG).

Temperate Himalaya.

Saussurea foliosa Edgew. in Trans. Linn. Soc. 20 : 77. 1846 ; Hook. f. Fl. Brit. India 3 : 373. 1881.

Copiously branched, pubescent herbs. Leaves lyrate pinnatifid, puberulous above, cottony below. Heads small on axillary, long, slender peduncles.

Fl. & Fr. : April July.

Simla (DD).

Western Himalaya.

Saussurea glanduligera Sch. Bip. in *Linnaea* 19 : 331. 1846 ; Hook. f. *Fl. Brit. India* 3 : 371. 1881.

Herbs with stout roots. Leaves glandular pubescent on both the surfaces. Heads solitary, involucral bracts green, erect, pubescent or woolly.

Lahul (Hook. f.).

Saussurea glanduligera Sch. Bip. in *Linnaea* 19 : 331. 1846. var. **major** Hook. f. *Fl. Brit. India* 3 : 371. 1881.

Tall herbs. Leaves pale-green (larger than var. *glanduligera*), puberulous. Heads solitary. Achenes scaberulous.

Fl. & Fr. : August - September.

Lahul and Spiti (BSD).

Western Tibet and Himachal Pradesh.

Saussurea gnaphalodes (Royle) Sch. Bip. in *Linnaea* 19 : 331. 1846. *Aplotaxis gnaphalodes* Royle, *Hil. Bot. Himal. Mount.* 251. t. 59. f. 1 1835. *Saussurea sorocephala* (Schrenk) Sch. - Bip. in *Linnaea* 19 : 331. 1846 ; Hook. f. & Thoms. in Clarke, *Comp. Ind.* 226. 1876 ; Hook. f. *Fl. Brit. India* 3 : 377. 1881.

Densely tufted, thickly woolly, dwarf herbs. Achenes narrow, 5 angled. Pappus pale brown.

Fl. & Fr. : July - September.

Chamba (DD), Kinnaur (DD), Lahul and Spiti (DD).

Western Tibet and Himachal Pradesh.

Saussurea gossypiphora D. Don in *Mem. Wern. Nat. Hist. Soc.* 3 : 414. 1821 et *Prodr. Fl. Nep.* 168. 1825 ; Hook. f. *Fl. Brit. India* 3 : 376. 1881 ; Nair, *Fl. Bash. Himal.* 160. 1977.

Densely clothed with long or yellowish woolly hairs. Leaves sessile, linear. Heads purplish, white, concealed in woolly floral leaves. Achenes 4-5 angled, compressed.

Fl. & Fr. : August - September.

Chamba (BSD), Kangra (DD), Kinnaur (BSD), Lahul and Spiti (BSD).

Alpine Himalaya.

Saussurea graminifolia Wall. ex DC. Prodr. 6 : 536. 1838 ; Hook. f. Fl. Brit. India 3 : 370. 1881 ; Nair, Fl. Bash. Himal. 160. 1977.

Stout, erect, silky woolly herbs. Leaves with sheathing petiole, membranous. Heads densely silky, woolly. Pappus pale brown.

Fl. & Fr. : July - September.

Kinnaur (DD).

Western Himalaya, Western Tibet and Ladakh.

Saussurea heteromalla (D. Don) Hand. Mazz. Symb. Sin. 7 : 1152. 1936 ; Nair, Fl. Bash. Himal. 160. 1977. *Cardus heteromallus* D. Don, Prodr. Fl. Nep. 166. 1825. *Aplotaxis candicans* DC. Prodr. 6 : 540. 1838. *Saussurea candicans* (DC.) Sch. Bip. in Linnaea 19 : 330. 1846 ; Clarke, Comp. Ind. 232. 1876 ; Hook. f. Fl. Brit. India 3 : 373. 1881 ; Collett, Fl. Siml. 274. 1902.

Erect, cottony or woolly herbs with thick tap roots. Heads purple. Achenes 4 - 5 angled, muricate. Pappus white.

Fl. & Fr. : May - September.

Chamba (DD), Kangra (RRL), Kinnaur (BSD), Kulu (DD), Simla (DD).

Subtropical and temperate Western India and Himalaya.

Saussurea hypoleuca Spreng. ex DC. Prodr. 6 : 541. 1838 ; Hook. f. Fl. Brit. India 3 : 374. 1881 ; Collett, Fl. Siml. 274. 1902 ; Nair, Fl. Bash. Himal. 161. 1977.

Erect, glabrous or pubescent herbs. Heads deep purple.

Fl. & Fr. : July - September.

Simla (DD).

Temperate Himalaya.

Saussurea jacea (Klotzsch) Clarke, Comp. Ind. 233. 1876 ; Hook. f. Fl. Brit. India 3 : 375. 1881. *Aplotaxis jacea* Klotzsch in Reise Pr. Wald. Bot. 79. t. 79. 1862.

Rigid, puberulous herbs. Leaves rounded, scaberulous on both sides. Heads purplish. Achenes narrow, smooth. Pappus brown.

Fl. & Fr. : July September.

Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Saussurea lappa (Decne.) Sch. - Bip. in *Linnaea* 19 : 331. 1846 ; Clarke, *Comp. Ind.* 233. 1876 ; Hook. f. *Fl. Brit. India* 3 : 376. 1881 ; Nair, *Fl. Bash. Himal.* 161. 1977. *Aplotaxis lappa* Decne. in *Jacquem. Voy. Bot.* 96. t. 104. 1853.

Tall, robust, pubescent herbs. Leaves membranous. Heads very hairy, dark purple. Achenes curved, compressed. Pappus brown.

Fl. & Fr. : June September.

Kinnaur (BSD, DD), Lahul and Spiti (RRL).

Western Himalaya.

Saussurea leontodontoides (DC.) Sch. - Bip. in *Linnaea* 19 : 330. 1846. *Aplotaxis leontodontoides* DC. *Prodr.* 6 : 539. 1838. *Saussurea kunthiana* Clarke, *Comp. Ind.* 225. 1876 ; Hook. f. *Fl. Brit. India* 3 : 369. 1881 ; Nair, *Fl. Bash. Himal.* 161. 1977.

Dwarf, stemless herbs. Heads solitary, sessile. Achenes muricate.

(Nair, 1977).

Alpine Himalaya and Western Tibet

Saussurea obvallata (DC.) Edgew. in *Trans. Linn. Soc.* 20 : 76. 1846 (Aug.) ; Sch. Bip. *Linnaea* 19 : 331. 1846 (Sept.) ; Clarke, *Comp. Ind.* 223. 1876 ; Hook. f. *Fl. Brit. India* 3 : 365. 1881 ; Nair, *Fl. Bash. Himal.* 161. 1977. *Aplotaxis obvallata* DC. *Prodr.* 6 : 541. 1838.

Stout, pubescent or glabrous herbs. Stem terminated by the incurved, bladderly, translucent leaves which form a pale head. Heads purplish-white. Achenes obovoid, flattened, glabrous, ribbed. Pappus pale brown.

Fl. & Fr. : August October.

Kinnaur (BSD, DD).

Western Himalaya.

Saussurea piptathera Edgew. in Trans. Linn. Soc. 20 : 76. 1846 ; Hook. f. Fl. Brit. India 3 : 372. 1881 ; Nair, Fl. Bash. Himal. 161. 1977.

Erect herbs. Leaves oblong with a contracted or dilated amplexicaul, auricled base. Achenes smooth, angled.

Fl. & Fr. : July September.

Chamba (DD), Kangra (DD), Kinnaur (BSD), Kulu (DD), Lahul and Spiti (DD), Simla (DD).

Western Himalaya.

Saussurea roylei (DC.) Sch. Bip. in Linnaea 19 : 330. 1846 ; Hook. f. Fl. Brit. India 3 : 370. 1881. *Aplotaxis roylei* DC. Prodr. 6 : 538. 1838.

Stout, glabrate to cottony herbs. Heads large. Achenes delicately ribbed. Pappus pale brown.

Fl. & Fr. : August September.

Chamba (DD), Kangra (DD), Kulu (DD).

Western Himalaya.

Saussurea rufinervis DC. Prodr. 6 : 369. 1838 ; Hook. f. Fl. Brit. India 3 : 355. 1881.

Woolly, shrubby herbs. Leaves sharply toothed, nerves beneath with red tomentum. Heads many.

Fl. & Fr. : May August.

Lahul (DD), Kinnaur (LWG), Simla (DD).

Western Himalaya.

Saussurea sacra Edgew. in Trans. Linn. Soc. 20 : 76. 1846 ; Hook. f. Fl. Brit. India 3 : 376. 1881 ; Nair, Fl. Bash. Himal. 162. 1977.

Densely woolly herbs. Leaves sessile, linear. Heads exposed, white violet. This species is very much similar to *S. gossypiphora*, however, it is quite distinct from it in having much smaller plants with exposed heads and in certain other characters.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur (BSD).

Alpine Himalaya from Himachal Pradesh to Sikkim.

Saussurea simpsoniana (Field. and Gardn.) Lipschitz in Nov. Syst. Pl. 319. 1964. *Aplotaxis simpsoniana* Field. and Gardn. Sert. Pl. t. 26. cum descr. 1844.

Similar to *S. gossypiphora* but has less woolly heads.

Fl. & Fr. : August - September.

Kinnaur (BSD).

Western Himalaya.

Saussurea stoliczkae Clarke, Comp. Ind. 225. 1876 ; Hook. f. Fl. Brit. India 3 : 368. 1881.

Densely tufted, dwarf, white cottony herbs. Leaves snow white. Heads sessile. Achenes glabrous. Pappus brown.

Kinnaur (Hook. f.).

Western Tibet and Himachal Pradesh.

Saussurea taraxicifolia Wall. ex DC. Prodr. 6 : 532. 1838 ; Hook. f. Fl. Brit. India 3 : 368. 1881 ; Collett, Fl. Siml. 274. 1902 ; Nair, Fl. Bash. Himal. 162. 1977.

Glabrous or cottony herbs. Leaves radical, upper surface green, lower white tomentose. Heads solitary, purple. Achenes glabrous. Pappus pale brown.

Fl. & Fr. : July - September.

Kinnaur (BSD), Simla (DD).

Alpine Himalaya from Himachal Pradesh to Sikkim and Western Tibet.

Sclerocarpus africanus Jacq. ex Murray, Syst. Veg. ed. 14. 783. 1784 ; Hook. f. Fl. Brit. India 3 : 305. 1881.

Hispidly hairy herbs. Heads yellow. Achenes curved, ribbed. Pappus lacking.

Fl. & Fr. : August - October.

Kangra (DD).

Western Himalaya.

Scorzonera virgata DC. Prodr. 7 : 125. 1838 ; Nair, Fl. Bash. Himal. 162. 1977. *Scorzonera divaricata* Hook. f. Fl. Brit. India 3 : 418. 1881 (non Turcz.).

Slender, glabrate herbs. Leaves with incurved margins. Heads yellow. Achenes pale, smooth, striate, longer than the pappus.

Fl. & Fr. : June August.

Chamba (DD), Kinnaur (BSD), Kulu (DD), Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Senecio alatus Wall. ex DC. Prodr. 6 : 368 1838 ; Hook. f. Fl. Brit. India 3 : 353. 1881 ; Collett, Fl. Siml. 269. 1902 ; Nair, Fl. Bash. Himal. 162. 1977.

Hairy herbs. Leaves pubescent with broadly winged stalks. Heads few flowered, in short racemes forming panicles.

Fl. & Fr. : August October.

Kangra (DD), Kulu (BSD, DD), Simla (DD).

Temperate Himalaya, Himachal Pradesh to Sikkim.

Senecio amplexicaulis (DC.) Clarke, Comp. Ind. 204. 1876 ; Hook. f. Fl. Brit. India 3 : 348. 1881 ; Collett, Fl. Siml. 268. 1902 ; Nair, Fl. Bash. Himal. 162. 1977. *Ligularia amplexicaulis* DC. Prodr. 6 : 314. 1838.

Tall, glabrous, thick herbs. Leaves large, kidney shaped. Heads drooping, companulate. Achenes narrow, glabrous.

Fl. & Fr. : August - October.

Chamba (BSD), Kangra (DD), Simla (DD).

Western Himalaya and Sikkim.

Senecio candolleanus Wall. ex DC. Prodr. 6 : 364. 1838 ; Hook. f. Fl. Brit. India 3 : 353. 1881.

Slender, flexuous, glandular - pubescent herbs. Leaves glabrous above, white tomentose below. Achenes pubescent.

Fl. & Fr. : May - August.

Kulu (LWG).

Western Himalaya.

Senecio chenopodifolius DC. Prodr. 6 : 364. 1838 ; Hook. f. Fl. Brit. India 3 : 354. 1881.

Finely pubescent herbs. Leaves triangular, cordate, membranous. Achenes turbinate. Pappus brown.

(Hook. f.).

Western and Central Himalaya.

Senecio chrysanthemoides DC. Prodr. 6 : 365. 1838 ; Hook. f. Fl. Brit. India 3 : 339. 1881 ; Collett, Fl. Siml. 259. 1902 ; Nair, Fl. Bash. Himal. 163. 1977.

Glabrous or nearly so herbs. Leaves often purple on the lower side. Heads numerous, yellow. Achenes glabrous.

Fl. & Fr. : June October.

Chamba (BSD, DD), Kangra (DD, RRL), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD, RRL), Simla (DD).

Temperate Himalaya.

Senecio connatus Balak. in Journ. Bomb. nat. Hist. Soc. 67 : 61. 1970 ; Nair, Fl. Bash. Himal. 163. 1977. *S. arnicoides* (Royle) Clarke, Comp. Ind. 207. 1876 (non Hook. et Arn. 1841) ; Hook. f. Fl. Brit. India 3 : 351. 1881. *Ligularia arnicoides* Royle, Ill. Bot. Himal. Mount. t. 60. f. 2. 1835 ; DC. Prodr. 6 : 314. 1838.

Stout, erect, sparingly cottony herbs. Leaves variable, coriaceous. Heads in drooping racemes.

Fl. & Fr. : July September.

Kinnaur (DD).

Central and Western Himalaya.

Senecio coronopifolius Burm. f. Fl. Ind. 181. t. 60. 1768 ; Desf. Fl. Ait. 2 : 273. 1800 ; Hook. f. Fl. Brit. India 3 : 341. 1881 ; Nair, Fl. Bash. Himal. 163. 1977.

Glabrous herbs. Leaves cauline, fleshy, narrow, pinnatifid. Heads yellow. Achenes pubescent. Pappus white.

Fl. & Fr. : July - October.

Chamba (BSD), Kinnaur (DD).

Himalaya.

Senecio dubius Ledeb. Fl. Atlaica 4 : 112. 1833 ; Hook. f. Fl. Brit. India 3 : 342. 1881.

Dwarf, glabrous herbs branching from the base. Heads purple white, Achenes hoary. Pappus white.

(Hook. f.).

Western Himalaya and Western Tibet.

Senecio graciliflorus DC. Prodr. 6 : 365. 1838 ; Hook. f. Fl. Brit. India 3 : 338. 1881 ; Collet, Fl. Siml. 269. 1902 ; Nair, Fl. Bash. Himal. 163. 1977.

Glabrous, erect herbs with grooved stem. Heads numerous, drooping, yellow. Achenes ribbed. Pappus white.

Fl. & Fr. : August - November.

Chamba (DD, RRL), Kinnaur (BSD, DD), Kulu (DD), Simla (DD).

Temperate Himalaya.

Senecio jacquemontianus (Decne.) Benth. ex Hook. f. Fl. Brit. India 3 : 350. 1881. *Senecillis jacquemontiana* Decne. in Jacquem. Voy. Ind. 90. t. 98. 1844.

Robust, glabrous herbs. Leaves large, ovate cordate. Achenes deeply grooved.

Western Himalaya.

Senecio kumawrensis Nair, Fl. Bash. Himal. 164. 1977. *S. arnicoides* var. *frigida* Hook. f. Fl. Brit. India 3 : 351. 1881. *Ligularia frigida* Schultz Bip. ex Hook. f. Fl. Brit. India 3 : 351. 1881.

Stout, dwarf herbs. Leaves radical, very coriaceous. Heads solitary.

Fl. & Fr. : April - August.

Kinnaur (BSD, DD).

Himachal Pradesh, Western Tibet and Ladakh.

Senecio kouthianus Wall. ex DC. Prodr. 6 : 369. 1838 ; Hook. f. Fl. Brit. India 3 : 354. 1881 ; Collett, Fl. Siml. 269. 1902 ; Nair, Fl. Bash. Himal. 164. 1977.

Slender, glabrous or puberulous herbs. Leaves lanceolate, lower surface white tomentose. Heads yellow. Achenes pubescent. Pappus white.

Fl. & Fr. : July September.

Chamba (DD), Kangra (DD), Kinnaur (BSD, DD), Kulu, (DD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate Himalaya.

Senecio levingii Clarke, *Comp. Ind.* 301. 1876 ; Hook. f. *Fl. Brit. India* 3 : 353. 1881.

Tall, glabrous, leafy herbs. Leaves very membranous. Heads drooping. Achenes, glabrous. Pappus white.

Fl. & Fr. : June - September.

Simla (BSIP).

Western Himalaya.

Senecio ligularia Hook. f. *Fl. Brit. India* 3 : 349. 1881 ; Nair, *Fl. Bash. Himal.* 164. 1977.

Cottony herbs. Leaves cordate or kidney shaped. Achenes long, narrow. Pappus red.

Fl. & Fr. : July September.

Chamba (BSD, DD), Kulu (BSD).

Temperate, subalpine Himalaya.

Senecio nudicaulis Buch. Ham. ex D. Don, *Prodr. Fl. Nep.* 179. 1825 ; Hook. f. *Fl. Brit. India* 3 : 340. 1881 ; Collett, *Fl. Siml.* 269. 1902 ; Nair, *Fl. Bash. Himal.* 164. 1977.

Glabrous herbs with grooved stems. Leaves white to purple tomentose on the lower side. Heads many flowered, yellow. Achenes puberulous. Pappus white.

Fl. & Fr. : May October.

Kangra (BSD), Kinnaur, (DD), Kulu (DD), Mandi (BSD), Solan (DD).

Temperate Himalaya.

Senecio pedunculatus Edgew. in *Trans. Linn. Soc.* 21 : 74. 1846 ;

Hook. f. Fl. Brit. India 3 : 342. 1881 ; Nair, Fl. Bash. Himal. 164. 1977.

Dwarf, glabrous, slender herbs. Leaves pinnatifid, purplish when old. Heads yellow. Achenes slender, nearly glabrous. Pappus white.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD, RRL).

Western Himalaya.

Senecio rufinervis DC. Prodr. 6 : 369. 1838 ; Hook. f. Fl. Brit. India 3 : 355. 1881 ; Collett, Fl. Siml. 270. 1902 ; Nair, Fl. Bash. Himal. 164. 1977.

Tall, shrubby plants with tomentose stem and inflorescence. Leaves sharply toothed, lower surface, white tomentose nerves red. Heads numerous, yellow. Achenes glabrous.

Fl. & Fr. : August October.

Chamba (DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (DD),

Western Himalaya,

Senecio scandens Buch. Ham. ex D. Don, Prodr. Fl. Nep. 178. 1825 ; Hook. f. Fl. Brit. India 3 : 352. 1881.

Climbing, zig zag branched, glabrous herbs. Leaves hastate, pubescent beneath. Heads in divaricate rounded corymbs.

Fl. & Fr. : May October.

Kulu (DD).

Temperate Himalaya.

Senecio thomsoni Clarke, Comp. Ind. 205. 1876 ; Hook. f. Fl. Brit. India 3 : 348. 1881.

Robust, glabrous or cottony herbs. Leaves orbicular and deeply cordate with rounded lobes. Heads suberect and drooping. Achenes glabrous. Pappus white.

Fl. & Fr. : July October.

Chamba (LWG), Simla (BSIP).

Western Himalaya.

Serratula pallida DC. Prodr. 6 : 670. 1838 ; Hook. f. Fl. Brit. India 3 : 379. 1881 ; Collett, Fl. Siml. 275. t. 81. 1902 ; Nair, Fl. Bash. Himal. 165. 1977.

Rough, erect herbs. Leaves radical, deply pinnately lobed. Heads purple. Achenes oblong, flattened, obscurely ribbed, pale. Pappus brown.

Fl. & Fr. : May August.

Simla (DD).

Western Himalaya.

Siegesbeckia orientalis L. Sp. Pl. 900. 1753 ; Hook. f. Fl. Brit. India 3 : 304. 1881 ; Collett, Fl. Siml. 262. 1902 ; Nair, Fl. Bash. Himal. 165. 1977.

Erect herbs with crisp hairy. Leaves with winged stalks, red tinged. Heads radiate, yellow. Achenes curved, angled, rough.

Fl. & Fr. : August October.

Chamba (DD, RRL), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSD), Simla (BSD, DD), Solon (DD).

Throughout India.

Silybum marianum Gaertn. Fruct. & Sem. 2 : 378. t. 168. 1802 ; Hook. f. Fl. Brit. India 3 : 364. 1881.

Erect, glabrous, shining herbs. Leaves large with strong spines. Heads large, solitary, terminal, purple. Achenes compressed, glabrous.

Fl. & Fr. : May July.

Chamba (BSD, DD), Kangra (RRL), Kulu (DD).

North - Western Himalaya.

Solidago virga aurea L. Sp. Pl. 880. 1753 ; Hook. f. Fl. Brit. India 3 : 244. 1881. ; Collett, Fl. Siml. 247. 1902 ; Nair, Fl. Bash. Himal. 165. 1977.

Erect, pubescent, rarely branched herb. Heads yellow, radiate. Achenes ribbed.

Fl. & Fr. : July October.

Chamba (DD), Kangra (DD, RRL), Kinnaur (BSD,DD), Kulu (DD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate Himalaya.

Sonchus arvensis L. Sp. Pl. 793. 1753 ; Hook. f. Fl. Brit. India 3 : 414. 1881 ; Collett, Fl. Siml. 288. 1902 ; Nair, Fl. Bash. Himal. 165. 1977.

Erect, glabrous at the base and glandular hairy upwards, herbs. Leaves radical. Heads yellow. Achenes narrow with thick ribs on each face.

Fl. & Fr. : May July.

Chamba (RRL), Lahul and Spiti (RRL).

Throughout India.

Sonchus asper (L.) Hill, Brit. Herb. 1 : 47. 1769 ; Hook. f. Fl. Brit. India 3 : 414. 1881 ; Collett, Fl. Siml. 287. 1902 ; Nair, Fl. Bash. Himal. 165. 1977. *S. oleraceus* L. var. *asper* L. Sp. Pl. 794. 1753.

Erect, slender, glabrous herbs. Basal leaves in a rosette. Heads solitary on glandular - hairy peduncles, yellow. Achenes compressed, 3 ribbed on lateral faces. Pappus white.

Fl. & Fr. : June July.

Chamba (DD), Kulu (BSD).

Throughout India.

Sonchus brachyotus DC. Prodr. 6 : 136. 1838 ; Nair, Fl. Bash. Himal. 166. 1977.

Erect herbs with thick, stout taproot and hollow stem. Heads yellowish - white. Achenes wrinkled, linear oblong.

Fl. & Fr. : May October.

Kangra (BSD), Kinnaur (BSD, DD), Kulu (DD), Mandi (BSD), Simla (DD).

North Western Himalaya.

Sonchus lachnocephalus Rech. f. Dan Biol. Skr. 8. 2 : 202. 1955 ; Rechinger, f. Fl. Iran. 122 : 167. 1977. *Sonchus wightianus* DC. var. *waltchianus* (DC.) Boulos. Bot. Not. 125. 297. 1972 ; Nair, Fl. Bash. Himal.

166. 1977. *S. wallichiana* DC. Prodr. 7 : 185. 1838. *S. arvensis* Hook. f. Fl. Brit. India 3 : 414. 1881 *p. p.*

Erect herbs. Heads yellow.

Fl. & Fr. : July September.

Chamba (BSD), Kinnaur (BSD).

Throughout India.

Sonchus oleraceus L. SP. Pl. 794. 1753 ; Hook. f. Fl. Brit. India 3: 414. 1881 ; Collett, Fl. Siml. 287. 1902 ; Nair, Fl. Bash. Himal. 166. 1977.

Erect, almost glabrous herbs with hollow, purplish tinged stem. Heads yellow. Achenes compressed, faces 3-ribbed. Pappus white.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD), Lahul and Spiti (BSD, DD, RRL), Simla (DD).

Throughout India.

Tagetes erecta L. Sp. Pl. 887. 1753 ; Bailey, Manu. Cult. Pl. ed. 2. 1013. 1949.

Erect, strongly aromatic herbs. Leaves with yellow glands along the margins. Heads orange yellow. Achenes appressed, hairy on the ribs.

Fl. & Fr. : October April.

Kinnaur (DD).

Commonly cultivate, merigold or genda.

Tagetes minuta L. Sp. Pl. 887. 1753 ; Nair, Fl. Bash. Himal. 166. 1977.

Erect, strongly aromatic herbs. Heads yellow. Achenes angular, compressed hairy.

Fl. & Fr. : September November.

Kinnaur (BSD, DD).

Occasionally cultivated in gardens.

Tagetes patula L. Sp. Pl. 887. 1753 ; Bailey, Manu. Cult. Pl. ed. 2. 1013. 1949.

Erect, strongly aromatic herbs. Head yellow with brownish - red markings.

Fl. & Fr. : August - September.

Chamba (DD), Kulu (DD).

Another type of cultivated marigold.

Tanacetum cinerariifolium (Trev.) Schultz Bip. *Tanacet.* 58. 1844.
Chrysanthemum cinerariifolium (Trev.) Vis. *Fl. Dalmat.* 2 : 88. 1847 ;
Nair, *Fl. Bash. Himal.* 148. 1977. *Pyrethrum cinerariifolium* Trev. *Ind. Sem. Hort. Vratisl. App.* 2 : 2. 1820 et in *Nov. Act. Nat. Cur.* 13 : 204. 1826.

Cultivated for pyrethrum powder, an insecticide.

Fl. & Fr. : May June.

Kinnaur (BSD), Kulu (DD).

Himalaya.

Tanacetum falconeri Hook. f. *Fl. Brit. India* 3 : 320. 1881.

Silky - tomentose or hoary herbs with grooved stems. Achenes pale, linear oblong, dilated upwards.

Fl. & Fr. : July September.

Chamba (DD), Lahul and Spiti (BSD, DD).

Western Tibet, Kashmir and Himachal Pradesh.

Tanacetum gracile Hook. f. & Thoms. in Hook. f. *Fl. Brit. India* 3 : 318. 1881.

Hoary, pubescent herbs. Stems many from the woody stock. Heads small, in small corymbs on long branches.

(Hook. f.).

Western Tibet, Ladakh and Himachal Pradesh.

Tanacetum longifolium Wall. ex DC. *Prodr.* 6 : 130. 1838. excl. syn. ; Hook. f. *Fl. Brit. India* 3 : 320. 1881 ; Collett, *Fl. Siml.* 265. 1902 ; Nair, *Fl. Bash. Himal.* 167. 1977.

Laxly villous herbs. Heads in a close woolly corymb. Achenes narrowly obovoid with 5-strong ribs. Pappus absent.

Fl. & Fr. : July - October.

Chamba (DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD), Simla (DD).

Western Himalaya.

Tanacetum nanum Clarke, *Comp. Ind.* 155. 1876 ; Hook. f. *Fl. Brit. India* 3 : 320. 1881.

Hoary herbs with rootstocks excessively stout, branched.

Fl. & Fr. : April - August.

Kinnaur (DD).

Western Tibet and Himachal Pradesh.

Tanacetum nubigeum Wall. ex DC. *Prodr.* 6 : 130. 1838 ; Hook. f. *Fl. Brit. India* 3 : 318. 1881 ; Collett, *Fl. Siml.* 265. 1902 ; Nair, *Fl. Bash. Himal.* 167. 1977.

Hoary or woolly, tufted, aromatic herbs with woody root. Heads bright yellow. Achenes ovoid-oblong, brown, 5-ribbed.

Fl. & Fr. : September - October.

Chamba (DD), Lahul and Spiti (BSD), Simla (DD).

Alpine Himalaya from Himachal Pradesh to Sikkim.

Tanacetum tibeticum Hook. f. & Thoms. ex Clarke, *Comp. Ind.* 154. 1876 ; Hook. f. *Fl. Brit. India* 3 : 319. 1881.

Dwarf, tomentose herbs, strongly scented when fresh. Achenes 5-ribbed with a minute terminal cup.

Fl. & Fr. : June - August.

Lahul and Spiti (BSD, DD).

Western Tibet and Himachal Pradesh.

Tanacetum tomentosum DC. *Prodr.* 6 : 130. 1838. *Tanacetum senecionis* Gay, sensu Hook. f. *Fl. Brit. India* 3 : 319. 1881.

Tomentose or woolly, stout herbs with woody roots. Heads capitate or in woolly corymbs.

Fl. & Fr. : July - September.

Kinnaur (DD), Lahul and Spiti (BSD, DD).

Western Himalaya, Himachal Pradesh to Garhwal.

Tanacetum tripinnatifidum Oliver, Hook. Icones 24 : 2306. 1894.

Fl. & Fr. : May - September.

Lahul and Spiti (BSD).

Himalaya.

Taraxacum aureum van Soest in Wentia 10 : 36. 1963.

Fl. & Fr. : June - August.

Simla (DD).

Himalaya.

Taraxacum aurorum Van Soest in Wentia 10 : 12. 1963.

Lahul (Ber 15115 Type, Stewart, 1972).

Himachal Pradesh.

Taraxacum ceratophorum (Ledeb.) DC. Prodr. 7 : 146. 1838.

Lahul (Stewart, 1972).

Himachal Pradesh.

Taraxacum duylidens H. Lindb. f. in Acta Soc. Fauna Fl. Fenn. 29 (9) : 38. 1907.

Fl. & Fr. : May - September.

Kulu (DD).

Himalaya.

Taraxacum karakoricum van Soest in Bull. Brit. Mus. Nat. Hist. (Bot.) 2 (13) : 268. 1961.

Lahul (Stewart, 1972).

Himachal Pradesh.

Taraxacum laevigatum (Willd.) DC. Cat. Hort. Monspel. 149. 1813.

Kangra (Stewart, 1972).

Himachal Pradesh.

Taraxacum leucanthum Ledeb. Fl. Rossica 2 : 815. 1844 *p. p.*

Fl. & Fr. : June - August.

Lahul and Spiti (BSD, DD).

Himalaya.

Taraxacum monochlamydeum Hand. Mazz. Monogr. Tarax. 44. 1907 ; Nair, Fl. Bash. Himal. 167. 1977.

Fl. & Fr. : April - July.

Chamba (DD).

Himalaya.

Taraxacum officinale Wiggers Prim. Fl. Holsat. 56. 1780 ; Hook. f. Fl. Brit. India 3 : 401. 1881 ; Collett, Fl. Siml. 283. 1902 ; Nair, Fl. Bash. Himal. 167. 1977.

Perennial herbs with stout rootstocks. Leaves all basal, sessile. Head solitary on scapes. Achenes obovoid, ribbed.

Fl. & Fr. : April - September.

Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD).

Throughout Himalaya and Western Tibet.

Taraxacum sherriffii van Soest. in Bull. Brit. Mus. Nat. Hist. (Bot.) 2 (10) : 272. 1961.

Lahul (Stewart, 1972).

Himachal Pradesh.

Taraxacum stereodiforme van Soest. in Wentia 10 : 31. 1963.

Lahul (Stewart, 1972).

Himachal Pradesh.

Taraxacum tricuspdatum van Soest. in Kon. Nederl. Akad. Amst. Proc. Ser. C. 69 (3) : 382. 1966.

Lahul and Spiti (Stewart, 1972).

Himachal Pradesh.

Taraxacum wattii Hook. f. Fl. Brit. India 3 : 402. 1881.

Woolly herbs. Scapes pubescent above, heads broadly campanulate. Achenes white, compressed, acutely ribbed.

Fl. & Fr. : July - August.

Chamba (DD), Kulu (BSD), Lahul and Spiti (BSD).

Western Himalaya.

Taraxacum wallichii DC. Prodr. 7 : 147. 1838. *T. officinale* var. *glaucescens* Hook. f. Fl. Brit. India 3 : 401. 1881.

Woolly herbs with glaucous, runcinate leaves. Head solitary. Involucral bracts reflexed

Fl. & Fr. : June - September.

Kinnaur (DD).

Throughout the Himalaya.

Tithonia tagettiflora Desf. in. Ann. Mus. Par. 1 : 46. t. 4. 1802 ; Nair, Fl. Bash. Himal. 167. 1977.

Fl. & Fr. : May - September.

Chamba (DD), Simla (DD).

Himalaya.

Tragopogon dubius Scop. Fl. Carn. ed. 2. 2 : 95. 1772. *Tragopogon pratense* Hook. f. Fl. Brit. India 3 : 418. 1881. (non L.).

Glabrous herbs. Heads yellow. Achenes long - beaked, muricate.

Fl. & Fr. : May - August.

Kulu (DD), Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Tragopogon gracilis D. Don in Mem. Wern. Soc. 3 : 414. 1820 ; Hook. f. Fl. Brit. India 3 : 417. 1881 ; Collett, Fl. Siml. 289. 1902 ; Nair, Fl. Bash. Himal. 167. 1977.

Glabrous or somewhat cottony herbs with tufted stem and milky latex. Leaves with sheathing base. Head yellow. Achenes slender, ribbed, minutely prickly on the upper half, beak small.

Fl. & Fr. : June August.

Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD, RRL).

Central and Western Himalaya.

Tragopogon sinuatum Ave. Lali, Pl. Ital. Bor. 1829. *T. porrifolium* Hook. f. Fl. Brit. India 3 : 418. 1881. (non L.).

Glabrous or cottony herbs. Leaves tapering with a broad sheathing base. Heads purple, peduncle inflated. Achenes long beaked, muricate.

Simla (Hook. f.).

Western Tibet and Himachal Pradesh.

Tricholepis elongata DC. Prodr. 6 : 563. 1838 ; Hook. f. Fl. Brit. India 3 : 380. 1881 ; Collett, Fl. Siml. 276. 1902 ; Nair, Fl. Bash. Himal. 168. 1977.

Rough herbs. Heads discoid, solitary at the end of the branches, pale - yellow. Achenes smooth. Pappus copious, rigid, minutely barbed.

Fl. & Fr. : May October.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (DD), Simla (DD), Solon (DD).

Western Himalaya.

Tricholepis furcata DC. Prodr. 6 : 563. 1838 ; Hook. f. Fl. Brit. India 3 : 380. 1881.

Glabrous or puberulous herbs. Leaves covered with raised points or scaberulous. Heads yellow. Achenes pale, compressed. Pappus white.

Temperate Himalaya.

Tricholepis stictophyllum Clarke, Comp. Ind. 241. 1876 ; Hook. f. Fl. Brit. India 3 : 382. 1881.

Glabrous, sparingly branched herbs. Leaves sessile, linear acute. Heads solitary, terminal.

Western Himalaya.

Tridax procumbens L. Sp. Pl. 900. 1753 ; Hook. f. Fl. Brit. India 3 : 311. 1881.

Procumbent, hirsute herbs. Heads very long peduncled. Achenes brown, turbinate.

Fl. & Fr. : April - September.

Kangra (BSD).

Abundant in various parts of India.

Tussilago farfara L. Sp. Pl. 865. 1753 ; Hook. f. Fl. Brit. India 3 : 330. 1881.

White, woolly, scapigerous herbs with stoloniferous perennial root-stocks. Leaves long petioled, cobwebby above, white - tomentose beneath. Heads bright yellow. Achenes ribbed. Pappus snow - white.

Fl. & Fr. : April - July.

Chamba (DD), Lahul and Spiti (DD).

Western Himalaya.

Vernonia anthelmintica (L.) Willd. Sp. Pl. 3 : 1634. 1800 ; Hook. f. Fl. Brit. India 3 : 236. 1881 ; Collett, Fl. Siml. 245. 1902. *Conyza anthelmintica* L. Sp. Pl. ed. 2. 1207. 1763.

Glandular - pubescent, tall robust, leafy herbs. Leaves membranous. Achenes 10 - ribbed, pubescent. Pappus shining, reddish.

Fl. & Fr. : August - October.

Kangra (DD), Simla (DD).

Throughout India.

Vernonia cinerea (L.) Less. in *Linnaea* 4 : 291. 1829 ; Hook. f. Fl. Brit. India 3 : 233. 1881 ; Collett, Fl. Siml. 245. 1902. *Conyza cinerea* L. Sp. Pl. 862. 1753.

Erect, hoary pubescent herbs with grooved ribbed stems. Heads numerous. Achenes terete. Pappus white.

Fl. & Fr. : July - September.

Kangra (BSD, RRL), Kinnaur (DD).

Throughout India.

Vicoa indica (Willd.) DC. in Wight. Contrib. 10. 1834 ; Nair, Fl. Bash. Himal. 168. 1977. *Inula indica* Willd. Sp. Pl. 3 : 2092. 1804. *V. auriculata* Cass. in Ann. Sc. Nat. Ser. 1. 17 ; 418. 1829 ; Hook. f. Fl. Brit. India 3 : 297. 1881 ; Collett, Fl. Siml. 260. 1902.

Roughly, pubescent, rigid herbs with usually red stem. Heads orange yellow. Achenes pale, terete, sparsely hairy.

Fl. & Fr. : August November.

Kangra (DD, RRL), Kinnaur (DD), Simla (DD).

Throughout the drier parts of India and Western Himalaya.

Waldheimia glabra (Decne.) Regel in Acta Horti. Petrop. 6 : 310. 1879. (ex *W. tridactylites* Kar. & Kir.). *Allardia glabra* Decne. in Jacqu. Voy. Bot. Inde. 4 : 88. t. 96. 1844 ; Hook. f. Fl. Brit. India 3 : 313. 1881 *p. p.*

Densely tufted, glabrous or sparsely woolly, strongly scented herbs. Heads sessile, purple.

Fl. & Fr. : July September.

Chamba (DD), Lahul and Spiti (BSD, DD).

Eastern and Western Tibet, Ladakh and Himachal Pradesh.

Waldheimia stoliczkai (Clarke) Ostenf. in Hedin. 50. Tibet 6 : 38. 1922. *Allardia stoliczkai* Clarke, Comp. Ind. 145. 1876 ; Hook. f. Fl. Brit. India 3 : 313. 1881.

Glabrous, loosely tufted herbs.

Fl. & Fr. : June August.

Lahul and Spiti (DD), Chandra valley (BSIP).

Western Tibet and Himachal Pradesh.

Waldheimia tomentosa (Decne.) Regel in Acta Horti. Petrop. 6 : 308. 1879. *Allardia tomentosa* Decne. in Jacqu. Voy. Bot. Inde. 4 : 87. t. 95. 1844 ; Hook. f. Fl. Brit. India 3 : 313. 1881.

Loosely tufted, soft-white, woolly herbs. Achenes grooved, pale.

Fl. & Fr. : June September.

Chamba (DD), Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Xanthium strumarium L. Sp. Pl. 987. 1753 ; Hook. f. Fl. Brit. India 3 : 303. 1881 ; Collett, Fl. Siml. 261. 1902 ; Nair, Fl. Bash. Himal. 168. 1977.

Erect, herbs. Leaves rough, cordate triangular. Heads greenish - white. Fruit clothed with hooked prickles.

Fl. & Fr. : July - October.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Simla (DD), Solan (DD).

Throughout India.

Youngia japonica (L.) DC. Prodr. 7 : 194. 1838 ; Nair, Fl. Bash. Himal. 168. 1977. *Prenanthes japonica* L. Mant. Pl. 107. 1767. *Crepis japonica* (L.) Benth. Fl. Hongk. 194. 1861 ; Hook. f. Fl. Brit. India 3 : 395. 1881 ; Collett, Fl. Siml. 281. 1902.

Erect, glabrous herbs. Leaves membranous. Heads yellow. Achenes flattened, finely ribbed, red - brown.

Fl. & Fr. : May - August.

Kinnaur (DD), Kulu (LWG), Lahul and Spiti (DD), Simla (BSIP, DD).

Throughout India.

Youngia tenuifolia (Willd.) Bab. & Steb. ssp. *diversifolia* (Ledeb. ex Spreng.) Bab. & Steb. The Genus Youngia, Carnegie Inst. Publ. 484 : 54. t. 12. f. k-q. 1937. *Crepis tenuifolia* Willd. Sp. Pl. 3. 1605. 1800 ; Hook. f. Fl. Brit. India 3 : 395. 1881. *Prenanthes diversifolia* Ledeb. ex Spreng. Sys. Veg. 3 : 657. 1826.

Branched, glabrous herbs with woody roots. Heads numerous. Achenes red - brown, narrowly fusiform.

Fl. & Fr. : June - August.

Lahul and Spiti (BSD).

Western Himalaya and Western Tibet.

CAMPANULACEAE

Campanula alsinoides Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 24. 1858 ; Clarke in Hook. f. Fl. Brit. India 3 : 441. 1881 ; Stewart, Ann.

Cat. Vas. Pl. W. Pak. & Kash. 707. 1972 ; Nair, Fl. Bash. Himal. 169. 1977.

Slender herb, patently hairy. Leaves oblong - ovate, obscurely toothed, pilose. Capsule subglobose.

Fl. & Fr. : August - September.

Chamba (DD), Kinnaur (DD).

North Western Himalaya.

Campanula argyrotricha Wall. ex A. DC. Prodr. 7 : 473. 1839 ; Clarke in Hook. f. Fl. Brit. India 3 : 441. 1881 ; Collett, Fl. Siml. 291. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 707. 1972 ; Nair, Fl. Bash. Himal. 169. 1977.

Procumbent hairy, herbs. Leaves sessile, ovate. Flowers blue.

Fl. & Fr. : June - October.

Lahul & Spiti (BSD, DD), Simla (DD).

North Western Himalaya.

Campanula aristata Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 98. 1824 ; Clarke in Hook. f. Fl. Brit. India 3 : 441. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 707. 1972.

Annual herb. Stem simple. Radical leaves elliptic, long petioled. Flowers solitary, deep blue. Capsule narrowly oblong, contracted near the apex.

Fl. & Fr. : June - September.

Chamba (DD), Lahul & Spiti (BSD, DD).

Alpine Himalaya, Kashmir to Sikkim.

Campanula cana Wall. ex Roxb. Fl. Ind. ed. Carey, 2 : 101. 1824 ; Clarke in Hook. f. Fl. Brit. India 3 : 440. 1881 ; Nair, Fl. Bash. Himal. 169. 1977.

Annual herb. Stem patently hispid. Leaves scabrous above somewhat tomentose beneath. Calyx tube hirsute.

Fl. & Fr. : September - October.

Kinnaur (DD), Simla (DD).

Western Himalaya to Bhutan and Assam.

Campanula cashmeriana Royle, Ill. Bot. Himal. Mount. 254. t. 62. 7.1. 1835 ; Clarke in Hook. f. Fl. Brit. India 3 : 441. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 708. 1972 ; Nair, Fl. Bash. Himal. 169. 1977. *C. cashmeriana* var. *evolvulacea* (DC.) Clarke in Hook. f. Fl. Brit. India 3 : 441. 1881. *C. evolvulacea* Royle, Ill. Bot. Himal. Mount. 1 : 254. 1835. *C. ruderalis* Aitch. & Hemsl. in Journ. Linn. Soc. 19 : 174. 1882.

Annual villous herb. Stem terete. Corolla bright blue.

Fl. & Fr. : June September.

Chamba (DD), Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Campanula colorata Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 98. 1824 ; Clarke in Hook. f. Fl. Brit. India 3 : 440. 1881 ; Collett, Fl. Siml. 291. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 708. 1972 ; Nair, Fl. Bash. Himal. 169. 1977. *C. ramulosa* Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 100. 1824 ; Nair, Fl. Bash. Himal. 170. 1977.

Erect, hairy herb. Leaves narrowly lanceolate, crenate. Flowers purple white.

Fl. & Fr. : June October.

Chamba (BSD, DD), Kangra (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD, LWG), Lahul and Spiti (BSD, DD), Simla (BSD, BSIP, DD, LWG), Solan (BSD), Una (BSD).

Temperate Himalaya, Khasia hills and Western Ghats.

Campanula latifolia L. Sp. Pl. 165. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 439. 1881 ; Collett, Fl. Siml. 290. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 708. 1972 ; Nair, Fl. Bash. Himal. 170. 1977.

Erect herb. Stem glabrous. Leaves coarsely pubescent. Corolla large, dark purple.

Fl. & Fr. : July October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul & Spiti (BSD, DD), Simla (BSD, DD).

Western Himalaya.

Campanula wattiana Nayar et Babu in J. Indian Bot. Soc. 39 : 184. 1970 ; Nair, Fl. Bash. Himal. 170. 1977.

Annual herb. Corolla sub-rotate, divided more than half way down. Style long, exerted.

Fl. & Fr. : September - October.

Kinnaur (DD), Simla (DD).

Western Himalaya.

Cephalostigma hirsutum Edgew. in Trans. Linn. Soc. 20 : 81. 1846 ; Clarke in Hook. f. Fl. Brit. India 3 : 429. 1881 ; Collett, Fl. Siml. 170. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 709. 1972 ; Nair, Fl. Bash. Himal. 170. 1977.

Annual herb, coarsely hairy. Leaves sessile, lanceolate, crenate. Corolla blue.

Fl. & Fr. : August - October.

Kinnaur (DD).

Western Himalaya.

Codonopsis clematidea (Schrenk) Clarke in Hook. f. Fl. Brit. India 3 : 433. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 709. 1972. *Wahlenbergia clematidea* Schrenk, Enum. Pl. Nov. 38. *Glossocomia clematidea* Fish. in Regel Gartenfl. 226. t. 167. f. 2. 1856.

Annual herb. Leaves large, subglabrous. Flowers campanulate, sky-blue.

Fl. & Fr. : June - July.

Lahul and Spiti (DD).

Western Himalaya.

Codonopsis ovata Benth. in Royle, Ill. Bot. Himal. Mount. 253. t. 69. 73. 1835 ; Clarke in Hook. f. Fl. Brit. India 3 : 433. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 710. 1972.

Annual herb. Leaves ovate, hairy on both surfaces. Peduncle long. Calyx lobes elliptic - oblong. Corolla broadly campanulate, sky-blue.

Fl. & Fr. : June - September.

Chamba (DD), Lahul and Spiti (BSD, DD, RRL).

Western Himalaya.

Codonopsis rotundifolia Benth. in Royle, Ill. Bot. Himal. Mount. 254. t. 62. f. 2. 1835; Clarke in Hook. f. Fl. Brit. India 3 : 432. 1881; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 710. 1972; Nair, Fl. Bash. Himal. 170. 1977.

Weak twining herbs, sparsely pilose. Corolla greenish yellow with purple streaks.

Fl. & Fr. : July - October.

Chamba (BSD, DD), Kinnaur (BSD), Kulu (BSD, DD), Lahul and Spiti (DD).

Western Himalaya and Nepal.

Codonopsis viridis (DC.) Roxb. Fl. Ind. ed. Carey, 2 : 103. 1824; Clarke in Hook. f. Fl. Brit. India 3 : 431. 1881; Nair, Fl. Bash. Himal. 170. 1977. *Wahlenbergia viridis* DC. Prodr. 7 : 424. 1838.

Twining herb. Corolla yellow, pilose in bud condition.

Fl. & Fr. : August - September.

Simla (DD).

Himachal Pradesh to Nepal.

Cyananthus lobatus Wall. ex Benth. in Royle, Ill. Bot. Himal. Mount. 309. t. 69. f. 1. 1835; Clarke in Hook. f. Fl. Brit. India 3 : 433. 1881; Nair, Fl. Bash. Himal. 171. 1977.

Annual, pilose herb. Calyx with black spreading hairs. Corolla blue, violet or rarely white.

Fl. & Fr. : August - October.

Chamba (DD, RRL), Kinnaur (BSD), Kulu (DD), Lahul and Spiti (BSD, DD).

Alpine Himalaya, Himachal Pradesh to Sikkim.

Lobelia heyneana Roem. et Schultes, Syst. Veg. 5: 50. 1819; Hara, Fl. E. Himal. 327. 1966. *L. trialata* Buch. - Ham. in D. Don, Prodr. Fl. Nepal. 157. 1825; Clarke in Hook. f. Fl. Brit. India 3 : 425. 1881; Collett, Fl. Siml. 239. 1902; Nair, Fl. Bash. Himal. 171. 1977.

Glabrous herb. Stem 3 - angled, winged. Corolla 2 - lipped. Anthers united.

Fl. & Fr. : August September.

Chamba (Hook. f. 1881), Simla (DD).

Northern India, Bhutan to Bombay.

Lobelia pyramidalis Wall. in *Asiat. Res.* 13 : 376. 1820 ; Clarke in Hook. f. *Fl. Brit. India* 3 : 426. 1881. *p. p.* ; Hara, *Fl. E. Himal.* 1 : 327. 1966.

Herb. Stem widely branched. Leaves linear lanceolate, finely serrulate. Racemes many flowered

Fl. & Fr. ; September October.

Simla (DD).

Himachal Pradesh eastwards and Khasia hills.

ERICACEAE

H. J. CHOWDHERY

Cassiope fastigiata (Wall.) D. Don in *Edinb. Phil. Journ.* 17 : 158. 1834 ; Clarke in Hook. f. *Fl. Brit. India* 3 : 459. 1882 ; Collett, *Fl. Siml.* 293. 1902 ; Parker, *For. Fl. Punj.* ed. 3. 297. 1956. **Andromeda fastigiata** Wall. in *Asiat. Research.* 13 : 394. 1820.

Densely tufted herbs or shrubs. Leaves ciliate. Flowers widely campanulate, white.

Fl. & Fr. : May September.

Chamba (BSD), Kangra (BSIP, DD), Kinnaur (BSD, DD), Kulu (DD), Lahul & Spiti (BSD, DD, RRL), Simla (BSD, DD).

Alpine Himalaya Kashmir to Bhutan.

Gaultheria nummularioides D. Don, *Prodr. Fl. Nep.* 150. 1825 ; Clarke in Hook. f. *Fl. Brit. India* 3 : 457. 1882 ; Collett, *Fl. Siml.* 293. 1902 ; Parker, *For. Fl. Punj.* ed. 3. 296. 1956 ; Nair, *Fl. Bash. Himal.* 171. 1977.

Much branched, densely leafy, hirsute shrubs. Leaves setulose beneath and on the margins. Flowers reddish white. Capsule with succulent, blue black calyx.

Fl. & Fr. : July September.

Simla (DD).

Throughout the Himalaya.

Gaultheria trichophylla Royle, III. Bot. Himal. Mount. 200. t. 63. f. 3. 1835 ; Clarke in Hook. f. Fl. Brit. India 3 : 457. 1882 ; Parker, For. Fl. Punj. ed. 3. 296. 1956 ; Nair, Fl. Bash. Himal. 172. 1977.

Prostrate shrubs with much branched wiry stem. Leaves with long-ciliate margins. Flowers red or nearly white. Fruits capsule with blue-black succulent calyx.

Fl. & Fr. : June September.

Chamba (BSD, DD), Kangra (DD), Kinnaur (DD), Kulu (BSD, DD), Lahul & Spiti (BSD, DD).

Alpine Himalaya from Himachal Pradesh to Sikkim.

Lyonia ovalifolia (Wall.) Drude in Pflanzent. 4 : 44. 1889 ; Nair, Fl. Bash. Himal. 172. 1977. *Andromeda ovalifolia* Wall. in Asiat. Reser. 13 : 391. 1820. *Pieris ovalifolia* (Wall.) D. Don in Edinb. Phil. Journ. 17 : 159. 1834 ; Clarke in Hook. f. Fl. Brit. India 3 : 460. 1882 ; Collett, Fl. Siml. 293. 1902 ; Parker, For. Fl. Punj. ed. 3. 297. 1956.

Shrubs or small trees. Flowers white. Capsule globose, glabrous.

Fl. & Fr. : May - August.

Chamba (BSD, BSIP, DD), Kangra (BSD, DD, LWG), Kinnaur (DD), Kulu (BSD, DD, LWG), Simla (DD, LWG).

Temperate Himalaya, Kashmir to Bhutan and Khasia hills.

Rhododendron anthopogon D. Don in Mem. Wern. Nat. Hist. Soc. 3 : 409. 1821 ; Clarke in Hook. f. Fl. Brit. India 3 : 472. 1882 ; Parker, For. Fl. Punj. ed. 3. 299. 1956 ; Nair, Fl. Bash. Himal. 172. 1977.

Small shrubs with densely scaly branchlets. Flowers yellow.

Fl. & Fr. : June July.

Simla (DD).

Alpine Himalaya Kashmir to Bhutan.

Rhododendron arboreum Sm. Exot. Bot. 1 : 9. t. 6. 1804 - 5 ; Clarke in Hook. f. Fl. Brit. India 4 : 465. 1882 ; Collett, Fl. Siml. 294. 1902 ; Parker, For. Fl. Punj. ed. 3. 398. 1956 ; Nair, Fl. Bash. Himal. 172. 1977.

Trees. Leaves woolly beneath or tomentose. Flowers red. Capsule cylindric, curved.

Fl. & Fr. : April September.

Chamba (BSD, DD), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (BSIP, DD), Simla (BSD, BSIP, DD).

Temperate Himalaya, Kashmir to Bhutan.

Rhododendron campanulatum D. Don in Mem. Wern. Nat. Hist. Soc. 3 : 410. 1821 ; Clarke in Hook. f. Fl. Brit. India 3 : 466. 1882 ; Parker, For. Fl. Punj. ed. 3. 299. 1856 ; Nair, Fl. Basb. Himal. 172. 1977.

Shrubs. Flowers campanulate, purple. Capsule glabrous, cylindric.

Fl. & Fr. : May September.

Chamba (BSD, CDRI, DD), Kinnaur, (BSD, DD), Kulu (BSD, DD), Lahul & Spiti (BSD, DD), Simla (DD).

Alpine Himalaya Kashmir to Bhutan.

Rhododendron hypenanthum Balf. f. in Notes. Roy. Bot. Gard. Edinb. 9 : 291. 1916. *R. anthopogon* D. Don var. *hypenanthum* Hara in Enum. Fl. Pl. Nep. 3 : 56. 1982.

Flowers milky white.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD), Simla (DD).

North - Western Himalaya upto Bhutan.

Rhododendron lepidotum Wall. ex G. Don, Gen. Syst. 3 : 845. 1834 ; Clarke in Hook. f. Fl. Brit. India 3 : 471. 1882 ; Collett, Fl. Siml. 294. 1902 ; Parker, For. Fl. Punj. ed. 3. 269. 1956 ; Nair, Fl. Basb. Himal. 173. 1977.

Shrubs. Flowers yellow or dull purple.

Fl. & Fr. : May August.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kangra (LWG), Lahul & Spiti (BSD, DD), Mandi (LWG), Simla (BSD, DD, LWG).

Temperate and alpine Himalaya Kashmir to Bhutan.

PYROLACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Pyrola rotundifolia L. Sp. Pl. 396. 1753 ; Hook. f. Fl. Brit. India 3 : 475. 1882.

Glabrous herbs with short, leafy stem. Flowers pink or rose white, drooping.

Fl. & Fr. : June - September.

Chamba (DD).

North Western and Eastern Himalaya and Khasia hills.

MONOTROPACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Monotropa hypopithys L. Sp. Pl. 387. 1753. *Hipopithys lanuginosa* (auct. non Nutt.) Clarke in Hook. f. Fl. Brit. India 3 : 476. 1882 ; Collett, Fl. Siml. 296. 1902 ; Nair, Fl. Bash. Himal. 173. 1977.

Pubescent - hairy, pale - yellow, brown herbs. Flowers pale - yellow, in terminal bracteate raceme, terminal flowers have 5 petals and 10 stamens, the rest have 4 petals and 8 stamens, petals densely hairy from inside.

Fl. & Fr. : June - September.

Lahul and Spiti (BSD), Simla (DD).

Temperate Himalaya.

Monotropa uniflora L. Sp. Pl. 387. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 476. 1882 *p. p.* ; Collett, Fl. Siml. 295. 1902 ; Nair, Fl. Bash. Himal. 173. 1977.

Glabrous, waxy, white herbs. Flowers waxy white, solitary terminal, drooping.

Fl. & Fr. : July - September.

Simla (DD).

Temperate Himalaya.

PLUMBAGINACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Plumbago zeylanica L. Sp. Pl. 151. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 480. 1882 ; Collett, Fl. Siml. 296. 1902 ; Parker, For. Fl. Punj. ed. 3. 300. 1956 ; M. H. Bokhari in Fl. W. Pak. 28 : 2. 1972 ; Nair, Fl. Bash. Himal. 173. 1977.

Perennial herb or under shrubs. Branches angular, striated. Leaf petiole with a dilated amplexicaule base. Inflorescence rachis glandular. Flowers white. Calyx covered with stalked glands.

Fl. & Fr. : April - September.

Chamba (BSIP), Kangra (BSD), Kinnaur (DD), Kulu (DD), Sirmur (BSD).

Throughout India.

PRIMULACEAE

H. J. CHOWDHERY

Anagallis arvensis L. Sp. Pl. 148. 1753 ; Hook. f. Fl. Brit. India 3 : 506. 1882 ; Collett, Fl. Siml. 302. 1902 ; Nair, Fl. Bash. Himal. 174. 1977.

Glabrous, decumbent, gland dotted herbs. Flowers bright blue, closing in dull weather.

Fl. & Fr. : April - July.

Chamba (DD), Kangra (RRL), Kinnaur (BSD), Kulu (BSIP, DD), Simla (DD), Sirmur (BSD).

Throughout India.

Anagallis pumila Sw. Prodr. Veg. Ind. Occ. 1 : 40. 1788 ; Nair, Fl. Bash. Himal. 174. 1977. *Centunculus tenellus* Duby in DC. Prodr. 8 : 72. 1844 ; Hook. f. Fl. Brit. India 3 : 506. 1882 ; Collett, Fl. Siml. 303. 1902.

Erect, small herbs. Flowers minute, white or pink, solitary axillary.

Fl. & Fr. : June - September.

Kulu (DD), Simla (DD).

Central and Western Himalaya.

Androsace chamaejasme Host. Pl. Austr. 95. 1797 ; Hook. f. Fl. Brit. India 3 : 499. 1882.

Loosely tufted, laxly villous herbs with stolons. Leaves densely tufted, sessile, obovate - lanceolate, in rosettes. Leaves clothed on the margins with spreading cilia.

Fl. & Fr. : July - October.

Chamba (DD).

Western Tibet and Himachal Pradesh.

Androsace cordifolia Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 17. 1825 ; Hook. f. Fl. Brit. India 3 : 500. 1882.

Villous herbs. Leaves ovate - cordate. Umbels 5 - fid with setaceous bracts. Calyx campanulate, shorter than the corolla, enlarging over the fruits.

Fl. & Fr. : June - September.

Chamba (DD), Kinnaur (DD).

Himachal Pradesh and Nepal.

Androsace Jacquemontiana Duby ex DC. Prodr. 8 : 51. 1844. *A. villosa* L. var. *Jacquemontiana* Kn. Prim. 192. 1905.

Fl. & Fr. : May - August.

Chamba (DD), Kinnaur (DD).

North Western Himalaya.

Androsace lanuginosa Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 15. 1824 ; Hook. f. Fl. Brit. India 3 : 498. 1882 ; Collett, Fl. Siml. 301. 1902 ; Nair, Fl. Bash. Himal. 174. 1902 ; Nair, Fl. Bash. Himal. 174. 1902.

Silvery white, silky, pubescent herbs with runner like trailing branches. Flowers pale or dark purple, tinged with blue, yellow in the centre.

Fl. & Fr. : May October.

Chamba (BSD, DD, RRL), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (DD), Simla (BSD, DD, LWG).

Western Himalaya.

Androsace mucronifolia Watt. in Journ. Linn. Soc. Bot. 18 : 381. t. 14b. 1881. *A. microphylla* Hook. f. Fl. Brit. India 3 : 498. 1882.

Densely tufted herbs. Leaves minute, concave, incurved.

Fl. & Fr. : May August.

Kulu (DD).

Himachal Pradesh, Kashmir and Western Tibet.

Androsace rotundifolia Hardw. in As. Res. 6 : 350. 1799 ; Hook. f. Fl. Brit. India 3 : 496. 1882 ; Collett, Fl. Siml. 300. 1902 ; Nair, Fl. Bash. Himal. 174. 1977.

Woolly herbs, devoid of runners. Flowers deep pink to white.

Fl. & Fr. : May September.

Chamba (BSD, DD, LWG), Kinnaur (BSD, DD), Kangra (BSD), Kulu (DD), Lahul and Spiti (BSD, DD), Mandi (LWG), Simla (BSD, DD, LWG).

Temperate Himalaya.

Androsace rotundifolia Hardw. var. *glandulosa* Hook. f. Fl. Brit. India 3 : 496. 1882.

Glandular - pubescent herbs. Corolla is much larger than the calyx lobes.

Fl. & Fr. : May August.

Lahul and Spiti (RRL).

North Western Himalaya.

Androsace sarmentosa Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 14. 1824 ; Hook. f. Fl. Brit. India 3 : 498. 1882 ; Collett, Fl. Siml. 300. 1902 ; Nair, Fl. Bash. Himal. 175. 1977.

Softly hairy herbs with long runners forming rosettes of leaves at the ends. Flowers pale, pink, purple, mouth of the tube yellow.

Fl. & Fr. : May August.

Chamba (BSD, DD, LWG), Kinnaur (DD), Kulu (DD, RRL), Lahul and Spiti (DD), Simla (DD, LWG).

Himalaya Kashmir to Sikkim.

Androsace sempervivoides Jacqu. ex Duby in DC. Prodr. 8 : 50. 1844 ; Hook. f. Fl. Brit. India 3 : 497. 1882.

Small, stoloniferous herbs. Leaves glabrous. Flowers in glandular, pubescent umbels.

Fl. & Fr. : May August.

Chamba (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD, RRL).

Western Tibet and Western Himalaya.

Androsace umbellata (Lour.) Merrill in Phil. Journ. Sci. 15 : 237. 1919. *Androsace saxifragaefolia* Bunge, Mem. Acad. Sci. Petersb. 2 : 127. 1835 ; Hook. f. Fl. Brit. India 3 : 496. 1882.

Scapigerous herbs. Leaves in basal rosette. Flowers in umbels, white.

Fl. & Fr. : February May.

Hamirpur (DD), Kinnaur (BSD), Mandi (BSIP), Solan (BSD), Una (BSD).

Throughout India.

Cortusa brotheri Pax. ex Lipsky, Acta Hort. Petrop. 18 : 87. 1901. *Cortusa malioli* Hook. f. Fl. Brit. India 3 : 501. 1882 (non L.).

Scapigerous, pubescent herbs. Leaves membranous, long petioled, cordate. Flowers in umbels, purple.

Fl. & Fr. : May September.

Chamba (BSD, DD), Lahul and Spiti (BSD, DD).

Western Himalaya.

Lysimachia alternifolia Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 26. 1824 ; Hook. f. Fl. Brit. India 3 : 504. 1882 ; Collett, Fl. Siml. 302. 1902.

Pubescent or slightly hairy herbs, branching from the base. Flowers yellow, solitary, axillary.

Fl. & Fr. : May September.

Kinnaur (DD).

Temperate and subtropical Himalaya.

Lysimachia chenopodioides Watt ex Hook. f. Fl. Brit. India 3 : 503. 1882 ; Collett, Fl. Siml. 302. 1902 ; Nair, Fl. Bash. Himal. 175. 1977.

Glabrous, much branched herbs. Flowers solitary, axillary, pinkish white.

Fl. & Fr. : May - August.

Chamba (BSD), Kinnaur (DD), Kulu (BSD, DD), Simla (BSD, DD).

Temperate Himalaya.

Lysimachia ferruginea Edgew. in Trans. Linn. Soc. Bot. 20 : 83. 1846 ; Nair, Fl. Bash. Himal. 175. 1977. *Lysimachia japonica* Hook. f. Fl. Brit. India 3 : 505. 1882 *p. p.* (non Tunb.) ; Collett, Fl. Siml. 302. 1902.

Hairy and densely pubescent herbs with prostrate stems. Flower yellow.

Fl. & Fr. : May August.

Chamba (BSD, DD), Kinnaur (DD), Kulu (BSD, DD), Simla (DD).

Temperate Himalaya.

Lysimachia lobelioides Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 29. 1824 ; Hook. f. Fl. Brit. India 3 : 502. 1882 ; Collett, Fl. Siml. 301. 1902 ; Nair, Fl. Bash. Himal. 175. 1977.

Glabrous herbs with angular stems. Flowers pale purple or white in terminal racemes.

Fl. & Fr. : May August.

Kinnaur (BSD, DD), Kulu (DD), Simla (BSD, DD).

Western and Central Himalaya.

Lysimachia prolifera Klatt in Abh. Naturw. Ver. Hamburg 4 (4) : 30. t. 16. 1866 ; Hook. f. Fl. Brit. India 3 : 503. 1882.

Small, erect, creeping or ascending herbs. Flowers in small terminal corymbs, funnel shaped, pale pink or white.

Fl. & Fr. : May August.

Chamba (BSD), Kangra (BSD).

Temperate Himalaya.

Lysimachia pyramidalis Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 28. 1824 ; Hook. f. Fl. Brit. India 3 : 503. 1882 ; Collett, Fl. Siml. 302. 1902 ; Nair, Fl. Bash. Himal. 175. 1977.

Glabrous, erect herbs. Flowers pale purple, bell - shaped.

Fl. & Fr. : May October.

Chamba (BSD, DD), Kinnaur (DD), Kulu (DD), Simla (DD).

North Western Himalaya and Nepal.

Primula denticulata Sm. Exot. Bot. 2 : 109. t. 114. 1806 ; Hook. f. Fl. Brit. India 3 : 485. 1882 ; Collett, Fl. Siml. 298. 1902 ; Nair, Fl. Bash. Himal. 176. 1977.

Small herbs. Leaves wrinkled and wavy. Flowers in terminal umbels, purple to pale - lilac.

Fl. & Fr. : May August.

Chamba (DD), Kinnaur (DD), Kulu (DD, RRL), Lahul and Spiti (DD), Simla (DD).

Temperate Himalaya.

Primula elliptica Royle, Ill. Bot. Himal. Mount. 311. pl. 76. 1836 ; Hook. f. Fl. Brit. India 3 : 448. 1882.

Herbs. Leaves elliptic ovate, petiole sharply toothed. Flowers purple.

Fl. & Fr. : May - August.

Kulu (DD), Lahul and Spiti (DD).

Western Himalaya.

Primula erosa Wall. ex Regel in Bot. Zeit. 333. 1853 ; Hook. f. Fl. Brit. India 3 : 486. 1882. *P. denticulata* var. *erosa* Wall. ex Duby in DC. Prodr. 8 : 45. 1844.

Puberulous or glabrous herbs. Leaves membranous. Flowers in umbels, purple.

Fl. & Fr. : May - September.

Chamba (DD).

Temperate Himalaya.

Primula floribunda Wall. Tent. Fl. Nepal. 43. t. 33. 1826 ; Hook. f. Fl. Brit. India 3 : 495. 1882 ; Collett, Fl. Siml. 299. 1902 ; Nair, Fl. Bash. Himal. 176. 1977.

Glandular pubescent herbs. Leaves thin, narrowed into a broad winged stalk, coarsely and irregularly toothed. Flowers yellow.

Fl. & Fr. : April - August.

Chamba (DD), Kinnaur (DD), Simla (DD).

Western Himalaya upto Nepal.

Primula heydei Watt in Journ. Linn. Soc. Bot. 20 : pl. 5. f. 4C. 1882.

Stoloniferous, densely tufted herbs. Leaves rosulate, coarsely toothed. Flowers pale lilac.

Fl. & Fr. : June - August.

Lahul and Spiti (DD).

Western Tibet and Himachal Pradesh.

Primula involucrata Wall. ex Duby in DC. Prodr. 8 : 42. 1844 ; Hook. f. Fl. Brit. India 3 : 488. 1882 ; Nair, Fl. Bash. Himal. 176. 1977.

Erect herbs. Leaves coriaceous. Flowers bluish - white.

Fl. & Fr. : May - August.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (DD, RRL).

Alpine Himalaya, Kashmir to Bhutan and Assam.

Primula macrophylla D. Don, Prodr. Fl. Nepal. 80. 1825. *P. aitchisonii* Pax in Engler, Pflanzenr. 4. 237 : 105. 1905. *P. moorcroftiana* Wall. ex Klatt, Journ. Bot. 6 : 120. 1868.

Glabrous herbs. Flowers purple.

Fl. & Fr. : May - August.

Chamba (DD), Kinnaur (BSD, DD), Kulu (BSD, DD, RRL), Lahul and Spiti (DD).

Alpine and subalpine Himalaya, Kashmir to Bhutan and Tibet.

Primula minutissima Jacquem. ex Duby in DC. Prodr. 8 : 42. 1844 ; Hook. f. Fl. Brit. India 3 : 494. 1882 ; Nair, Fl. Bash. Himal. 176. 1977.

Very small, densely tufted, stoloniferous herbs. Leaves densely crowded. Flowers bright purple.

Fl. & Fr. : May - September.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (BSD, DD, RRL), Simla (DD).

Alpine Himalaya, Kashmir to Sikkim.

Primula obtusifolia Royle, Ill. Bot. Himal. Mount. 311. t. 77. t. 1. 1835 ; Hook. f. Fl. Brit. India 3 : 489. 1882 ; Nair, Fl. Bash. Himal. 177. 1977.

Herbs with stout root stocks, covered with fleshy, broad, sheathing scales. Flowers large, bright blue or purple.

Fl. & Fr. : May - September.

Kinnaur (DD), Lahul and Spiti (DD).

Eastern and Western Himalaya.

Primula petiolaris Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 22. 1824 ; Hook. f. Fl. Brit. India 3 : 493. 1882 ; Collett, Fl. Siml. 298. 1902.

Glabrous or puberulous herbs. Leaves thin, membranous, narrowed into a winged stalk. Flowers purple - white.

Fl. & Fr. : April - August.

Simla (DD).

Temperate Himalaya, Himachal Pradesh to Sikkim.

Primula reptans Hook. f. ex Watt in J. Linn. Soc. Bot. 20 : 14. t. 13 B. 1882 ; Hook. f. Fl. Brit. India 3 : 494. 1882.

Tufted, minutely puberulous herbs. Flowers solitary, pale purple,

Fl. & Fr. : May - August.

Lahul and Spiti (DD).

Western Himalaya upto Nepal.

Primula rosea Royle, Ill. Bot. Himal. Mount. 311. t. 75. 1836 ; Hook. f. Fl. Brit. India 3 : 488. 1882.

Large tufted, glabrous herbs. Flowers rose red.

Fl. & Fr. : May - August.

Chamba (DD), Kulu (BSD, DD), Lahul and Spiti (DD).

Western Himalaya.

Primula sessilis Royle ex Craib in Notes Roy. Bot. Gard. Edinb. 6 : 256. 1917. *P. petiolaris* var. *nana* Hook. f. Fl. Brit. India 3 : 493. 1882. *P. P.*

Mealy, glabrous or puberulous herbs. Flowers pale purple or pink white.

Fl. & Fr. : May - August.

Kinnaur (DD), Kulu (DD).

Temperate Himalaya, Kashmir to Nepal.

Primula sibirica Jacq. Misc. Austr. 1 : 161. 1778 ; Hook. f. Fl. Brit. India 3 : 487. 1882.

Herbs. Leaves coriaceous, rosulate. Flowers pink.

Fl. & Fr. : May - August.

Chamba (DD), Kulu (DD), Lahul and Spiti (DD, RRL).

Western Tibet and Western Himalaya.

Primula stuartii Wall. ex Roxb. Fl. Ind. ed. Carey, 2 : 20. 1824 ; Hook. f. Fl. Brit. India 3 : 490. 1882 ; Nair, Fl. Bash. Himal. 177. 1977.

Glabrous herbs. Leaves coriaceous with broadly membranous petiole below. Flowers yellow.

Fl. & Fr. : July September.

Above Sdilling (DD).

Throughout, alpine, sup alpine Himalaya.

Samolus valerandi L. Sp. Pl. 443. 1753 ; Hook. f. Fl. Brit. India 3 : 506. 1882.

Glabrous herbs. Flowers in terminal racemes or corymbs, white, corolla perigynous.

Fl. & Fr. : May July.

Kinnaur (DD), Sirmur (DD).

Western Himalaya.

MYRSINACEAE

H. J. CHOWDHERY

Ardisia solanacea Roxb. Pl. Corom. 1 : 27, t. 27. 1795. *Ardisia humilis* (non Vahl) sensu Clarke in Hook. f. Fl. Brit. India 3 : 529. 1882.

Erect shrubs. Leaves coriaceous. Flowers pink.

Fl. & Fr. : April June.

Kangra (DD).

Throughout India.

Embelia tsjerlam cottam (Roem. & Schult.) A. DC. in Trans. Linn. Soc. 17 : 131. 1834. *Ardisia tsjerlam cottam* Roem. & Schult. Syst. Veg. 5 : 518. 1819. *Embelia robusta* Roxb. Fl. Ind. ed. Carey, 2 : 287. 1824 : Clarke in Hook. f. Fl. Brit. India 3 : 515. 1882.

Large, rambling shrubs or small trees. Leaves generally rusty-pubescent. Flowers greenish yellow or white. Berry red.

Fl. & Fr. : April - September.

Kangra (DD).

Throughout India.

Maesa montana A. DC. Prodr. 8 : 79. 1844. *Maesa indica* Wall. ex Clarke in Hook. f. Fl. Brit. India 3 : 509. 1882. *p. p.*

Trees or sometimes shrubs. Leaves coriaceous. Flowers in axillary racemes, shorter than the leaves.

Fl. & Fr. : December - April.

Chamba (DD).

Throughout India.

Myrsine africana L. Sp. Pl. 196. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 511. 1882 ; Collett, Fl. Siml. 304. 1902 ; Nair, Fl. Bash. Himal. 177. 1977.

Pubescent shrubs or small trees. Flowers in clusters, white.

Fl. & Fr. : April - October.

Chamba (CDRI, DD, LWG), Kinnaur (DD), Kulu (DD), Mandi (LWG), Simla (DD).

Himalaya from Kashmir to Nepal.

Myrsine semiserrata Wall. in Roxb. Fl. Ind. ed. Carvey, 2 : 293. 1824 ; Clarke in Hook. f. Fl. Brit. India 3 : 511. 1882 ; Collett, Fl. Siml. 304. 1902 ; Nair, Fl. Bash. Himal. 177. 1977.

Glabrous trees or shrubs. Leaves coriaceous. Flowers white.

Fl. & Fr. : April - November.

Chamba (DD), Simla (DD).

Himachal Pradesh, Nepal and Khasia hills.

SAPOTACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Mimusops elengi L. Sp. Pl. 349. 1753 ; Wt. Icon. t. 1586. 1850 ; Clarke in Hook. f. Fl. Brit. India 3 : 548. 1882.

Tree. Flowers white. Berries yellow.

Fl. & Fr. : June - September.

Kangra (RRL).

Frequently cultivated in North India.

EBENACEAE

H. J. CHOWDHERY

Diospyros cordifolia Roxb. *Pl. Corom.* 1 : 38. 1795 ; Parker, *For. Fl. Punj.* ed. 3. 309. 1956.

Trees with rough, dark grey or black bark and young stems pubescent. Leaves softly pubescent on both sides. Male flowers in cymes, female solitary. Fruit dark brown with yellow reddish blotches.

Fl. & Fr. : April - June.

Hamirpur (DD), Una (BSD, DD).

Throughout India.

Diospyros lotus L. *Sp. Pl.* 1057. 1753 ; Clarke in *Hook. f. Fl. Brit. India* 3 : 555. 1882 ; Parker, *For. Fl. Punj.* ed. 3. 308. 1956.

Trees with rough, dark brown or black bark. Leaves pale, glaucous beneath. Fruits ovoid, dark purple.

Fl. & Fr. : April - August.

Chamba (CDRI, DD).

Western Himalaya and Nepal.

Diospyros malabarica (Desr.) Kostel. *Allgem. Med. Pharm. Fl.* 3 : 1099. 1834. *Garcinia malabarica* Desr. in *Lam. Encycl. Meth. B.* 3 : 701. 1792. *Diospyros embryopteris* Pers. *Syn. Fl.* 2 : 624. 1807 ; Clarke in *Hook. f. Fl. Brit. India* 3 : 556. 1882 ; Parker, *For. Fl. Punj.* ed. 3. 310. 1956.

Dense trees. Male flowers in cymes. Fruits subglobose, covered with red tomentum.

Fl. & Fr. : May August.

Throughout India.

Diospyros montana Roxb. Pl. Corom. 1 : 37. t. 48. 1795 ; Clarke in Hook. f. Fl. Brit. India 3 : 555. 1882. *p. p.* ; Parker, For. Fl. Punj. ed. 3. 309. 1956.

Trees with smooth, grey bark. Fruits globose, reddish brown.

Fl. & Fr. : June - October.

Kangra (DD).

Throughout India.

Diospyros tomentosa Roxb. Fl. Ind. Carey, 2 : 532. 1824 ; Clarke in Hook. f. Fl. Brit. India 3 : 564. 1882.

Small trees. Leaves hairy when young. Fruits globose or ovoid, hairy when young, smooth, yellow when ripe.

Fl. & Fr. : June October.

Una (DD).

Plains of India and Himachal Pradesh.

SYMPLOCACEAE

H. J. CHOWDHERY

Symplocos laurina (Retz.) Wall. ex Rehd. in Pl. Witson. 2 : 594. 1916. *Myrtus laurina* Retz. Obs. Bot. 26. 1786. *Symplocos spicata* Roxb. Fl. Ind. ed. 2. 514. 1832 ; Clarke in Hook. f. Fl. Brit. India 3 : 573. 1882.

Small trees. Leaves broadly lanceolate, acute serrulate. Spikes long, branched, rusty - pubescent.

Fl. & Fr. : May - July.

Kulu (DD).

North and East India.

Symplocos paniculata (Thunb.) Miq. in Ann. Mus. B. Lugd. Bat. 3 : 102. 1867. *Prunus paniculatus* Thunb. Fl. Jap. 200. 1784. *Symplocos*

chinensis (Lour.) Druce in Rep. Bot. Exch. Club 4 : 650. 1917 ; Nair, Fl. Bash. Himal. 178. 1977. *S. crataegoides* Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 145. 1825 ; Clarke in Hook. f. Fl. Brit. India 3 : 573. 1882 ; Collett, Fl. Siml. 305. 1902.

Trees or shrubs. Leaves sharply serrulate towards the apex. Flowers white.

Fl. & Fr. : May - September.

Chamba (BSD, DD), Kangra (BSD, DD, LWG), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (DD).

Himalaya - Kashmir to Bhutan.

OLEACEAE

H. J. CHOWDHERY

Fraxinus excelsior L. Sp. Pl. 1057. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 606. 1882 ; Parker, For. Fl. Punj. ed. 3. 314. 1956.

Large trees. Flowers fasciated near the tips of the branches.

Fl. & Fr. : June - September.

Chamba (DD), Kulu (DD).

Temperate Western Himalaya, Ladakh and Western Tibet.

Fraxinus floribunda Wall. ex Roxb. Fl. Ind. 1 : 150. 1820 ; Clarke in Hook. f. Fl. Brit. India 3 : 605. 1882 ; Collett, Fl. Siml. 309. 1902 ; Parker, For. Fl. Punj. ed. 3. 313. 1956 ; Nair, Fl. Bash. Himal. 178. 1977.

Large trees. Leaves toothed, long pointed. Flowers small, white.

Fl. & Fr. : March - September.

Kinnaur (DD), Kulu (CDRI).

Temperate and sub - alpine Himalaya - Kashmir to Bhutan.

Fraxinus micrantha Lingelsh. in Engl. Botan. Jahrb. 40 : 217. 1908 ; Parker, For. Fl. Punj. ed. 3. 313. 1956 ; Nair, Fl. Bash. Himal. 178. 1977.

Large trees with almost sessile leaves and rusty brown pubescens.

Fl. & Fr. : June - September.

Chamba (CDRI), Kinnaur (DD).

North - Western Himalaya upto Nepal.

Fraxinus xanthoxyloides (Wall. ex G. Don) DC. Prodr. 8 : 275. 1844 ; Clarke in Hook. f. Fl. Brit. India 3 : 606. 1882 ; Parker, For. Fl. Punj. ed. 3. 313. 1956 ; Nair, Fl. Bash. Himal. 178. 1977. *Ornus xanthoxyloides* G. Don, Gen. Syst. 4 : 57. 1838.

Trees. Flowers in dense heads, brown from the woolly bracts.

Fl. & Fr. : April - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul & Spiti (DD, RRL).

Temperate Himalaya - Kashmir to Kumaon.

Jasminum arborescens Roxb. Fl. Ind. 1 : 95. 1820 ; Clarke in Hook. f. Fl. Brit. India 3 : 594. 1882 ; Parker, For. Fl. Punj. ed. 3. 315. 1956.

Large shrubs with hairy branchlets. Flowers white, fragrant in terminal trichotomous cymes.

Fl. & Fr. : April - August.

Kangra (DD).

North - Western Himalaya.

Jasminum dispersum Wall. ex Roxb. Fl. Ind. 1 : 99. 1820 ; Clarke in Hook. f. Fl. Brit. India 3 : 602. 1882 ; Collett, Fl. Siml. 307. 1902 ; Parker, For. Fl. Punj. ed. 3. 316. 1956 ; Nair, Fl. Bash. Himal. 178. 1977.

Scandent, climbing shrubs. Cymes dense, puberulous. Flowers white sometimes tinged with pink.

Fl. & Fr. : April - November.

Chamba (DD), Kangra (DD), Mandi (LWG), Simla (RRL).

Temperate Himalaya - Kashmir to Bhutan.

Jasminum grandiflorum L. Sp. Pl. ed. 2. 9. 1762 ; Clarke in Hook. f. Fl. Brit. India 3 : 603. 1882 ; Collett, Fl. Siml. 307. 1902 ; Parker, For. Fl. Punj. ed. 3. 316. 1956 ; Nair, Fl. Bash. Himal. 179. 1977.

Glabrous, climbing shrubs with subpendent, angular branches. Flowers white often tinged with purple outside.

Fl. & Fr. : May - October.

Chamba (DD, LWG), Kinnaur (BSD), Kangra (DD), Kulu (LWG).

Sub tropical North Western Himalaya. Cultivated.

Jasminum humile L. Sp. Pl. 7. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 602. 1882 ; Collett, Fl. Siml. 307. 1902 ; Parker, For. Fl. Punj. ed. 3. 317. 1956 ; Nair, Fl. Bash. Himal. 179. 1977.

Erect, stout, glabrous or puberulous shrubs. Flowers yellow.

Fl. & Fr. : May - September.

Chamba (BSD, CDRI, DD), Kangra (LWG), Kinnaur (BSD, DD), Kulu (LWG), Lahul and Spiti (BSD, DD), Mandi (LWG), Simla (BSD, DD, LWG), Solan (BSIP).

Sub tropical Himalaya Kashmir to Nepal.

Jasminum officinale L. Sp. Pl. 7. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 603. 1882 ; Collett, Fl. Siml. 307. 1902 ; Parker, For. Fl. Punj. ed. 3. 316. 1956 ; Nair, Fl. Bash. Himal. 179. 1977.

Climbing shrubs with long, weak branches. Cymes generally leafy. Flowers numerous, crowded, white.

Fl. & Fr. : April - September.

Chamba (BSD, DD, RRL), Kangra (RRL), Kinnaur (BSD, DD, RRL), Kulu (BSD, DD), Simla (BSD, DD).

Himalaya cultivated.

Jasminum parkeri Dunn in Kew Bull. 1920 : 69. 1920 ; Parker, For. Fl. Punj. ed. 3. 318. 1956.

Dwarf, procumbent shrubs with striate, scabrid, minute hairy twigs. Flowers generally axillary, yellow.

Fl. & Fr. : May - September.

Chamba (DD).

Himachal Pradesh.

Jasminum multiflorum (Burm. f.) Andrews Bot. Repos. 8 : t. 496. 1807. *Nyctanthes multiflora* Burm. f. Fl. Ind. 5. t. 3. f. 1. 1768. *Jasminum*

pubescens (Retz). Willd. Sp. Pl. 1 : 37. 1797 ; Clarke in Hook. f. Fl. Brit. India 3 : 592. 1882 ; Parker, For. Fl. Punj. ed. 3. 315. 1956. *Nyctanthes pubescens* Retz. Obs. 5 : 9. 1788.

Scandent, densely villous shrubs. Calyx with yellow hairs. Flowers white.

Fl. & Fr. : November April.

Bilaspur (DD), Chamba (CDRI, DD), Kangra (LWG), Kinnaur (DD), Kulu (LWG), Mandi (LWG), Simla (BSD), Sirmur (BSD).

Throughout India.

Ligustrum compactum (Wall. ex DC.) Hook. f. & Thoms. ex Brandis, For. Fl. Ind. 310. 1874 ; Clarke in Hook. f. Fl. Brit. India 3 : 616. 1882 ; Collett, Fl. Siml. 310. 1902 ; Parker, For. Fl. Punj. ed. 3. 322. 1956 ; Nair Fl. Bash. Himal. 179. 1977. *Olea compacta* Wall. ex DC. Prodr. 8 : 287. 1844.

Glabrous shrubs or small trees. Flowers small, white, in terminal panicles.

Fl. & Fr. : May January.

Kinnaur (DD), Kulu (BSD, DD), Simla (DD).

Temperate Himalaya, Himachal Pradesh to Bhutan.

Ligustrum indicum (Lour.) Merr. in Trans. Amer. Philos. Soc. n. Ser. 24 (2) : 307. 1935. *Phillyrea indica* Loureiro, Fl. Cochinch. 1 : 19. 1790. *Ligustrum nepalense* Wall. in Roxb. Fl. Ind. ed. Carey, 1 : 151. 1820 ; Clarke in Hook. f. Fl. Brit. India 3 : 617. 1882 ; Parker, For. Fl. Punj. ed. 3. 322. 1956.

Small trees with lenticellate branches. Flowers clustered, sessile in large, pubescent panicles.

Fl. & Fr. : May September.

Kulu (LWG).

Temperate Himalaya, Himachal Pradesh to Nepal.

Ligustrum lucidum Ait. f. Hort. Kew ed. 2. 1 : 19. 1810 ; Parker, For. Fl. Punj. ed. 3. 322. 1956 ; Nair, Fl. Bash. Himal. 180. 1977.

Large shrub with smooth, grey bark. Leaves shining, coriaceous. Flowers white.

Cultivated.

Fl. & Fr. : July November.

Simla (DD).

Western Himalaya upto Nepal.

***Linociera intermedia* Wight var. *roxburghii* Clarke** in Hook. f. *Fl. Brit. India* 3 : 609. 1882 ; Parker, *For. Fl. Punj.* ed. 3. 320. 1956.

Large shrubs or small trees. Flowers white, in axillary, trichotomous panicles.

Fl. & Fr. : April August.

Kangra (DD).

North Western Hmaialaya.

***Nyctanthes arbor tristis* L. Sp. Pl. 6. 1753 ; Clarke** in Hook. f. *Fl. Brit. India* 3 : 603. 1882 ; Collett, *Fl. Siml.* 308. 1902 ; Parker, *For. Fl. Punj.* ed. 3. 318. 1956 ; Nair, *Fl. Bash. Himal.* 180. 1977.

Small trees. Flowers sweet scented, white. Corolla tube yellow.

Fl. & Fr. : July October.

Chamba (RRL), Kangra (DD).

Cultivated throughout India.

***Olea ferruginea* Royle, Ill. Bot. Himal. Mount. 267. t. 65. f. 1. 1835.**
***Olea cuspidata* Wall. ex G. Don, Gen. Syst. 4 : 49. 1837 ; DC. Prodr. 8 : 285. 1844 ; Clarke** in Hook. f. *Fl. Brit. India* 3 : 611. 1882 ; Collett, *Fl. Siml.* 309. 1902 ; Parker, *For. Fl. Punj.* ed. 3. 320. 1956 ; Nair, *Fl. Bash. Himal.* 180. 1977.

Glabrous trees. Leaves coriaceous. Flowers white in numerous, short, axillary panicles. Drupe black.

Fl. & Fr. : May September.

Chamba (CDRI, DD), Kinnaur (BSD, DD), Kulu (DD), Mandi (LWG), Simla (LWG).

North Western Himalaya and Nepal.

***Olea glandulifera* Wall. ex G. Don, Gen. Syst. 4 : 49. 1837 ; DC. Prodr. 8 : 285. 1844 ; Clarke** in Hook. f. *Fl. Brit. India* 3 : 612. 1882 ;

Collett, Fl. Siml. 309. 1902 ; Parker, For. Fl. Punj. ed. 3. 321. 1956 ;
Nair, Fl. Bash. Himal. 180. 1977.

Small, glabrous trees. Flowers white in terminal or lateral panicles.

Fl. & Fr. : April August.

Kangra (DD), Simla (DD), Sirmur (BSD, BSIP, RRL).

Himalaya Kashmir to Nepal.

Syringa emodi Wall. ex Royle, Ill. Bot. Himal. Mount. 267, t. 65. f. 2. 1835 ; Clarke in Hook. f. Fl. Brit. India 3 : 604. 1882 ; Collett, Fl. Siml. 308. 1902 ; Parker, For. Fl. Punj. ed. 3. 319. 1956 ; Nair, Fl. Bash. Himal. 180. 1977.

Large shrubs. Leaves whitened beneath. Flowers purple white, in terminal panicles.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Mandi (BSIP).

Subalpine Himalaya - Kashmir to Nepal.

Syringa persica L. Sp. Pl. 9. 1753 ; Clarke in Hook. f. Fl. Brit. India 3 : 604. 1882.

Glabrous shrubs. Flowers lilac white.

Fl. & Fr. : July October.

Simla (BSIP).

Cultivated throughout India.

Syringa vulgaris L. Sp. Pl. 9. 1753 ; Parker, For. Fl. Punj. ed. 3. 319. 1956.

Cultivated in the gardens.

Fl. & Fr. : June - September.

Chamba (DD).

Cultivated.

APOCYNACEAE

H. J. CHOWDHRY

Carissa carandas L. Mant. Pl. 1 : 52. 1767 ; Hook. f. Fl. Brit. India 3 : 630. 1882 ; Collett, Fl. Siml. 311. 1902 ; Parker, For. Fl. Punj. ed. 3. 327. 1956.

Erect, spinous shrubs with forking, rigid branched spines. Leaves leathery, inflorescence pubescent, flower white. Fruit ovoid, berry red to blackish when ripe.

Fl. & Fr. : September April.

Simla (DD).

Throughout India.

Carissa diffusa Roxb. Fl. Ind. 1 : 689. 1820.

Suberect shrubs. Leaves finely puberulous beneath. Spines short, slender. Berry small.

Fl. & Fr. : May November.

Simla (DD).

Throughout the drier parts of India.

Carissa opaca Stapf. ex Haines in Indian Forester 47 : 378. 1921 ; Parker, For. Fl. Punj. ed. 3. 326. 1956. *C. spinarum* (auct non L.) Hook. f. Fl. Brit. India 3 : 631. 1882.

Suberect, densely branched shrubs. Leaves finely puberulous beneath.

Fl. & Fr. : April September.

Kangra (BSD, RRL), Una (BSD), Mandi (BSIP).

Drier parts of India.

Catharanthus pusillus (Murr.) G. Don, Gen. Syst. 4 : 95. 1837 ; Nair, Fl. Bash. Himal. 181. 1977. *Vinca pusilla* Murr. in Comm. Gonthing. 3 : 66. t. 2. f. 1. 1773 ; Hook. f. Fl. Brit. India 3 : 640. 1882.

Erect, branched, pale - green herbs. Flowers white, mouth narrow, hairy.

Fl. & Fr. : April November.

Kinnaur (BSD), Simla (BSD, DD, LWG).

Western Himalaya.

Holarrhena pubescens (Buch. Ham.) Wall. ex G. Don, Gen. Syst. 4 : 78. 1837. *Echites pubescens* Buch. Ham. in Trans. Linn. Soc. Bot. 13 : 521. 1821. *Holarrhena antidysenterica* Wall. ex DC. Prodr. 8 : 413. 1844 ; Hook. f. Fl. Brit. India 3 : 644. 1882 ; Collett, Fl. Siml. 311. 1902 ; Parker, For. Fl. Punj. ed. 3. 328. 1956.

Small, deciduous trees. Flowers white, in terminal corymbose cymes. Seeds crowned with a tuft of long, silky hairs.

Fl. & Fr. : June - February.

Chamba (DD), Kangra (DD), Mandi (BSIP).

Throughout India.

Ichnocarpus frutescens (L.) R. Br. in Mem. Wern. Nat. Hist. Soc. 1 : 62. 1811 ; Hook. f. Fl. Brit. India 3 : 669. 1882 ; Parker, For. Fl. Punj. ed. 3. 332. 1956. *Apocynum frutescens* L. Sp. Pl. 213. 1753.

Climbing shrubs. Cymes pubescent. Flowers purplish. Corolla tube glabrous, mouth villous.

Fl. & Fr. : July - November.

Chamba (RRL), Kangra (DD), Kulu (DD), Simla (BSIP).

Western Himalaya upto Nepal.

Nerium indicum Mill. Gard. Dict. ed. 8, no. 2. 1768. *N. odorum* Soland. in Aiton, Hort. Kew 1 : 297. 1789 ; Hook. f. Fl. Brit. India 3 : 655. 1882 ; Parker, For. Fl. Punj. 3. ed. 331. 1956.

Erect, glabrous shrubs with milky juice. Leaves narrowly lanceolate. Flowers red or pink, fragrant.

Fl. & Fr. : April - November.

Kangra (DD, RRL), Kulu (DD), Mandi (DD), Simla (DD).

Central and Northern India.

Rauwolfia serpentina (L.) Benth. in Benth. & Hook. f. Gen. Pl. 2 : 697. 1876 ; Hook. f. Fl. Brit. India 3 : 632. 1882 ; Parker, For. Fl. Punj. ed. 3. 327. 1956. *Ophioxylon serpentinum* L. Sp. Pl. 1043. 1753.

Erect, glabrous herbs or undershrubs. Leaves whorled. Flowers white or pinkish in corymbose cymes. Drupes purplish - black.

Fl. & Fr. : May - September.

Sirmur (BSD).

Tropical Himalaya.

Tabernaemontana divaricata (L.) R. Br. ex Roem. & Schult. Syst. Veg. 4 : 427. 1819. *Nerium divaricatum* L. Sp. Pl. 209. 1753. *Tabernaemontana coronaria* R. Br. sensu Hook. f. Fl. Brit. India 3 : 646. 1882.

Dichotomously branched, glabrous shrubs. Flowers white, fragrant.

Fl. & Fr. : July - October.

Kangra (DD).

Cultivated throughout India.

Thevetia peruviana (Pers.) K. Schum. in Engl. & Prantl, Pflanzenfam. 4 : 159. 1895 ; Nair, Fl. Bash. Himal. 181. 1977. *Cerbera peruviana* Pers. Syn. 1 : 267. 1805. *Thevetia nerifolia* Juss. ex Steud. Nom. ed. 2. 2 : 680. 1841 ; Parker, For. Fl. Punj. ed. 3. 326. 1956.

Large, evergreen shrubs with milky latex and linear lanceolate leaves. Flowers yellow. Drupes angular.

Fl. & Fr. : July - September.

Simla (DD).

Throughout India.

Trachelospermum lucidum (D. Don) K. Sch. in Engl. & Prantl, Pflanzenfam. 4 : 173. 1895 ; Nair, Fl. Bash. Himal. 181. 1977. *Alstonia lucida* D. Don, Prodr. Fl. Nep. 131. 1825. *Trachelospermum fragrans* (Wall. ex G. Don) Hook. f. Fl. Brit. India 3 : 667. 1882 ; Collett, Fl. Siml. 313. 1902 ; Parker, For. Fl. Punj. ed. 3. 332. 1956.

Climbing, glabrous shrubs with pendulous branches. Flowers white, fragrant.

Fl. & Fr. : May - September.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Mandi (LWG), Simla (DD).

Temperate and subtropical Himalaya.

Vallisneria spiralis (L.) Roth, O. Kuntze, Rev. Gen. Pl. 417. 1891. *Peltanthera solanacea* Roth, Nov. Sp. Pl. 132. 1821. *Vallisneria heynei* Spreng. Syst. Veg. 1 : 635. 1825 ; Hook. f. Fl. Brit. India 3 : 650. 1882 ; Collett, Fl. Siml. 311. 1902 ; Parker, For. Fl. Punj. ed. 3. 331. 1956 ; Nair, Fl. Bash. Himal. 182. 1977.

Climbing shrubs with pubescent inflorescence. Flowers white, fragrant, in drooping cymes.

Fl. & Fr. : January - May.

Kangra (DD, RRL), Mandi (BSIP, LWG), Sirmur (BSD), Una (BSD).

Tropical Himalaya,

Vinca major L. Sp. Pl. 209. 1753 ; Nair, Fl. Bash. Himal. 182. 1977.

Trailing, small, evergreen shrubs. Flowers blue.

Fl. & Fr. : May - July.

Simla (DD).

North Western Himalaya.

Wrightia arborea (Dennst.) Mabberly in Taxon 26 : 533 1977.
Periploca arborea Dennst. Schluss. H. Malabar. 13, 23 & 25. 1818.
Wrightia tomentosa Roem. & Schult. Syst. Veg. 4 : 414. 1819 ; Hook. f. Fl. Brit. India 3 : 653. 1882 ; Parker, For. Fl. Punj. ed. 3. 330. 1956.
Nerium tomentosum (Roem. & Schult.) Roxb. Fl. Ind. ed. Carey, 2 : 6. 1824.

Densely tomentose, deciduous trees. Leaves tomentose on both sides. Flowers yellowish orange.

Fl. & Fr. : January - March.

Kangra (DD), Sirmur (BSD).

Tropical parts of India.

ASCLEPIADACEAE

H. J. CHOWDHERY

Asclepias curassavica L. Sp. Pl. 215. 1753 ; Hook. f. Fl. Brit. India 4 : 18. 1883 ; Parker, For. Fl. Punj. ed. 3. 353. 1956 ; Nair, Fl. Bash. Himal. 182. 1977.

Undershrubs. Leaves opposite, lanceolate. Corolla orange - red.

Fl. & Fr. : April - October.

Chamba (RRL), Kangra (BSD, RRL).

Throughout India.

Calotropis gigantea (L.) R. Br. in Ait. Hort. Kew. ed. 2. 2 : 78. 1811 ; Hook. f. Fl. Brit. India 4 : 17. 1883 ; Collett, Fl. Siml. 316. 1902 ; Parker, For. Fl. Punj. ed. 3. 341. 1956. *Asclepias gigantea* L. Sp. Pl. 214. 1753.

Sub arboreous tree or shrubs with woolly shoots. Follicles recurved.

Fl. & Fr. : November - July.

Mandi (BSIP), Sirmur (LWG).

Troughout India.

Calotropis procera (Willd.) R. Br. in Ait. Hort. Kew. ed. 2. 2 : 78. 1811 ; Hook. f. Fl. Brit. India 4 : 18. 1883 ; Collett, Fl. Siml. 315. 1902 ; Parker, For. Fl. Punj. ed. 3. 340. 1956. *Asclepias procera* Willd. Sp. Pl. I : 1263. 1798.

Erect, white downy shrubs with milky latex. Flowers pink, spotted with purple. Follicles thick, wrinkled, covered with white woolly, pubescence.

Fl. & Fr. : February - May.

Simla (DD).

Throughout India.

Ceropegia longifolia Wall. Pl. Asiat. Rar. 1 : 56 t. 73. 1830 ; Hook. f. Fl. Brit. India 4 : 69. 1883. *Ceropegia angustifolia* Wight, Contrib. Bot. Ind. 31. 1834. *Ceropegia lanceolata* Wight, Contrib. Bot. Ind. 31. 1834.

Twining herbs with a line of pubescence on the stem. Flowers green spotted, dark purple with curved tube, corolla lobes ovate, ciliate.

Fl. & Fr. : June - September.

Simla (DD).

Himalaya, Himachal Pradesh to Sikkim.

Ceropegia macrantha Wight, Contrib. Bot. Ind. 31. 1834 ; Hook. f. Fl. Brit. India 4 : 74. 1883.

Extensive, stout climbing herbs. Flowers pale - yellow.

Fl. & Fr. : June - August.

Kangra (BSD).

Tropical Himalaya, Kashmir to Bhutan.

Ceropegia wallichii Wight in Bot. Mag. nota under t. 3267. 1834 & Contrib. Bot. Ind. 32. 1834 ; Hook. f. Fl. Brit. India 4 : 67. 1883 ; Collett, Fl. Siml. 320. 1902 ; Nair, Fl. Bash. Himal. 182. 1977.

Erect, pubescent herbs. Flowers dark red purple.

Fl. & Fr. : June September.

Simla (DD).

Central and Western Himalaya.

Cryptolepis buchananii Roem. & Schult. Syst. Veg. 4 : 409. 1819 ; Hook. f. Fl. Brit. India 4 : 5. 1883 ; Collett, Fl. Siml. 315. 1902 ; Parker, For. Fl. Punj. ed. 3. 337. 1956 ; Nair, Fl. Bash. Himal. 182. 1977.

Glabrous, twining shrubs with milky latex. Flowers yellow green in axillary, paniculate cymes. Follicles smooth, straight tapering.

Fl. & Fr. : April November.

Chamba (DD), Kangra (BSD), Kinnaur (DD), Kulu (BSD), Mandi (LWG).

Throughout India.

Cynanchum auriculatum Royle ex Wight, Contrib. Bot. Ind. 58. 1834 ; Hook. f. Fl. Brit. India 4 : 25. 1883 ; Collett, Fl. Siml. 318. 1902 ; Parker, For. Fl. Punj. ed. 3. 345. 1956 ; Nair, Fl. Bash. Himal. 182. 1977.

Twining, glabrous shrubs. Leaves glabrous. Flowers yellow - green. Corona much shorter than the corolla, 5 lobed.

Fl. & Fr. : June October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (BSD, DD).

Temperate Himalaya Kashmir to Sikkim.

Cynanchum dalhousiae Wight, Contrib. Bot. Ind. 55. 1834 ; Hook. f. Fl. Brit. India 4 : 25. 1883 ; Collett, Fl. Siml. 317. 1902 ; Parker, For. Fl. Punj. ed. 3. 344. 1956 ; Nair, Fl. Bash. Himal. 183. 1977.

Twining, glabrous shrubs. Leaves pubescent. Flowers pale green. Corona as long as the corolla, toothed.

Fl. & Fr. : June - September.

Chamba (DD), Kinnaur (BSD).

Western temperate Himalaya upto Nepal.

Cynanchum roylei Wight, Contrib. Bot. Ind. 58. 1834 ; Hook. f. Fl. Brit. India 4 : 25. 1883 ; Parker, For. Fl. Punj. ed. 3. 346. 1956 ; Nair, Fl. Bash. Himal. 183. 1977.

Suberect herbs. Leaves deltoid, pubescent on both sides. Flowers greenish - white, hairy within.

Fl. & Fr. : May - September.

Kinnaur (BSD, DD), Simla (DD).

Western Tibet, Himachal Pradesh.

Heterostemma alatum Wight, Contrib. Bot. Ind. 42. 1834 ; Hook. f. Fl. Brit. India 4 : 47. 1883.

Twining shrubs with branches having 2 - lines of hairs. Leaves coriaceous, ovate or lanceolate. Flowers yellow. Follicles very slender, straight.

Fl. & Fr. : April - August.

Kulu (DD).

Himalaya, Himachal Pradesh to Sikkim.

Holostemma ada-kodien J. A. Schultes, Sys. Veg. 6 : 95. 1820. *Holostemma annularis* (Roxb.) K. Schum. in Engl. & Prantl, Pflanzenf. (4) 2 : 250. f. 71 I - K. 1896. *Asclepias annularis* Roxb. Fl. Ind. ed. Carey, 2 : 37. 1832. *Holostemma rheedei* Wall. Pl. Asi. Rar. ed. 2 : 51. 1831. Hook. f. Fl. Brit. India 4 : 21. 1883 ; Collett, Fl. Siml. 316. 1902. *H. rheedianum* Spreng. Syst. Veg. 1 : 851. 1825 ; Parker, For. Fl. Punj. ed. 3. 342. 1956.

Glabrous, twining shrubs with milky latex. Flowers purple, outer surface silvery - white.

Fl. & Fr. : July - September.

Simla (DD).

Tropical Himalaya.

Hoya longifolia Wall. ex Wight, Contrib. Bot. Ind. 36. 1834 ; Hook. f. Fl. Brit. India 4 : 56. 1883 ; Collett, Fl. Siml. 320. 1902 ; Parker, For. Fl. Punj. ed. 3. 350. 1956 ; Nair, Fl. Bash. Himal. 114. 1977.

Glabrous shrubs with stem rooting and climbing over trees etc. Flowers waxy white, fleshy.

Fl. & Fr. : June August.

Simla (DD).

Tropical Himalaya, Himachal Pradesh to Assam.

Marsdenia lucida Edgew. ex Madden in Journ. Asiat. Soc. Bengal 17 (1) : 370. 1848 ; Hook. f. Fl. Brit. India 4 : 36. 1883 ; Parker, For. Fl. Punj. ed. 3. 347. 1956.

Evergreen twining shrubs. Flowers purple, fragrant. Seeds ovate-lanceolate, narrowly winged.

Fl. & Fr. : June November.

Chamba (DD).

Himalaya, Himachal Pradesh to Bhutan.

Marsdenia roylei Wight, Contrib. Bot. Ind. 40. 1834 ; Hook. f. Fl. Brit. India 4 : 35. 1883 ; Collett, Fl. Siml. 320. 1902 ; Parker, For. Fl. Punj. ed. 346. 1956 ; Nair, Fl. Bash. Himal. 184. 1977.

Softly tomentose, twining herbs with milky latex. Flowers orange in axillary, umbellate cymes. Follicles hairy, deeply wrinkled.

Fl. & Fr. : May October.

Chamba (DD), Kinnaur (DD), Mandi (LWG), Simla (BSD, DD).

Western Himalaya upto Sikkim.

Pergularia daemia (Forssk.) Chiov. Result. Sci. Miss. Stefan. Paoli Somal. Ital. 1 : 115. 1916. *Asclepias daemia* Forssk. Fl. Aegypt Arab. 51. 1775. *Cynanchum extensum* Jacqu. Misc. 2 : 353. 1782. *Daemia extensa* (Jacqu.) R. Br. in Mem. Wern. Soc. 1 : 50. 1818 ; Hook. f. Fl. Brit. India 4 : 20. 1883 ; Parker, For. Fl. Punj. ed. 3. 341. 1956.

Hairy, slender, twining shrubs. Flowers pale, yellow green, tinged with pink at the base.

Fl. & Fr. : April July.

Simla (DD).

Throughout India.

Periploca calophylla (Wight) Falconer in Proc. Linn. Soc. 1 : 115. 1841 ; Hook. f. Fl. Brit. India 4 : 12. 1883 ; Parker, For. Fl. Punj. ed. 3. 339. 1956 ; Nair, Fl. Bash. Himal. 184. 1977. *Streptaulon calophyllum* Wight, Contrib. Bot. Ind. 65. 1834.

Twining shrubs with coriaceous leaves. Flowers pinkish yellow.

Fl. & Fr. : April - November.

Chamba (DD), Kinnaur (DD).

Temperate and subtropical Himalaya.

Telosma pallida (Roxb.) Craib in Kew Bull. 1911 : 418. 1911. *Asclepias pallida* Roxb. Fl. Ind. ed. Carey, 2 : 48. 1832. *Pergularia pallida* (Roxb.) Wt. & Arn. in Wight, Contrib. Bot. Ind. 42. 1834 ; Hook. f. Fl. Brit. India 4 : 38. 1883.

Pubescent or nearly glabrous, twining shrubs. Flowers pale-yellowish.

Fl. & Fr. : June - September.

Kangra (LWG), Kinnaur (BSD).

Lower Himalaya.

Tylophora govani (Wall. ex Wight) Decne. in DC. Prodr. 8 : 610. 1844 ; Hook. f. Fl. Brit. India 4 : 40. 1883 ; Parker, For. Fl. Punj. ed. 3. 345. 1956. *Iphisia govani* Wight, Contrib. Bot. Ind. 52. 1834.

Herbs. Flowers purple. Pollen masses pendulous.

Fl. & Fr. : July - September.

Kinnaur (DD).

Western Himalaya.

Tylophora hirsuta (Wall.) Wight, Contrib. Bot. Ind. 49. 1834 ; Hook. f. Fl. Brit. India 4 : 43. 1883 ; Collett, Fl. Siml. 319. 1902 ; Parker, For. Fl. Punj. ed. 3. 345. 1956 ; Nair, Fl. Bash. Himal. 184. 1977. *Gymnema hirsutum* Wall. Tent. Fl. Nepal. 50. 1826.

Twining, softly tomentose or hairy herbs. Leaves hairy. Flowers white or pale - green.

Fl. & Fr. : June - November.

Chamba (DD), Kangra (DD), Kinnaur (DD), Simla (DD).

Tropical Himalaya, Himachal Pradesh to Sikkim.

Tylophora tenerrima Wight, Contrib. Bot. Ind. 50. 1834 ; Hook. f. Fl. Brit. India 4 : 44. 1883 ; Collett, Fl. Siml. 320. 1902 ; Parker, For. Fl. Punj. ed. 3. 346. 1956 ; Nair, Fl. Bash. Himal. 185. 1977.

Pubescent, slender herbs. Flowers dark purple.

Fl. & Fr. : June - August.

Simla (DD).

Subtropical Himalaya, Himachal Pradesh to Bhutan.

Vincetoxicum hirundinaria Medicus in Hist. Comm. Acad. Elect. Theod. Palat. Phys. 6 : 404. 1790. *Asclepias vincetoxicum* L. Sp. Pl. 216. 1753. *Cynanchum vincetoxicum* (L.) Pers. Syn. Pl. 1 : 274. 1805 ; Hook. f. Fl. Brit. India 4 : 22. 1883 ; Collett, Fl. Siml. 317. 1902 ; Parker, For. Fl. Punj. ed. 3. 345. 1956 ; Nair, Fl. Bash. Himal. 183. 1977.

Erect, pubescent herbs. Flowers yellow, glabrous.

Fl. & Fr. : May - October.

Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, RRL), Simla (DD).

Temperate Himalaya - Kashmir to Sikkim.

Vincetoxicum hirundinaria Medicus subsp. **glaucum** (Wall. ex Wight) Hara in Enum. Fl. Pl. Nep. 3 : 89. 1982. *Cynanchum glaucum* Wall. ex Wight, Contr. Bot. Ind. 58. 1834 ; Hook. f. Fl. Brit. India 4 : 22. 1883 ; Collett, Fl. Siml. 317. 1902 ; Nair, Fl. Bash. Himal. 183. 1977. *Cynanchum canescens* (auct non Schum.) Murata in J. Coll. Art. Sci. Chiba Uni. 5 : 89. 1967. *Vincetoxicum glaucum* (Wall. ex Wight) Rech. f. in Fl. Iran. Ascle. 13. 1970.

Erect, pubescent or hairy herbs. Leaves pale green. Flowers yellow, hairy on the inner surface.

Fl. & Fr. : May - October.

Kinnaur (BSD, DD), Simla (DD), Una (BSD).

Temperate Himalaya, Tibet.

LOGANIACEAE

H. J. CHOWDHERY

Buddleja asiatica Lour. Fl. Cochinch. 72. 1790 ; Clarke in Hook. f. Fl. Brit. India 4 : 82. 1883 ; Collett, Fl. Siml. 322. 1902 ; Nair, Fl. Bash. Himal. 185. 1977.

Shrubs with white or pale yellow tomentum. Flowers crowned in long - drooping spikes. Flowers white. Capsule glabrous.

Fl. & Fr. : April - October.

Chamba (DD), Kangra (RRL), Kinnaur (DD).

Throughout India.

Buddleja crispa Benth. Scroph. Ind. 43. 1835 ; Nair, Fl. Bash. Himal. 185. 1977. **Buddleja paniculata** Clarke in Hook. f. Fl. Brit. India 4 : 81. 1883 (non Wall.) ; Collett, Fl. Siml. 322. 1902 ; Parker, For. Fl. Punj. ed. 3. 352. 1956.

Small trees or shrubs with red - brown tomentum. Flower heads woolly. Corolla tube pink, throat orange, lobes lavender blue. Capsule tomentose.

Fl. & Fr. : March - May.

Chamba (BSIP, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (LWG), Mandi (LWG), Simla (DD, LWG).

Himalaya, Himachal Pradesh to Bhutan.

Buddleja lindleyana Fortune in Lindl. Bot. Reg. Misc. 25. 1844.

Erect herbs. Leaves thin, glabrescent above, minutely tomentose beneath. Flowers blue in terminal, long, drooping spikes, corolla tube curved.

Fl. & Fr. : August - October.

Simla (CDRI).

Himalaya.

GENTIANACEAE

H. J. CHOWDHERY

Canscora decussata (Roxb.) J. A. & J. H. Schultes, Syst. Veg. Mant. 3 : 229. 1827 ; Clarke in Hook. f. Fl. Brit. India 4 : 104. 1883 ; Collett, Fl. Siml. 323. 1902. *Pladera decussata* Roxb. Fl. Ind. ed. Carey, 1 : 418. 1820.

Erect herbs with angled, winged stem. Flowers irregular, white.

Fl. & Fr. : August September.

Simla (DD).

Throughout India.

Canscora diffusa (Vahl) R. Br. Prodr. Fl. Nov. Holl. 451. 1810 ; Clarke in Hook. f. Fl. Brit. India 4 : 103. 1883 ; Collett, Fl. Siml. 323. 1902. *Gentiana diffusa* Vahl, Symb. B. 3 : 47. 1794. *Exacum diffusum* (Vahl) Willd. Sp. Pl. 1 : 637. 1798.

Herbs with angled stem but not winged. Flowers pale pink.

Fl. & Fr. : August October.

Kangra (BSD).

Throughout India.

Enicostema hyssopifolium (Willd.) Verdoorn in Bothalia 7 : 462. 1961. *Exacum hyssopifolium* Willd. Sp. Pl. 1 : 637. 1798. *Enicostema littorale* Bl. Bijdr. 848. 1848 ; Clarke in Hook. f. Fl. Brit. India 4 : 101. 1883.

Glabrous herbs. Leaves sessile. Flowers small, bluish white. Capsule ellipsoid. Seeds reticulated.

Fl. & Fr. : July September.

Chamba (DD).

Throughout India.

Exacum tetragonum Roxb. Fl. Ind. ed. Carey, 1 : 413. 1820 ; Clarke in Hook. f. Fl. Brit. India 4 : 95. 1883 ; Collett, Fl. Siml. 323. 1902.

Erect herbs. Leaves opposite, stem clasping, broadly lanceolate. Flowers blue, in terminal panicles.

Fl. & Fr. : July - September.

Simla (DD).

Northern India, Himachal Pradesh to Bhutan.

Gentiana algida Pall. var. **nubigena** (Edgew.) Kusn. in Acta. Hort. Petrop. 15 : 266. 1898. *G. nubigena* Edgew. in Trans. Linn. Soc. Bot. 20 : 85. 1846 ; Clarke in Hook. f. Fl. Brit. India 4 : 116. 1883.

Herbs. Leaves linear - oblong. Flowers funnel shaped, shortly stalked.

Fl. & Fr. : July - September.

Lahul and Spiti (BSD, DD).

Alpine Himalaya, Kashmir to Sikkim.

Gentiana aprica Decne. in Jacquem. Voy. 4. (Bot.) : 112. t. 118. 1844 ; Collett, Fl. Siml. 324. 1902 ; Nair, Fl. Bash. Himal. 185. 1977. *G. decemfida* var. *aprica* (Decne.) Clarke in Hook. f. Fl. Brit. India 4 : 112. 1883.

Herbs. Leaves with ciliate pubescent margins. Flowers indigo - blue. Capsule ovoid.

Fl. & Fr. : May - August.

Chamba (DD), Hamirpur (DD), Kulu (RRL), Sirmur (BSD).

Himalaya, Kashmir to Nepal.

Gentiana aquatica L. Sp. Pl. 229. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 110. 1883.

Herbs. Cauline leaves obtuse, mucronate, narrow. Flowers blue.

Fl. & Fr. : June - September.

Lahul and Spiti (BSD).

Kashmir, Western Tibet and Himachal Pradesh.

Gentiana argentea (Royle ex D. Don) DC. Prodr. 9 : 107. 1845 ; Clarke in Hook. f. Fl. Brit. India 4 : 112. 1883 ; Collett, Fl. Siml. 324. 1902 ; Nair, Fl. Bash. Himal. 185. 1977. *Ericala argentea* 'D. Don in London Edinb. Philos. Mag. J. Sci. 8 : 76. 1836.

Glabrous, leafy herbs. Leaves silvery shining, finely pointed, recurved. Flowers sessile, blue in terminal leafy heads. Capsule ovoid.

Fl. & Fr. : April August.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul & Spiti (DD), Simla (DD).

Western Himalaya upto Nepal.

Gentiana borealis Bunge in Nouv. Mem. Sci. Nat. 7 : 151. t. 20. f. 2. 1829 ; Clarke in Hook. f. Fl. Brit. India 4 : 109. 1883.

Erect herbs. Leaves oblong. Flowers pink - purple. Capsule narrowly oblong.

Fl. & Fr. : May July.

Chamba (DD).

Western Tibet and Himachal Pradesh.

Gentiana cachemirica Decne. in Jacquem. Voy. 4. (Bot.) : 111. t. 117. 1844 ; Clarke in Hook. f. Fl. Brit. India 4 : 115. 1883. *G. loderi* Hook. f. Icones 15 : 1440. A. 1883 ; Hook. f. Fl. Brit. India 4 : 733. 1883.

Glabrous, leafy, prostrate herbs. Leaves subsessile, broadly elliptic, obtuse, 3 - nerved. Flowers purplish green or blue, solitary, sessile.

Fl. & Fr. : April August.

Kinnaur (DD), Simla (DD).

Western Himalaya.

Gentiana capitata Buch. Ham. ex D. Don, Prodr. Fl. Nepi. 126. 1825 ; Clarke in Hook. f. Fl. Brit. India 4 : 113. 1883 ; Collett, Fl. Siml. 325. 1902.

Erect herbs. Leaves crowded, close under the flowers. Flowers sessile, blue or white. Capsule globose.

Fl. & Fr. : May - August.

Chamba (DD).

Temperate Himalaya, Himachal Pradesh to Bhutan.

Gentiana carinata (D. Don) Griseb. Gen. Sp. Gentian, 304, 1838 ; DC. Prodr. 9 : 109, 1845 ; Clarke in Hook. f. Fl. Brit. India 4 : 113, 1883 ; Nair, Fl. Bash. Himal. 186, 1977. *Ericala carinata* D. Don in London Edinb. Philos. Mag. J. Sci, 8 : 76, 1876. *Eurythalia carinata* D. Don in Trans. Linn. Soc. 17 : 516, 1837.

Small herbs. Leaves very acute. Flowers clustered, violet. Capsule ellipsoid, compressed.

Fl. & Fr. : May September.

Chamba (DD), Kangra (BSD, DD), Kinnaur (DD), Kulu (DD, RRL), Lahul and Spiti (BSD, DD), Simla (DD).

North Western Himalaya upto Nepal.

Gentiana clarkei Kusnezow, Etud. Manog. Sous genere Eugentiana 276, 1894. *Gentiana pygmaea* Clarke in Hook. f. Fl. Brit. India 4 : 111, 1883.

Small herbs. Leaves minute, ovate - obovate. Flower single, blue.

Fl. & Fr. : June August.

Lahul and Spiti (DD).

Western Tibet and Himachal Pradesh.

Gentiana contorta Royle, Ill. Bot. Himal. Mount. 278, Pl. 69, f. 3, 1835 ; Clarke in Hook. f. Fl. Brit. India 4 : 118, 1883 ; Collett, Fl. Siml. 325, 1902.

Erect herbs. Leaves ovate. Flowers blue. Capsule oblong.

Fl. & Fr. : May August.

Simla (DD).

North Western Himalaya.

Gentiana coronata (D. Don ex Royle) DC. Prodr. 9 : 109, 1845 ; Clarke in Hook. f. Fl. Brit. India 4 : 114, 1883. *Eurythalia coronata* D. Don in Royle, Ill. Bot. Himal. Mount 278, 1835 et in Trans. Linn. Soc. 17 : 515, 1837.

Herbs with spreading branches. Leaves lanceolate, acute. Corolla wide, subcampanulate.

Fl. & Fr. : May July.

Simla (DD).

North Western Himalaya.

Gentiana decemfida Buch. Ham. in D. Don, Prodr. Fl. Nepal. 127, 1825 ; Clarke in Hook. f. Fl. Brit. India 4 : 112. 1883.

Erect herb with ascending branches. Cauline leaves cartilaginous, minutely ciliate pubescent on the margins.

Fl. & Fr. : April August.

Chamba (DD), Kinnaur (DD).

North - West and Central Himalaya.

Gentiana infelix Clarke in Journ. Linn. Soc. 14 : 435. 1875 ; Clarke in Hook. f. Fl. Brit. India 4 : 111. 1883 ; Nair, Fl. Bash. Himal. 186. 1977.

Very small herbs, leafless below, leafy above. Flowers violet, subsessile.

Fl. & Fr. : June August.

Kinnaur (BSD).

North Western Himalaya upto Sikkim.

Gentiana kurroo Royle, Ill. Bot. Himal. Mount. 278, t. 68, f. 2. 1835 ; Clarke in Hook. f. Fl. Brit. India 4 : 117. 1883 ; Collett, Fl. Siml. 325. 1902 ; Nair, Fl. Bash. Himal. 186. 1977.

Decumbent, tufted herbs with thick root stocks. Leaves narrowly oblong. Flowers blue, spotted with white. Capsule oblong.

Fl. & Fr. : July September.

Chamba (DD), Simla (DD).

North - Western Himalaya.

Gentiana leucomalaena Maxim. Diagn. Pl. Nov. Asiat. 8 : 33. 1893.

Tufted herbs. Flowers purplish blue.

Fl. & Fr. : June - August.

Lahul and Spiti (DD).

Western Himalaya upto Nepal.

Gentiana marginata (G. Don) Griseb. Gen. Sp. Gentian. 275. t. 1. f. 3. 1839. *Ericala marginata* G. Don, Gen. Syst. 4 : 192. 1837. *Gentiana carinata* Griseb. var. *marginata* Clarke in Hook. f. Fl. Brit. India 4 : 113. 1883.

Herbs with crowded leaves. Flowers clustered, corolla without fimbriae.

Fl. & Fr. : June September.

Lahul and Spiti (BSD).

Temperate Himalaya, Kashmir to Nepal.

Gentiana moorcroftiana Wall. ex G. Don, Gen. Syst. 4 : 182. 1837 ; Clarke in Hook. f. Fl. Brit. India 4 : 108. 1883. *Gentianella moorcroftiana* (Wall. ex G. Don) Airy Shaw in Hook. Icones 35. Sub. tab. 3431. p. 2 1943 (in adnot).

Erect herbs with ascending branches. Leaves oblong elliptic. Flowers blue. Capsule lanceolate.

Fl. & Fr. : June September.

Chamba (DD), Lahul and Spiti (BSD, DD), Simla (DD).

Western Himalaya.

Gentiana olivieri Griseb. Gen. Sp. Gent. 278. 1839. et in DC. Prodr. 9 : 110. 1845. *Gentiana dahurica* Clarke in Hook. f. Fl. Brit. India 4 : 117. 1883 (non Fisch.).

Herbs. Leaves oblong. Flowers terminal, clustered.

Fl. & Fr. : June September.

Lahul and Spiti (DD).

North -Western Himalaya.

Gentiana pedicellata (D. Don) Griseb. Gen. Sp. Gent. 273. 1839 ; Nair, Fl. Bash. Himal. 186. 1977. *Ericala pedicellata* D. Don in Philos. Mag. 76. 1836 et in Trans. Linn. Soc. Bot. 17 : 514. 1837. *Gentiana quadrifaria* (non Blume) in Hook. f. Fl. Brit. India 4 : 111. 1883 ; Collett, Fl. Siml. 324. 1902.

Erect herbs. Flowers white or blue. Capsule ellipsoid or ovoid.

Fl. & Fr. : April July.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD), Kulu (BSD, DD).

Himalaya, Kashmir to Bhutan.

Gentiana pedicellata (D. Don) Griseb. var. **wallichii** Kusn. in Acta Hort. Petrop. 15 : 397. 1896.

Herbs. Flowers blue.

Fl. & Fr. : May September.

Kinnaur (DD), Kulu (DD).

North - Western Himalaya upto Bhutan.

Gentiana prostrata Haenke in Jacq. Collect. 2 : 66. 1878. *G. prostrata* Haenke var. *affghanica* Kusn. in Acta. Hort. Petrop. 15 : 370. 1904.

Herbs, cauline leaves small with recurved margins. Flowers blue.

Fl. & Fr. : July September.

Lahul and Spiti (DD).

North Western Himalaya.

Gentiana squarrosa Ledeb. in Mem. Acad. Petersb. 5 : 520. 1815.

Herbs with numerous radical branches. Leaves small, obovate, recurved. Capsule short, obovoid, compressed.

Fl. & Fr. : April June.

Simla (DD).

Alpine Himalaya and Tibet.

Gentiana stipitata Edgew. in Trans. Linn. Soc. 20 : 84. 1846 ; Nair, Fl. Bash. Himal. 187. 1977. *G. cachemirica* Clarke in Hook. f. Fl Brit. India 4 : 115. 1883 *p.p.* (non Decne.).

Small herbs with many basal branches. Flowers light purple with dark bands on the back.

Fl. & Fr. : July October.

Kinnaur (BSD, DD).

North Western Himalaya and Nepal.

Gentiana stracheyi (Clarke) Kita. Fl. W. Pak. 117. 1964. *Gentiana dentosa* Clarke var. *stracheyi* Clarke in Hook. f. Fl. Brit. India 4 : 118 1883.

Erect, branched herbs. Leaves broad.

Fl. & Fr. : June August.

Lahul and Spiti (DD).

North Kashmir, Western Tibet and Himachal Pradesh.

Gentiana stricta Klotzsch, Bot. Ergeb. Pr. Waldem. Preuss. 90. t. 67. 1862. *Gentiana detonsa* Clarke in Hook. f. Fl. Brit. India 4 : 118. 1883.

Erect, much branched herbs. Leaves linear oblong.

Fl. & Fr. : June August.

Lahul and Spiti (BSD, DD).

North Kashmir, Western Tibet and Himachal Pradesh.

Gentiana tianshanica Rupr. ex Kuhn. in Mem. Acad. Sci. Petersb. Ser. 7. 19 (4) : 61. 1869. *Gentiana decumbens* Clarke in Hook. f. Fl. Brit. India 4 : 117. 1883 (non L. f.).

Herbs with stout root stock. Leaves oblong. Flowers terminal, clustered.

Fl. & Fr. : July - September.

Kinnaur (BSD), Lahul and Spiti (BSD, DD).

Western Tibet and Himachal Pradesh.

Gentiana tubiflora (G. Don) Griseb. Gen. Sp. Gent. 277. 1838 ; Clarke in Hook. f. Fl. Brit. India 4 : 116. 1883. *Ericala tubiflora* G. Don, Gen. Syst. 4 : 189. 1837.

Small herbs without stem. Leaves imbricate, ovate or elliptic, acute. Flowers tubular.

Fl. & Fr. : July September.

Lahul and Spiti (DD).

Alpine Himalaya, Himachal Pradesh upto Bhutan.

Gentiana venusta (G. Don) Griseb. Gen. Sp. Gent. 276. 1838 ; Clarke in Hook. f. Fl. Brit. India 4 : 116. 1883 ; Nair, Fl. Bash. Himal. 187. 1977. *Ericala venusta* G. Don, Gen. Syst. 4 : 189. 1837.

Herbs without stem. Flowers on densely leafy shoots, blue.

Fl. & Fr. : August - October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (DD).

Alpine Western Himalaya upto Nepal.

Gentianella pedunculata (D. Don) H. Sm. in Grana Palyn. 7 : 144. 1967. *Eurythalia pedunculata* D. Don in London Edinb. Philos. Mag. J. Sci. 8 : 76. 1836. *Gentianella tenella* (Rottb.) H. Sm. in Uppsala Univ. Arsskr. Nr. 7 : 259. 1945 ; Nair, Fl. Bash. Himal. 187. 1977. *Gentiana tenella* Rottb. in Kiob. Skr. Selsk. 10 : 436. 1770 ; Clarke in Hook. f. Fl. Brit. India 4 : 109. 1883.

Erect, branched herbs. Lower leaves spatulate. Flowers purple blue. Capsule oblong linear, sessile.

Fl. & Fr. : August - October.

Kinnaur (DD), Lahul and Spiti (DD).

Himalaya, Kashmir upto Bhutan.

Halenia elliptica D. Don in Trans. Linn. Soc. Bot. 17 : 529. 1837 ; Clarke in Hook. f. Fl. Brit. India 4 : 130. 1883 ; Collett, Fl. Siml. 328. 1902 ; Nair, Fl. Bash. Himal. 187. 1977.

Erect, glabrous herbs. Stem 4 angled, narrowly winged. Leaves opposite, sessile, ovate, obtuse. Flowers pale blue, corolla bell shaped. Capsule ovoid.

Fl. & Fr. : July - October.

Chamba (BSD), Kinnaur (BSD DD), Kulu (BSD, DD), Simla (BSD).

Temperate Himalaya, Himachal Pradesh upto Bhutan.

Hoppea dichotoma Willd. in Ges. Naturf. Fr. Berl. Neue. Schr. 3 : 435. 1801 ; Clarke in Hook. f. Fl. Brit. India 4 : 100. 1883.

Branched, glabrous herb with 4 angled, stem. Leaves ovate. Flowers white.

Fl. & Fr. : April July.

Chamba (DD).

Throughout India.

Jaeschkea oligosperma (Griseb.) Knobloch in Bot. Centralbl. 60 : 387. 1894. *Gentiana oligosperma* Griseb. in DC. Prodr. 9 : 94. 1845. *Jaeschkea gentianoides* S. Kurz. Jour. Asia. Soc. Beng. 39 (2) : 230. 1870 ; Clarke in Hook. f. Fl. Brit. India 4 : 119. 1883.

Erect herbs. Leaves opposite, sessile.

Fl. & Fr. : July September.

Chamba (DD), Lahul and Spiti (DD).

North Western Himalaya.

Jaeschkea canaliculata (Royle ex G. Don) Knobloch in Bot. Centralbl. 60 : 387. 1894. *Gentiana canaliculata* Royle ex G. Don, Gen. Syst. 4 : 182. 1837. *Jaeschkea latisepala* Clarke in Hook. f. Fl. Brit. India 4 : 119. 1883.

Erect herbs. Leaves oblong, acuminate. Sepals unequal, ovate. Capsule sessile.

Fl. & Fr. : July September.

Chamba (DD).

Western Himalaya and Tibet.

Lomatogonium carinthiacum (Wulf.) Reichenb. Fl. Germ. Excurs. 421. 1831. *Swertia carinthiacum* Wulf. in Jacquem. Misc. 2 : 53, t. 6. 1781. *Pleurogyne carinthiaca* (Wulf.) Griseb. Gen. Sp. Genti. 310. 1838 ; Clarke in Hook. f. Fl. Brit. India 4 : 120. 1883.

Decumbent herbs. Flowers blue with green nerves. Capsule oblong, acute, sessile.

Fl. & Fr. : August October.

Chamba (DD), Kinnaur (DD).

Western Himalaya upto Nepal.

Swertia alata (D. Don) Clarke in Hook. f. Fl. Brit. India 4 : 125. 1883 ; Collett, Fl. Siml. 327. 1902 ; Nair, Fl. Bash. Himal. 188. 1977. *Agathotes alata* D. Don in Trans. Linn. Soc. 17 : 523. 1837.

Erect herbs with 4 angled, winged stems. Leaves ovate. Flowers green yellow, dotted and veined with purple.

Fl. & Fr. : August October.

Chamba (DD), Kinnaur (DD), Kulu (BSD), Simla (DD).

Temperate Western Himalaya upto Nepal.

Swertia alternifolia Royle, Ill. Bot. Himal. Mount. 278. t. 67. f. 2. 1835 ; Clarke in Hook. f. Fl. Brit. India 4 : 128. 1883 ; Collett, Fl. Siml. 326. 1902.

Herbs. Leaves alternate, cauline elliptic lanceolate. Flowers lurid blue.

Fl. & Fr. : July September.

Kinnaur (DD), Kulu (BSD), Lahul and Spiti (BSD, DD).

Western Himalaya and Nepal.

Swertia angustifolia Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 127. 1825 ; Clarke in Hook. f. Fl. Brit. India 4 : 125. 1883 ; Collett, Fl. Siml. 327. 1902 ; Nair, Fl. Bash. Himal. 188. 1977.

Herbs with narrowly winged stem. Leaves linear lanceolate, acute. Flowers white or pale blue, dark dotted.

Fl. & Fr. : August October.

Chamba (RRL), Kangra (RRL), Kulu (DD), Simla (DD).

Subtropical Himalaya, Kashmir to Bhutan.

Swertia chirayita (Roxb. ex Flem.) Karsten, Deuts. Fl. 1025. 1880 1883 ; Buch. Ham. ex Clarke in Hook. f. Fl. Brit. India 4 : 124. 1883 ; Collett, Fl. Siml. 327. 1902 ; Nair, Fl. Bash. Himal. 327. 1902. *Gentiana chirayita* Roxb. ex Flem. in Asiat. Res. 11 : 167. 1812.

Robust, terete, branched herbs. Leaves broadly lanceolate. Flowers green yellow, tinged with purple.

Fl. & Fr. : August October.

Simla (DD, RRL).

Temperate Himalaya, Kashmir to Bhutan.

Swertia ciliata (G. Don) Burt in Notes Roy. Bot. Gard. Edinb. 26 : 272. 1965 ; Nair, Fl. Bash. Himal. 188. 1977. *Ophelia ciliata* G. Don, Gen. Syst. 4 : 178. 1837. *S. purpurascens* (D. Don) Clarke in Hook. f. Fl. Brit. India 4 : 121. 1883 ; Collett, Fl. Siml. 326. 1902.

Erect herbs with purplish stem. Leaves lanceolate. Flowers purple - white or pale red, purple.

Fl. & Fr. : August - November.

Chamba (BSD, DD, RRL), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (CDRI, DD), Simla (DD).

Temperate North Western Himalaya upto Sikkim.

Swertia coerulea Royle, Ill. Bot. Himal. Mount. 278. t. 67. f. 1. 1835 ; Clarke in Hook. f. Fl. Brit. India 4 : 129. 1883.

Erect herbs. Leaves oblong, sessile, lower spatulate. Flowers bluish with green nerves.

Fl. & Fr. : August - October.

Simla (DD).

Western Himalaya.

Swertia cordata (G. Don) Wall. ex Clarke in Hook. f. Fl. Brit. India 4 : 123. 1883 ; Collett, Fl. Siml. 326. 1902 ; Nair, Fl. Bash. Himal. 189. 1977. *Ophelia cordata* G. Don, Gen. Syst. 4 : 178. 1837.

Branched, erect herbs. Leaves with broadly pale purple streaks.

Fl. & Fr. : July - October.

Chamba (BSD, DD, RRL), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate Himalaya and Tibet.

Swertia cuneata D. Don in London Edinb. Philos. Mag. J. Sci. 8 : 77. 1836 ; Clarke in Hook. f. Fl. Brit. India 4 : 129. 1883 ; Collett, Fl. Siml. 326. 1902.

Erect herbs with hollow stem. Leaves opposite, spatulate, lower long stalked, upper sessile. Flowers lurid blue.

Fl. & Fr. : August - October.

Kangra (DD), Simla (DD).

Alpine Himalaya, Himachal Pradesh to Assam.

Swertia lurida (D. Don ex G. Don) Clarke in Hook. f. Fl. Brit. India 4 : 124. 1883. *Ophelia lurida* D. Don ex G. Don, Gen. Syst. 4 : 179. 1837.

Herbs. Leaves sessile, acute elliptic. Flowers green yellow.

Fl. & Fr. : July October.

Kangra (BSIP).

North Western Himalaya and Nepal.

Swertia paniculata Wall. Pl. As. Rar. 3 : 3. t. 205. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 122. 1883 ; Collett, Fl. Siml. 326. 1902 ; Nair, Fl. Bash. Himal. 189. 1977.

Erect herbs with spreading branches. Leaves oblong or lanceolate. Flowers white with two purple blotches at the base.

Fl. & Fr. : August October.

Chamba (DD), Kangra (RRL), Kinnaur (DD), Kulu (DD), Simla (DD).

Temperate Western Himalaya upto Bhutan.

Swertia petiolata D. Don in Trans. Linn. Soc. 17 : 519. 1837 ; Clarke in Hook. f. Fl. Brit. India 4 : 128. 1883 ; Nair, Fl. Bash. Himal. 189. 1977.

Herbs with hollow stem. Lower cauline leaves long petioled. Flowers bluish white.

Fl. & Fr. : July October.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD), Lahul and Spiti (BSD, DD), Simla (DD).

Western Himalaya and Nepal.

Swertia petiolata D. Don var. *lahulensis* Clarke in Hook. f. Fl. Brit. India 4 : 128. 1883.

Herbs. Flowers greenish.

Fl. & Fr. : July September.

Chenab valley (DD).

Himachal Pradesh.

Swertia pulchella Buch. Ham. ex Clarke in Hook. f. Fl. Brit. India 4 : 125. 1883.

Flowers pale blue.

Herbs. Leaves sessile, narrowly lanceolate.

Fl. & Fr. : July - September.

Kangra (RRL), Kulu (DD).

Subtropical Himalaya.

Swertia speciosa D. Don in London Edinb. Philos. Mag. J. Sci. 8 : 77. 1836 ; Clarke in Hook. f. Fl. Brit. India 4 : 128. 1883 ; Collett, Fl. Siml. 325. 1902 ; Nair, Fl. Bash. Himal. 189. 1977.

Herbs with hollow stem. Leaves elliptic.

Fl. & Fr. : August - October.

Kangra (DD), Kulu (DD), Simla (DD).

Himalaya, Kashmir to Bhutan.

Swertia tetragona (Edgew.) Clarke in Hook. f. Fl. Brit. India 4 : 122. 1883 ; Collett, Fl. Siml. 326. 1902 ; Nair, Fl. Bash. Himal. 190. 1977. *Ophelia tetragona* Edgew. in Trans. Linn. Soc. 20 : 86. 1846.

Erect herbs. Leaves lanceolate. Flowers white with purple streaks.

Fl. & Fr. : August - November.

Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya, Kashmir to Nepal.

Swertia thomsoni Clarke in Hook. f. Fl. Brit. India 4 : 129. 1883.

Herbs. Lower cauline leaves long - petioled.

Fl. & Fr. : July - August.

Chamba (DD).

Western Himalaya.

Tripterospermum volubile (D. Don) Hara in Journ. Jap. Bot. 40 : 21. 1965 et Fl. E. Himal. 1 : 258. 1966. *Gentiana volubile* D. Don, Prodr. Fl. Nepal. 126. 1825. *Crawfurdia japonica* Sieb. & Jucc. var. *luteo-viridis* (Clarke) Clarke in Hook. f. Fl. Brit. India 4 : 108. 1883.

Herbs. Leaves cordate - lanceolate. Flowers yellowish green.

Fl. & Fr. : September - November.

Kinnaur (DD).

Himalaya, Himachal Pradesh to Bhutan and Khasia Hills.

MENYANTHACEAE

H. J. CHOWDHURY

Menyanthes trifoliata L. Sp. Pl. 145. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 130. 1883.

Herbs with floating or creeping root stocks. Flowers bluish - white.

Fl. & Fr. : May - November.

Chamba (DD), Sirmur (BSD).

Western Himalaya upto Nepal.

Nymphoides cristata (Roxb.) O. Kuntze, Rev. Gen. Pl. 2 : 429. 1891.
Menyanthes cristata Roxb. Pl. Corom. 2 : 3. t. 105. 1799. *Limnanthemum cristatum* (Roxb.) Griseb. Gen. & Sp. Gent. 342. 1839 ; Clarke in Hook. f. Fl. Brit. India 4 : 131. 1883.

Herbs with short, erect rhizomes and deeply cordate, purplish, floating leaves. Flowers white.

Fl. & Fr. : May - July.

Kinnaur (DD), Kulu (DD).

Throughout India.

Nymphoides indica (L.) O. Kuntze, Rev. Gen. Pl. 2 : 429. 1891.
Menyanthes indica L. Sp. Pl. 145. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 132. 1883. *Limnanthemum indicum* Griseb. emend. Thw. Enum. Pl. Zeyl. 205. 1860 ; Clarke in Hook. f. Fl. Brit. India 4 : 131. 1883.

Herbs with horizontal or oblique rhizomes. Stems numerous from the rhizome, producing a node on the water surface from which develops a tuft of roots, a cluster of flowers and a single floating leaf.

Fl. & Fr. : June September.

Simla (DD), Sirmur (BSD).

Throughout India.

Nymphoides peltatum (S. G. Gmel.) O. Kuntze, Rev. Gen. Pl. 2 : 429. 1891. *L. nymphaeoides* (L.) Link. Fl. Portug. 1 : 344. Clarke in Hook. f. Fl. Brit. India 4 : 131. 1883. *Menyanthes nymphaeoides* L. Sp. Pl. 145. 1753.

Floating herbs, rooting at nodes. Flowers yellow.

Fl. & Fr. : May August.

Chamba (DD).

Western Himalaya.

POLEMONIACEAE

B.M. WADHWA AND H.J. CHOWDHERY

Phlox paniculata L. Sp. Pl. 151. 1753.

Perennial, glabrous herb. Leaves oblong lanceolate. Flowers pink - purple, calyx teeth awl like.

Fl. & Fr. : August September.

Simla (LWG).

Cultivated in gardens.

Polemonium coeruleum L. Sp. Pl. 163. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 133. 1883 ; Grohmann in Fl. W. Pak. 8 : 2. 1971.

Perennial herb. Leaves alternate, pinnate. Cymes terminal. Corolla funnel shaped, blue. Capsule ellipsoid included in the calyx.

Fl. & Fr. : May - August.

Chamba (BSD), Kinnaur (BSD), Lahul and Spiti (BSD).

Moist temperate and subalpine areas of Western Himalaya.

Polemonium coeruleum L. var. **himalaicum** Baker in Gardn. Chron. ser. 3, 1 : 766. 1887 ; Nair, Fl. Bash. Himal. 195, 1977.

Erect herb. Inflorescence corymbose. Flowers violet.

Fl. & Fr. : July - September.

Kinnaur (DD), Simla (DD).

Alpine Western Himalaya and Nepal.

BORAGINACEAE

B. M. WADIWA AND H. J. CHOWDHURY

Arnebia benthami (Wall. ex. G. Don) I. M. Johnston in Journ. Arn. Arb. 35 : 58. 1954 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 581. 1972. *Echium benthami* Wall. ex. G. Don, Gen. Syst. 4 : 333, 1838. *Macrotomia benthami* (Wall. ex. G. Don) DC. Prodr. 10 : 27. 1846 ; Clarke in Hook. f. Fl. Brit. India 4 : 177. 1883 ; Nair, Fl. Bash. Himal. 192. 1977.

Erect, hispid herbs. Spike very dense.

Fl. & Fr. : August - October.

Chamba (DD), Kinnaur (DD), Lahul & Spiti (BSD, DD).

Himalaya - Kashmir to Nepal.

Arnebia euchroma (Royle) I. M. Johnston in Contr. Gray Herb. 73 : 49. t. 47. f. 2. 1924 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 581. 1972. *Lithospermum euchroma* Royle, Ill. Bot. Himal. 305. 1836. *Macrotomia perennis* Boiss. Fl. Orient. 4 : 212. 1875 ; Clarke in Hook. f. Fl. Brit. India 4 : 177. 1883. *Macrotomia euchroma* (Royle) Paulsen in Bot. Tidskr. 27 : 216. 1906 ; Nair, Fl. Bash. Himal. 193. 1977.

Hispid, erect herb. Flowers dimorphic on subcapitate spike.

Fl. & Fr. : August - September.

Chamba (DD), Kinnaur (DD), Lahul & Spiti (BSD, DD).

Alpine Western Himalaya, Western Tibet and Nepal.

Arnebia thomsoni Clarke in Hook. f. Fl. Brit. India 4 : 176. 1883.

Diffuse, white, densely hairy herb. Flowers yellow.

Fl. & Fr. : August - October.

Lahul & Spiti (DD).

Western Himalaya and Western Tibet.

Arnebia tibetana Kurz in Journ. Asia. Soc. Beng. 43 (2) : 189. 1874 ; Clarke in Hook. f. Fl. Brit. India 4 : 176. 1883.

Very hispid herb. Spikes generally elongate, flowers dimorphic.

Fl. & Fr. : July - August.

Chamba (DD), Lahul & Spiti (BSIP, DD).

Western Himalaya and Western Tibet.

Asperugo procumbens L. Sp. Pl. 138. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 167. 1883 ; Nair, Fl. Bash. Himal. 190. 1977.

Spreading, hispid herb. Flowers purplish - blue to white.

Fl. & Fr. : July - October.

Chamba (DD), Kinnaur (BSD), Lahul & Spiti (BSD, DD).

North - Western Himalaya, W. Tibet and Nepal.

Cynoglossum glochidiatum Wall. ex Benth. in Royle, Ill. Bot. Himal. 306. 1836 ; Clarke in Hook. f. Fl. Brit. India 4 : 156. 1883 ; Nair, Fl. Bash. Himal. 190. 1977. *C. denticulatum* DC. Prodr. 10 : 150. 1846 ; Clarke in Hook. f. Fl. Brit. India 4 : 157. 1883. *C. wallitchii* G. Don, Gen. Syst. 4 : 354. 1838 ; Clarke in Hook. f. Fl. Brit. India 4 : 157. 1883.

Hirsute, erect herb. Leaves covered with long white, bulbous base hairs. Flowers dark blue. Nutlets bristly on the margins.

Fl. & Fr. : April - September.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSD, BSIP, RRL), Lahul & Spiti (BSD, CDRI, DD, RRL), Simla (BSD, DD, LWG).

Throughout India.

Cynoglossum lanceolatum Forssk. Fl. Aegypt. Arab. 41. 1775 ; Nair, Fl. Bash. Himal. 190. 1977. *C. micranthum* Desf. Tab. Ecol. Bot. ed. 1. 220. 1804 ; Clarke in Hook. f. Fl. Brit. India 4 : 156. 1883 ; Collett, Fl. Siml. 191. 1902.

Hirsute herb. Leaves covered with long, white bulbous base hairs. Flowers pale to blue black or white.

Fl. & Fr. : June - October.

Kinnaur (BSD), Kulu (BSD, DD), Lahul & Spiti (BSD), Simla (BSD, LWG).

Northern India and Himalaya - Kashmir to Bhutan.

Cynoglossum microglochin Benth. in Royle, Ill. Bot. Himal. 305. 1836 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 584. 1972 ; Clarke in Hook. f. Fl. Brit. India 4 : 158. 1883.

Erect, hairy herb. Leaves densely hairy beneath.

Fl. & Fr. : June - August.

Chamba (DD, LWG), Lahul & Spiti (BSD), Simla (DD, LWG).

Temperate Western Himalaya, Kashmir to Kumaon

Cynoglossum nervosum Benth. ex Clarke in Hook. f. Fl. Brit. India 4 : 158. 1883 ; Riedl in Rech. f. Fl. Iran. 48 : 146. 1967.

Erect, hairy herb. Leaves hirsute on both sides.

Fl. & Fr. : June - September.

Chamba (BSD), Kulu (DD), Lahul & Spiti (BSD, DD).

Western Himalaya.

Cynoglossum petiolatum (Hook. f) A. DC. Prodr. 10 : 149. 1846 ; Clarke in Hook. f. Fl. Brit. India 4 : 158. 1883 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 585. 1972. *Anchusa petiolata* Hook. f. in Bot. Mag. 47. t. 3858. 1841.

Erect, hairy herb.

Fl. & Fr. : June - September.

Lahul & Spiti (DD), Simla (DD).

Western alpine Himalaya.

Cynoglossum zeylanicum (Vahl ex Hornem.) Thunb. ex Lehm. in Neue Schrift. Naturf. Ges. Halle 3(2) : 20. 1817 ; Nair, Fl. Bash. Himal. 191. 1977. *Anchusa zeylanica* Vahl ex Hornem. Enum. Hafn. Himal. 191. 3. 1807. *Cynoglossum furcatum* Wall. ex Roxb. Fl. Ind. ed. Carey, 2 : 6. 1824 ; Clarke in Hook. f. Fl. Brit. India 4 : 155. 1883 ; Collett, Fl. Siml. 331. 1902.

Erect herb. Leaves densely clothed with soft pubescence. Flowers white or pale - blue. Nutlets bristly.

Fl. & Fr. : June - September.

Chamba (DD), Kangra (DD), Kinnaur (DD), Kulu (BSD, DD), Simla (DD).

Throughout India.

Eritrichium canum (Benth.) Kitam. Act. Phytotax. Geobot. 19 : 104. 1963 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 586. 1972. *Echinosperrum canum* Benth. in Royle, III. Bot. Himal. 306. 1836. *Eritrichium strictum* Decne. in Jacquem. Voy. Bot. Ind. 125. 1844 ; Clarke in Hook. f. Fl. Brit. India 4 : 164. 1883. *E. rupestre* (Pallas) Bunge var. *pectinatum* (Pallas) Brand in Pflanznr. Heft. 4 : 252 : 192. 1931 ; Nair, Fl. Bash. Himal. 191. 1977.

Silky, white herb. Flowers blue.

Fl. & Fr. : June - August.

Lahul & Spiti (DD, RRL).

Western Himalaya and Nepal.

Eritrichium fruticosum Klotz. Reis. Pr. Wald. Bot. 96. 1862 ; Stewart, Ann. Cat. Vas., Pl. W. Pak. & Kash. 586. 1972. *E. strictum* var. *fruticosum* (Kl.) Clarke in Hook. f. Fl. Brit. India 4 : 164. 1883.

Weak herb with diffuse, divaricate branches. Flowers blue.

Fl. & Fr. : June - August.

Chamb (BSD), Kinnaur (BSD), Lahul & Spiti (BSD).

Western Himalaya.

Eritrichium nanum (Vill.) Schrad. Comment Soc. Sc. Gotting. 4 : 186. 1820 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 586. 1972.

Erect herbs. Leaves sessile. Flowers blue, purpurescent. Nutlets membranous, glabrous.

Fl. & Fr. : June August.

Lahul and Spiti (BSD).

Western Himalaya.

Eritrichium nanum (Vill.) Schrad. ssp. *villosum* (Ledeb.) Brand. in Engl. Pflanzenr. 4, 252. 189. 1931 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 586. 1972. *Myosotis villosa* Ledeb. in Mem. Acad. Petersb. 5 : 516. 1812. *Echinosperrum sericeum* Benth. in Royle, Ill. Bot. Himal. 306. 1839 ; Clarke in Hook. f. Fl. Brit. India 4 : 165. 1883. (in syn. *E. basifixum* Clarke).

Erect herb. Leaves softly villous. Flowers blue.

Fl. & Fr. : June - August.

Lahul and Spiti (DD).

Alpine Himalaya, Kashmir to Garhwal.

Eritrichium thomsonii (Clarke) I. M. Johnston in Journ. Arn. Arb. 21 : 53. 1940. *Omphalodes thomsonii* Clarke in Hook. f. Fl. Brit. India 4 : 155 1883. *Eritrichium spathulatum* Clarke var. *thomsonii* (Clarke) Kazmi in Journ. Arn. Arb. 51 : 389. 1970 ; Nair, Fl. Bash. Himal. 191. 1977.

Weak, decumbent, strigose perennial herb. Flowers white or blue.

Fl. & Fr. : June August.

Kinnaur (DD), Lahul & Spiti (DD).

Himalaya and Western Tibet.

Hackelia uncinata (Benth.) C. E. C. Fischer in Kew Bull. 1932 : 298. 1932 ; Nair, Fl. Bash. Himal. 191. 1977. *Cynoglossum uncinatum* Benth. in Royle, Ill. Bot. Himal. 305. 1836. *Paracaryum gloehidiatum* Benth. in Benth. & Hook. f. Gen. Pl. 2 : 850. 1876 ; Clarke in Hook. f. Fl. Brit. India 4 : 161. 1883 ; Collett, Fl. Siml. 333. 1902.

Laxly hairy herb. Flowers pale blue.

Fl. & Fr. : July September.

Chamba (BSD, DD), Kinnaur (DD), Kangra (BSD), Kulu (DD), Lahul & Spiti (BSD, DD), Simla (BSD, DD).

Alpine Himalaya, Kashmir to Sikkim.

Heliotropium brevifolium Wall. ex Roxb. Fl. Ind. ed. Carey, 2 : 2. 1824. *Heliotropium strigosum* Wall. *brevifolium* (Wall. ex Roxb.) Clarke in Hook' f. Fl. Brit. India 4 : 151. 1883.

Small procumbent herb. Leaves smaller than *H. strigosum* Willd.

Fl. & Fr. : June September.

Chamba (DD).

Throughout India.

Heliotropium ellipticum Ledeb. in Eichw. Pl. Nov. Iter. Casp. Cauc. 10. t. 4. 1831 -33 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 590. 1972. *H. eichwaldi* Steud. Nom. Bot. ed. 2. 1 : 744. 1840 - 41 ; Clarke in Hook. f. Fl. Brit. India 4 : 149. 1883.

Softly hairy, woody herb. Flowers white. Nutlets glabrous, minutely verrucose.

Fl. & Fr. : July September.

Solon (DD).

Throughout India.

Heliotropium strigosum Willd. Sp. Pl. 1 : 743. 1798 ; Clarke in Hook. f. Fl. Brit. India 4 : 151. 1883 ; Collett, Fl. Siml. 330. 1902 ; Nair, Fl. Bash. Himal. 192. 1977.

Small, procumbent herb, clothed with small, white hairs. Flowers pale - blue or white.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur (BSD).

Throughout India.

Lappula barbata (M. Bieb.) Gurke in Engl. & Prantl, Natural. Pflanzenf. 4. 3a : 107. 1897 var. *barbata*. *Myosotis barbata* M. Bieb. Fl. Taur. Cauc. 1 : 121. 1808. *Echinosperrnum barbatum* Lehm. Pl. Asperif. 2 : 128. 1818 ; Clarke in Hook. f. Fl. Brit. India 4 : 163. 1883.

Erect, hispid herb.

Fl. & Fr. : June - August.

Kinnaur (BSD, DD), Lahul & Spiti (BSD, DD).

Subalpine Western Himalaya.

Lappula barbata (M. Bieb.) Gurke var. *cariensis* (Boiss.) Brand. in Pflanzenr. 4.252 : 141. 1931. *Echinosperrnum cariensis* Boiss. Diagn. Pl. Or. Ser. 1. 4 : 40. 1844.

Fl. & Fr. : July August.

Lahul & Spiti (BSD).

Western Himalaya.

Lappula microcarpa (Ledeb.) Gurke in Engl. & Prantl, Naturf. Pflanzenf. 4 3A : 107. 1897. *Echinoseprnum microcarpum* Ledeb. Fl. Alt. 1 : 202. 1829.

Fl. & Fr. : June August.

Lahul & Spiti (BSD).

Western Himalaya and Nepal.

Lasiocaryum diffusum (Brand.) I. M. Johnston in Journ. Arn. Arb. 21 : 51. 1940. *Microcaryum diffusum* Brand. in Fedde. Repert. 22 : 101. 1925.

Fl. & Fr. : June August.

Kulu (BSD).

Himalaya, Himachal Pradesh to Sikkim.

Lindelofia anchusoides (Lindl.) Lehm. in Hamburg Garten Zeit. 6 : 352. 1852 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 595. 1972. *Cynoglossum anchusoides* Lindl. Bot. Reg. 28. t. 14. 1842. *Adenocaryum anchusoides* (Lindl.) Brand. in Fedde. Repert. 13 : 548. 1915 ; Nair, Fl. Bash. Himal. 190. 1977. *Paracaryum helicarpum* A. Kerner in Rev. Naturw. ver. Innsbruck I. Suppl. 105. 1870 ; Clarke in Hook. f. Fl. Brit. India 4 : 161. 1883.

Softly hairy, erect herb. Flowers blue white.

Fl. & Fr. : August - October.

Chamba (DD), Lahul & Spiti (BSD, DD).

Alpine Himalaya, Kashmir to Sikkim.

Lindelofia longiflora (Benth.) Baill. Hist. Pl. 10 : 379. 1890 ; Nair, Fl. Bash. Himal. 192. 1977. *Cynoglossum longiflorum* Benth. in Royle, III. Bot. Himal. 305. 1836. *L. spectabilis* Lehm. in Hamb. Gartenz. 6 : 352. 1850 ; Clarke in Hook. f. Fl. Brit. India 4 : 159. 1883.

Hairy herb. Flowers deep blue.

Fl. & Fr. : May September.

Lahul & Spiti (BSD), Simla (BSD, DD).

Alpine Himalaya, Kashmir to Nepal.

Lindelofia longiflora (Benth.) Baill. var. **falconeri** (Clarke) Brand. in Engl. Pflanzenr. 4 252 : 85. 1931 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 595. 1972. *L. spectabilis* Lehm. var. *falconeri* Clarke in Hook. f. Fl. Brit. India 4 : 159. 1883.

Fl. & Fr. : June August.

Lahul & Spiti (BSD).

Western Himalaya.

Lindelofia stylosua (Kar. & Kir.) Brand. in Pflanzenr. 4. 252 : 85. 1931 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 595. 1972. *Cynoglossum stylosua* Kar. & Kir. in Bull. Soc. Nat. Mosc. 15 : 409. 1842. *Lindelofia benthami* Hook. f. Fl. Brit. India 4 : 159. 1883.

Erect, hairy herb. Flowers purplish black.

Fl. & Fr. : June August.

Lahul & Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Lithospermum arvense L. Sp. Pl. 132. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 174. 1883 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 595. 1972 ; Nair, Fl. Bash. Himal. 192. 1977.

Strigose herb. Flowers hairy, white.

Fl. & Fr. : May August.

Kinnaur (BSD, DD), Chamba (DD), Kulu (DD), Lahul & Spiti (BSD).

Western Tibet and Himalaya, Kashmir to Bhutan.

Lithospermum officinale L. Sp. Pl. 132. 1753 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 596. 1972.

Kinnaur (DD).

Himalaya, Kashmir to Bhutan.

Lycopsis ovata Lehm. Asperif. 1 : 222. 1818 ; Riedl. in Rech. f. Fl. Iran. 48 : 237. 1967. *L. orientalis* L. Sp. Pl. 139. 1756 ; Nair, Fl. Bash. Himal. 192. 1977. *L. arvensis* (non L.) Clarke in Hook. f. Fl. Brit. India 4 : 169. 1883.

Bristly herb. Flowers white.

Fl. & Fr. : July August.

Lahul & Spiti (CDRI, DD).

Western Tibet and Western Himalaya.

Mertensia racemosa (Benth. ex Royle) Benth. & Hook. f. Gen. Pl. 2 : 857. 1873 ; Clarke in Hook. f. Fl. Brit. India 4 : 171. 1883 ; Collett. Fl. Siml. 333. 1902 ; Nair, Fl. Bash. Himal. 193. 1977. *Myosotis racemosa* Benth. ex Royle, Ill. Bot. Himal. 305. 1836.

Fl. & Fr. : August October.

Kinnaur (DD), Lahul & Spiti (DD), Simla (BSD, DD).

Temperate Western Himalaya.

Myosotis palustris (L.) Nath. Fl. Monspel. 11. 1756 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 597. 1972. *M. scorpioides* L. var. *palustris* L. Sp. Pl. 131. 1753. *M. caespitosa* Clarke (non Schultz.) in Hook. f. Fl. Brit. India 4 : 173. 1883 ; Nair, Fl. Bash. Himal. 193. 1977.

Hairy herb. Flowers blue, red or white.

Fl. & Fr. : July - September.

Chamba (DD), Kinnaur (BSD, DD), Simla (BSD).

Temperate, subalpine Western Himalaya.

Myosotis refracta Boiss. Voy. Bot. Midi. Esp. 2 : 433. 1839 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 597. 1972. *M. stricta* sensu Clarke in Hook. f. Fl. Brit. India 4 : 174. 1883. (non Link.)

Hairy herb. Leaves crowded, oblong. Flowers in raceme.

Fl. & Fr. : June September.

Lahul & Spiti (BSD, DD, RRL).

Western Himalaya.

Myosotis sylvatica Hoffm. Deutsch. Fl. Od. Bot. Taschenb. 61 : 1. 1791 ; Clarke in Hook. f. Fl. Brit. India 4 : 173. 1883 ; Collett, Fl. Siml. 335. 1902 ; Nair, Fl. Bash. Himal. 193. 1977.

Tufted, erect herb covered with spreading hairs. Flowers blue.

Fl. & Fr. : May - August.

Chamba (BSD, DD), Kangra (BSD, DD), Kinnaur (BSD, DD), Kulu (DD), Lahul & Spiti (BSD, DD, RRL).

Himalaya Kashmir to Bhutan.

Pseudomertensia echioides (Benth.) Riedl. in Rech. f. Fl. Iran. 8 : 62. 1967 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 600. 1972. var. **echioides**. *Lithospermum echioides* Benth. in Royle, Ill. Bot. Himal. 305. 1836. *Mertensia echioides* (Benth.) Benth. & Hook. f. Gen. Pl. 2 : 857. 1873 ; Clarke in Hook. f. Fl. Brit. India 4 : 170. 1883, Nair, Fl. Bash. Himal. 193. 1977.

Softly, hairy herb with spatulate leaves, long petioled. Raceme densely flowered.

Fl. & Fr. : August - October.

Chamba (BSD), Kinnaur (DD), Lahul & Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Pseudomertensia echioides (Benth.) Riedl. var. **lahulensis** (Brand.) Kazmi in J. Arn. Arb. 51 : 374. 1970 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 600. 1972. *Lindelophia lahulensis* Brand. Repert. Sp. Nov. 19 : 70. 1923.

Perennial herb. Shoots many, profusely leaved. Inflorescence lax.

Lahul & Spiti (Stewart, 1972).

Himachal Pradesh.

Pseudomertensia moltkioides (Benth. in Royle) Kazmi in Journ. Arn. Arb. 51 : 380. 1970 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 601. 1972. *Myosotis moltkioides* Benth. in Royle, Ill. Bot. Himal. 305.

1839. *Anchusa moltkioides* Benth. in Royle, Ill. Bot. Himal. t. 73. f. 1.
 1839. *Mertensia tibetica* Clarke in Hook. f. Fl. Brit. India 4 : 171. 1883.
M. moltkioides Clarke in Hook. f. Fl. Brit. India 4 : 170. 1883.

Hairy herb. Leaves spatulate.

Fl. & Fr. : May August.

Chamba (DD).

Western Himalaya and Western Tibet.

Pseudomertensia moltkioides (Benth. in Royle) var. ***primuloides***
 (Decne.) Reidl. in Rech. f. Fl. Iran. 48. 62. 1967. *Eritrichum primuloides*
 Decne. in Jacquem. Voy. Bot. Ind. 124. t. 128. 1844. *Mertensia primuloides*
 (Decne.) Clarke in Hook. f. Fl. Brit. India 4 : 170. 1883.

Strigose, densely leafy herb. Raceme dense.

Fl. & Fr. : May August.

Chamba (DD).

Alpine Western Himalaya.

Onosma hispidum Wall. ex G. Don, Gen. Syst. 4 : 317. 1838 ;
 Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 598. 1972. *O. hispidum*
 Wall. ex DC. Prodr. 10 : 66. 1846 ; Nair, Fl. Bash. Himal. 194. 1977.
O. echioides (non L.) Clarke in Hook. f. Fl. Brit. India 4 : 178. 1883.

Hispid herbs. Flowers yellow.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul & Spiti (BSD,
 DD, RRL).

Western Himalaya.

Onosma hypoleucum I. M. Johnston in Journ. Arn. Arb. 32 : 220.
 1951 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 599. 1972.

Fl. & Fr. : June September.

Chamba (DD).

Western Himalaya.

Rochelia cardiosepada Bunge in Mem. Sav. Entrang. Acad. Petersb.
 7 : 420. 1851 ; Clarke in Hook. f. Fl. Brit. India 4 : 166. 1883 ; Stewart,
 Ann. Cat. Vas. Pl. W. Pak. & Kash. 602. 1972.

Strigose, subhispid, erect herb. Sepals white, silky.

Fl. & Fr. : June - August.

Lahul & Spiti (DD).

Western Himalaya and Western Tibet.

Rochelia macrocalyx Bunge in Mem. Sav. Etrang. Acad. Petersb. 7 : 419. 1851 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 603. 1972. *R. rectipes* Stocks in Hook. Kew Journ. 4 : 176. 1852 ; Clarke in Hook. f. Fl. Brit. India 4 : 166. 1883.

Erect, villous, subhispid herb. Flowers pale blue.

Fl. & Fr. : June - August.

Lahul & Spiti (BSD).

Western Himalaya and Western Tibet.

Solenanthus circinnatus Ledeb. Fl. Alt. 1 : 194. 1829 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 603. 1972.

Fl. & Fr. : May - July.

Chamba (DD).

Alpine Western Himalaya.

Trichodesma indicum (L.) R. Br. Prodr. Fl. Nov. Holl. 496. 1810 ; Clarke in Hook. f. Fl. Brit. India 4 : 153. 1883 ; Collett, Fl. Siml. 331. 1902 ; Nair, Fl. Bash. Himal. 194. 1977. *Borago indica* L. Sp. Pl. 137. 1753.

Rough herb with bulbous based hairs. Flowers pale blue turning to pink.

Fl. & Fr. : June - September.

Chamba (DD), Kangra (BSD, BSIP), Kinnaur (DD), Mandi (LWG), Simla (BSD), Una (BSD).

Throughout India.

Trichodesma zeylanicum (Burm. f.) R. Br. Prodr. Fl. Nov. Holl. 496. 1810 ; Clarke in Hook. f. Fl. Brit. India 4 : 154. 1883 ; Raghwan et al. in Rec. Bot. Surv. India 21 (2) : 55. 1981. *Borago zeylanica* Burm. f. Fl. Ind. 41. 1768.

Hispid, erect herb. Flowers pale blue.

Fl. & Fr. : April August.

Una (BSD).

Throughout India.

Trigonotis rotundifolia (Wall. ex Benth.) Benth. ex Clarke in Hook. f. *Fl. Brit. India* 4 : 172. 1883 ; Nair, *Fl. Bash. Himal.* 194. 1977. *Myosotis rotundifolia* Wall. ex Benth. in Royle, *Ill. Bot. Himl. Mount.* 305. 1836. *Eritrichium rotundifolium* (Wall. ex Benth.) DC. *Prodr.* 10 : 123. 1846.

Weak herbs. Flowers blue white.

Fl. & Fr. : July August.

Simla (BSD).

Subalpine Himalaya, Himachal Pradesh to Bhutan.

CORDIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Cordia dichotoma Forst. f. *Prodr.* 18. 1786 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 583. 1972 ; Nair, *Fl. Bash. Himal.* 194. 1977. *C. myxa* (non L.) Clarke in Hook. f. *Fl. Brit. India* 4 : 136. 1883 ; Collett, *Fl. Siml.* 329. 1902.

Tree, sometimes a shrub. Male and female flowers often on the same tree. Fruit a berry, yellow or pinkish.

Fl. & Fr. : June August.

Chamba (CDRI), Kinnaur (BSD, DD), Simla (BSD).

Throughout India.

Ehretia acuminata R. Br. var. **serrata** (Roxb.) I. M. Johnston in *Journ. Arn. Arb.* 32 : 23. 1951. *E. serrata* Roxb. *Fl. Ind.* ed. Carey, 2 : 340. 1824 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 586. 1972.

E. acuminata (non R. Br.) Clarke in Hook. f. Fl. Brit. India 4 : 141. 1883 ; Collett, Fl. Siml. 330. 1902 ; Parker, For. Fl. Punj. ed. 3. 359. 1956 ; Nair, Fl. Bash. Himal. 194. 1977.

Tree. Leaves minutely bristly or glabrous above. Drupe short-ellipsoid, obtuse.

Fl. & Fr. : May July.

Chamba (CDRI, DD), Kangra (BSD, DD, RRL), Kinnaur (DD), Kulu (DD), Mandi (DD).

Subtropical Himalaya and adjacent hills.

Ehretia laevis Roxb. Corom. Pl. 1 : 42. t. 56. 1795 ; Clarke in Hook. f. Fl. Brit. India 4 : 141. 1883 ; Parker, For. Fl. Punj. ed. 3. 360. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 585. 1972 ; Nair, Fl. Bash. Himal. 195. 1977. *E. floribunda* Benth. ex Royle, Ill. Bot. Himal. 306. 1836.

Tree or shrub. Drupe depressed, globose, distinctly 4 ribbed when dry.

Fl. & Fr. : January - June.

Chamba (BSD), Sirmur (BSD).

Throughout India.

CONVOLVULACEAE

H. J. CHOWDHERY, B.P. UNIYAL AND B. M. WADHWA

Argyreia nasirii D. Austin in Fl. W. Pak. 126 : 4. 1979. *Lettsomia thomsonii* Clarke in Hook. f. Fl. Brit. India 4 : 193. 1883. *Argyreia thomsoni* (Clarke) sensu Nair, Fl. Bash. Himal. 196. 1977 (nom. illeg.).

Large climber with hairy stem and leaves. Flowers pinkish - white.

Fl. & Fr. : January - February.

Chamba (DD), Simla (DD).

Throughout the Himalaya.

Calystegia hederacea Wall. ex Roxb. Fl. Ind. ed. Carey 2, 94. 1824 ; Clarke in Hook. f. Fl. Brit. India 4 : 217. 1883.

Prostrate or twining herb with slender stem. Flowers solitary, pink - purple.

Fl. & Fr. : June - September.

Chamba (DD).

Northern India from Punjab to Nepal.

Convolvulus arvensis L. Sp. Pl. 153. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 219. 1883 ; Collett, Fl. Siml. 338. 1902 ; Nair, Fl. Bash. Himal. 196. 1977 ; D. Austin in Fl. W. Pak. 126 : 28. 1979.

Twiner. Leaves sagittate. Flowers white to pink.

Fl. & Fr. : April - October.

Chamba (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD).

North - Western India, temperate regions.

Evolvulus alsinoides (L.) L. Sp. Pl. ed. 2. 392. 1762 ; Clarke in Hook. f. Fl. Brit. India 4 : 220. 1883 ; Collett, Fl. Siml. 338. 1902 ; Nair, Fl. Bash. Himal. 196. 1977. *Convolvulus alsinoides* L. Sp. Pl. 157. 1753.

Prostrate, hairy herb. Flowers blue.

Fl. & Fr. : April - October.

Kangra (DD), Kinnaur (BSD), Solon (DD).

Throughout India.

Ipomoea arachnosperma Welw. Apont. Phyto Geogr. 588. 1854 ; D. Austin, in Fl. W. Pak. 126 : 39. 1979. *Ipomoea pilosa* (Roxb.) Sweet, Hort. Brit. ed. 2. 372. 1827 (non Houtt.) ; Clarke in Hook. f. Fl. Brit. India 4 : 213. 1883 ; Collett, Fl. Siml. 338. 1902. *Convolvulus pilosus* Roxb. Hort. Beng. 14. 1814.

Twiner with hirsute stems. Leaves with white woolly tomentum. Flowers pink - purple.

Fl. & Fr. : August - November.

Simla (DD).

North - Western Himalaya, Nepal.

Ipomoea cairica (L.) Sweet, Hort. Birt. 287. 1827. *Convolvulus cairicus* L. Syst. ed. 10. 922. 1759. *Ipomoea palmata* Forssk. Fl. Aegypt. - Arab. 43. 1775 ; Clarke in Hook. f. Fl. Brit. India 4 : 214. 1883.

Twiner. Leaves palmate. Flowers white to light pink.

Fl. & Fr. : June - November.

Kangra (BSD).

Deccan peninsula, Nepal and Himachal Pradesh.

Ipomoea carnea Jacqum. Enum. Pl. Carib. 13. 1760. ssp. *fistulosa* (Mart. ex Choisy) D. Austin in Taxon 26 : 237. 1977. *I. fistulosa* Mart. ex Choisy in DC. Prodr. 9 : 349. 1845.

Shrubs. Stem hollow. Flowers light pink.

Fl. & Fr. : July - December.

Una (BSD).

Western Himalaya and Nepal.

Ipomoea dasysperma Jacqum. Encycl. 1. 132. t. 89. 1811 16 ; Clarke in Hook. f. Fl. Brit. India 4 : 215. 1883.

Glabrous twiners. Leaves pedate. Flowers yellow with purplish eye. Seeds villous.

Simla (vide Hook. f.).

Commonly cultivated.

Ipomoea eriocarpa R. Br. Prodr. Fl. Nov. Holl. 484. 1810 ; Clarke in Hook. f. Fl. Brit. India 4 : 204. 1883 ; Collett, Fl. Siml. 337. 1902 ; Nair, Fl. Bash. Himal. 196. 1977.

Herbaceous twiner. Leaves cordate, hastate. Flowers in sessile clusters, white to pink - purple.

Fl. & Fr. : August - October.

Chamba (DD), Kangra (BSD, DD), Kinnaur (BSD).

Throughout India.

Ipomoea indica (Burm. f.) Merrill. Int. Rumph. Herb. Amb. 445, 1917 ; D. Austin in Fl. W. Pak. 126 : 44. 1979. *Convolvulus indicus* Burm.

f. in Ind. Univ. Herb. Amb. 7 : 6. 1755. *I. congesta* R. Br. Prodr. Fl. Nov. Holl. 485. 1810.

Herbaceous twiner. Leaves entire, sometimes lobed. Flowers purplish blue.

Fl. & Fr. : August - October.

Simla (DD).

North - Western India.

Ipomoea nil (L.) Roth. Cat. Bot. 1 : 36. 1797. *Convolvulus nil* L. Sp. Pl. ed. 2. 1 : 219. 1792 ; Nair, Fl. Bash. Himal. 197. 1977. *I. hederacea* (auct non Jacqum. 1786) Clarke in Hook. f. Fl. Brit. India 4 : 199. 1883 ; Collet, Fl. Siml. 336. 1902.

Herbaceous, hairy twiner. Leaves trilobed. Flowers blue.

Fl. & Fr. : June - October.

Chamba (DD), Kinnaur (BSD).

Throughout India.

Ipomoea pes tigridis L. Sp. Pl. 162. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 204. 1883 ; Nair, Fl. Bash. Himal. 197. 1977.

Herbaceous, hispid twiner. Flowers white or pale pink.

Fl. & Fr. : August - October.

Chamba (DD), Kinnaur (BSD).

Throughout India.

Ipomoea purpurea (L.) Roth. Bot. Abh. 27. 1787 ; Clarke in Hook. f. Fl. Brit. India 4 : 200. 1883 ; Collett, Fl. Siml. 336. 1902 ; Nair, Fl. Bash. Himal. 197. 1977.

Herbaceous twiner. Leaves cordate, entire. Flowers white - pink.

Fl. & Fr. : June - October.

Chamba (BSD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (DD).

Throughout India.

Ipomoea sibirica (L.) Pers. Syn. 1 : 183, 1805 ; Clarke in Hook. f. Fl. Brit. India 4 : 207, 1883. *Convolvulus sibiricus* L. Mant. Pl. 2 : 203, 1771.

Glabrous twiner. Leaves caudate. Flowers pale pink.

Fl. & Fr. : July - October.

Kulu (BSD).

Western Himalaya.

Ipomoea turbinata Lag. Gen. & Sp. Pl. 10, 1816. *I. muricata* (L.) Jacqum. Moeb. Schoenb. 3 : 40, 1798 (non Cav. 1799) ; Clarke in Hook. f. Fl. Brit. India 4 : 197, 1883.

Herbaceous twiner. Flowers pinkish white.

Fl. & Fr. : July - September.

Simla (DD).

Himalaya from Himachal Pradesh to Sikkim.

Merremia hederacea (Burm. f.) Hall. f. Bot. Jahrb. 18 : 118, 1894 ; D. Austin in Fl. W. Pak. 126 : 55, 1979. *Evolvulus hederaceus* Burm. f. Fl. Ind. 77, t. 30, f. 2, 1768. *Ipomoea chrysoides* Ker - Gaul. in Bot. Reg. 4 : t. 270, 1818 ; Clarke in Hook. f. Fl. Brit. India 4 : 206, 1883 ; Collett, Fl. Siml. 337, 1902.

Twining, glabrous climber. Leaves 3 lobed. Flowers white to yellow.

Fl. & Fr. : August - December.

Throughout India.

Porana paniculata Roxb. Corom. Pl. 3 : 31, t. 235, 1819 ; Clarke in Hook. f. Fl. Brit. India 4 : 222, 1883 ; Collett, Fl. Siml. 339, 1902.

Woody twiner. Leaves and young inflorescence rusty. Flowers small whitish.

Fl. & Fr. : January - August.

Kangra (DD), Sirmur (BSD).

Throughout India.

Porana racemosa Roxb. Fl. Ind. Carey ed. 2 : 41. 1824 ; Clarke in Hook. f. Fl. Brit. India 4 : 222. 1883 ; Collett, Fl. Siml. 339. 1902.

Herbaceous twiner. Flowers white.

Fl. & Fr. : July - October.

Kinnaur (DD).

Throughout the tropical and subtropical regions.

Rivea hypocrateriformis (Desr.) Choisy in Mem. Soc. Phys. Hist. Nat. Geneve 6 : 408. 1834 ; D. Austin in Fl. W. Pak. 126 : 60. 1979. *Convolvulus hypocrateriformis* Desr. in Lam. Encycl. Meth. Bot. 3 : 561. 1792.

Climbing shrub. Flowers. white. Fruits green.

Fl. & Fr. : July - October.

Una (BSD).

North Western India.

CUSCUTACEAE

B.M. WADHWA AND H. J. CHOWDHERY

Cuscuta approximata var. **approximata** Bab. in Ann. et Mag. Nat. Hist. 13. 253. t. 4. f. 3. 1844 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 578. 1972 ; Bhattacharyya & Mukerjee in Indian J. For. 1 (2) : 150. 1978. *C. planiflora* Clarke in Hook. f. Fl. Brit. India 4 : 227. 1883. *p. p.* (non Ten.).

Twining parasite. Flowers in sessile - globose heads.

Chamba (Bhattacharyya & Mukerjee).

Western Himalaya.

Cuscuta australls R. Br. var. **australis** R. Br. Prodr. Fl. Nov. Holland et Ins. van - Dieman 1 : 491. 1810.

Stem filiform, yellow - orange. Flowers white to creamy.

Fl. & Fr. : July - September.

Lahul and Spiti (DD).

Western Himalaya.

Cuscuta brevistyla A. Br. ex A. Rich. Tent. Fl. Abyss. 2 : 79. 1850 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 578. 1972 ; Nair, Fl. Bash. Himal. 195. 1977. *C. planiflora* Clarke in Hook. f. Fl. Brit. India 4 : 227. 1883 *p. p.* (non Ten.)

Inflorescence sessile, heads globose.

Fl. & Fr. : July - September.

Kinnaur (DD).

Himalaya.

Cuscuta capitata Roxb. Fl. Ind. 1. 448 : 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 227. 1883 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 578. 1972 ; Nair, Fl. Bash. Himal. 195. 1977.

Slender parasite, stem pale yellow pinkish. Flowers white.

Fl. & Fr. : July - September.

Kinnaur (BSD), Lahul and Spiti (BSD, DD).

Western Himalaya and Gangetic plains.

Cuscuta chinensis Lamk. var. *chinensis* Lamk. Encycl. 2 : 229. 1786 ; Clarke in Hook. f. Fl. Brit. India 4 : 226. 1883 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 579. 1972.

Parasitic, stem yellowish. Flowers white.

Fl. & Fr. : July - September.

Kinnaur (BSD), Lahul and Spiti (DD), Mandi (BSD).

Western Himalaya.

Cuscuta europaea L. Sp. Pl. 124. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 227 : 1883. *p. p.* ; Collett, Fl. Siml. 339. 1902 ; Nair, Fl. Bash. Himal. 195. 1977.

Stem pale yellow or pink purple. Flowers white with purple tinge.

Fl. & Fr. : July - September.

Chamba (BSD), Kinnaur (BSD, DD), Lahul and Spiti (BSD).

Temperate Himalaya.

Cuscuta indica (Engl.) Petro. ex Butkev. in Komarov. Fl. USSR 19 : 52. 1953. *Cuscuta europaea* L. var. *indica* Engel. Trans. Acad. St. Louis : 469. 1859 ; Stewart, Ann. Cat. Vas. P. W. Pak. & Kash, 579. 1972.

Fl. & Fr. : July - October.

Lahul and Spiti (DD).

North Western India and Nepal.

Cuscuta reflexa Roxb. var. *reflexa* Roxb. Pl. Cor. 2 : 3. t. 104. 1798 ; Clarke in Hook. f. Fl. Brit. India 4 : 225. 1883 ; Collett, Fl. Siml. 339. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 580. 1972 ; Nair, Fl. Bash. Himal. 196. 1977.

Succulent, yellowish stem. Flowers white, fragrant.

Fl. & Fr. : July - October.

Chamba (BSD, DD), Kinnaur (BSD), DD), Lahul and Spiti (BSD).

Throughout India.

Cuscuta santapau Banerjee & Das in Journ. Arn. Arb. 46 : 87. 1965.

Fl. & Fr. : September - October.

Western Himalaya and Nepal.

SOLANACEAE

H. J. CHOWDHERY AND B. M. WADHWA

Atropa acuminata Royle, Ill. Bot. Himal. 279. 1835 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 638. 1972. *A. belladonna* (non L.) Clarke in Hook. f. Fl. Brit. India 4 : 241. 1883 ; Collett, Fl. Siml. 344. 1902 ; Nair, Fl. Bash. Himal. 197. 1977.

Erect herb. Leaves entire. Flowers dirty purple or lurid yellow.

Fl. & Fr. : May - September.

Kinnaur (BSD, DD), Simla (DD).

Western Himalaya.

Brugmansia suaveolans (Humb. & Bonpl. ex Willd.) Berch & Presl. Rostl. 1. Solanaceae 45. 1820. *Datura suaveolans* Humb. & Bonpl. ex Willd. Enum. Hort. Berol. 227. 1806 16.

Shrub. Flowers large, pendulous.

Fl. & Fr. : June - September.

Mandi (RRL).

Oranmental.

Capsicum frutescens L. Sp. Pl. 189. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 239. 1883 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 639. 1972 ; Nair, Fl. Bash. Himal. 198. 1977.

Perennial herb. Cultivated for edible fruits which are red orange or yellow.

Fl. & Fr. : August - September.

Chamba (DD), Kinnaur (BSD).

Common throughout India.

Cestrum elegans (Brongn. ex Neumann) Schlecht. in *Linnaea* 19 : 261. 1847. *Habrothamnus elegans* Brongn. ex Neumann in Ann. Fl. Pomane 1844 : 118. 1844.

Fl. & Fr. : July - October.

Simla (DD).

Cultivated, ornamental.

Cestrum fasciculatum Miers in Hook. f. Lond. Journ. Bot. 5 : 151. 1846.

Fl. & Fr. : July - December.

Kangra (DD).

Cultivated.

Datura innoxia Mill. Gard. Dict. ed. 8. n. 5. 1768 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 639. 1972.

Under shrub with greyish pubescens. Flowers white. Corolla with 10 - teeth. Fruit spiny.

Fl. & Fr. : June August.

Una (BSD).

Western Himalaya.

Datura metel L. Sp. Pl. 179. 1753. *D. fastuosa* L. Syst. Nat. ed. 10. 2 : 932. 1759 ; Clarke in Hook. f. Fl. Brit. India 4 : 242. 1883.

Undershrub. Flowers white. Corolla with 5 - teeth. Fruit spiny.

Fl. & Fr. : June September.

Chamba (DD, RRL).

Throughout India.

Datura stramonium L. Sp. Pl. 179. 1753, Clarke in Hook. f. Fl. Brit. India 4 : 242. 1883 ; Collett, Fl. Siml. 34. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 640. 1972.

Shrub. Flowers white.

Fl. & Fr. : June - October.

Chamba (BSD, CDRI, DD, RRL), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (BSD, CDRI, DD), Simla (BSD, DD, LWG).

Temperate Himalaya, Kashmir to Sikkim.

Hyocymus niger L. Sp. Pl. 179. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 244. 1883 ; Collett, Fl. Siml. 345. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 640. 1972 ; Nair, Fl. Bash. Himal. 198. 1977.

Erect, viscid herb. Flowers yellowish - white with purple reticulations.

Fl. & Fr. : April September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, BSIP, DD, RRL).

Temperate Himalaya.

Nicandra physaloides (L.) Gaertn. Fruct. Sem. Pl. 2 : 237. t. 131. f. 2. 1791 ; Clarke in Hook. f. Fl. Brit. India 4 : 240. 1883 ; Collett, Fl.

Siml. 344. 1902 ; Nair, Fl. Bash. Himal. 198. 1977. *Atropa physaloides* L. Sp. Pl. 181. 1753.

Erect herb. Flowers blue. Fruits completely covered by the enlarged calyx.

Fl. & Fr. : May - October.

Kinnaur (BSD, DD), Simla (DD, LWG).

Subtropical Himalaya, hills of deccan peninsula.

Nicotiana plumbaginifolia Viv. Elench. Pl. Hort. Bot. 26. t. 5. 1802 ; Clarke in Hook. f. Fl. Brit. India 4 : 246. 1883 ; Nair, Fl. Bash. Himal. 199. 1977.

Erect herb. Flowers pinkish - white.

Fl. & Fr. : July - October.

Simla (BSIP, DD).

Cultivated.

Nicotiana rustica L. Sp. Pl. 180. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 245. 1883 ; Nair, Fl. Bash. Himal. 199. 1977.

Viscid, erect herb. Flowers yellow.

Fl. & Fr. : June - September.

Chamba (DD), Lahul & Spiti (BSD, DD), Simla (BSD).

North - Western India.

Nicotiana tabacum L. Sp. Pl. 180. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 245. 1883 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 642. 1972 ; Nair, Fl. Bash. Himal. 199. 1977.

Viscid herb. cauline leaves sessile. Flowers pinkish - white.

Fl. & Fr. : May - September.

Chamba (BSD, DD), Kinnaur (BSD), Kulu (BSIP), Simla (BSD, BSIP, LWG), Sirmur (BSD).

Throughout India, cultivated.

Physalis minima L. Sp. Pl. 182. 1753 ; Clarke in Hook. f. Brit. India 4 : 238. 1883 ; Collett, Fl. Siml. 343. 1902 ; Nair, Fl. Bash. Himal. 199. 1977.

Herb. Flowers light yellow. Fruits are enclosed with in the persistent calyx.

Fl. & Fr. : June August.

Simla (BSD).

Throughout India.

Physochlaina praealta (Decne.) Miers in Ann. Mag. Nat. Hist. Ser. 2. 5 : 473. 1850 ; Clarke in Hook. f. Fl. Brit. India 4, 244 1883. *Belenia praealta* Decne. in Jacquem. Voy. Ind. 4 : 114. t. 120. 1844.

Viscid herb. Flowers pale green.

Fl. & Fr. : May August.

Chamba (BSD, DD), Kinnaur (DD), Lahul and Spiti (BSD, BSIP, DD, RRL).

Western Himalaya, Western Tibet and Nepal.

Solanum dulcamara L. Sp. Pl. 185. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 229. 1883 ; Collett, Fl. Siml. 342. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 643. 1972 ; Nair, Fl. Bash. Himal. 199. 1977.

Pubescent herb. Flowers purple.

Fl. & Fr. : July September.

Kinnaur (DD), Simla (DD).

Temperate Himalaya, Kashmir to Sikkim.

Solanum hispidum Pers. Syn. 1 : 228. 1805.

Fl. & Fr. : March - May.

Chamba (CDRI).

A weed, naturalized.

Solanum erianthum D. Don, Prodr. Fl. Nep. 96. 1825 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 643. 1972. *S. verbascifolium* auct (non. L. 184. 1753) Clarke in Hook. f. Fl. Brit. India 4 : 230. 1883 ; Collett, Fl. Siml. 343. 1902 ; Nair, Fl. Bash. Himal. 201. 1977.

Unarmed shrub with grey tomentum. Flowers white.

Fl. & Fr. : July August.

Chamba (DD, RRL), Kangra (DD), Kinnaur (DD), Kulu (DD), Mandi (BSD), Simla (BSD), Sirmur (BSD).

Throughout India.

Solanum indicum L. Sp. Pl. 187. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 234. 1883 ; Collett, Fl. Siml. 342. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 644. 1972 ; Nair, Fl. Bash. Himal. 199. 1977.

Armed, grey pubescent, shrub. Flowers white to bluish violet. Fruits yellow.

Fl. & Fr. : June August.

Kangra (DD).

Throughout tropical India.

Solanum jasminoides Paxt. Mag. Bot. 8 : t. 5. 1841 ; Parker, For. Fl. Punj. ed. 3. 366. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 644. 1972 ; Nair, Fl. Bash. Himal. 200. 1977.

Unarmed climbing shrub. Flowers white.

Fl. & Fr. : June September.

Simla (DD).

Cultivated.

Solanum melongena L. Sp. Pl. 186. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 235. 1883 ; Collett, Fl. Siml. 341. 1902 ; Parker, For. Fl. Punj. ed. 3. 366. 1956 ; Nair, Fl. Bash. Himal. 200. 1977.

Armed or unarmed undershrub. Leaves woolly beneath.

Fl. & Fr. : June September.

Kinnaur (BSD), Simla (DD).

Widely cultivated for edible fruits.

Solanum nigrum L. Sp. Pl. 186. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 229. 1883 ; Collett, Fl. Siml. 341. 1902 ; Nair, Fl. Bash. Himal. 200. 1977.

Unarmed herb. Flowers in Umbels on the stem, white. Fruits black.

Fl. & Fr. : May October.

Chamba (BSD, DD), Kangra (BSD), Kinnaur (BSD), Kulu (BSD, BSIP, DD, LWG), Lahul and Spiti (BSD, RRL), Simla (BSD, DD, LWG).

Throughout India.

Solanum pseudo-capsicum L. Sp. Pl. 184. 1753 ; Parker, For. Fl. Punj. ed. 3. 369. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 644. 1972 ; Nair, Fl. Bash. Himal. 200. 1977.

Shrub or undershrub. Flowers white. Fruits orange yellow.

Fl. & Fr. : June October.

Chamba (BSD), Kangra (DD) Kinnaur (DD), Kulu BSIP, CDRI), (DD, RRL, Simla (BSD, DD, LWG).

Solanum surattense Burm. f. Fl. Ind. 57. 1768 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 644. 1972 ; Nair, Fl. Bash. Himal. 200. 1977. *S. xanthocarpum* Schr. et Wendl. Sert. Hanov. 1 : 8. t. 2. 1795 ; Clarke in Hook. f. Fl. Brit. India 4 : 236. 1883 ; Collett, Fl. Siml. 343. 1902.

Armed, prostrate herb. Flowers blue. Fruits yellow.

Fl. & Fr. : April August.

Throughout India.

Solanum tuberosum L. Sp. Pl. 185. 1753 ; Collett, Fl. Siml. 341. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 645. 1972 ; Nair, Fl. Bash. Himal. 201. 1977. Herb.

Fl. & Fr. : May September.

Chamba (BSD), Kangra (RRL), Kinnaur (BSD), Lahul and Spiti (BSD, RRL), Simla (BSD, LWG).

Commonly cultivated. (Potato).

Solanum viarum Dunal, in DC. Prodr. 13 : 240. 1852 ; Raizada et al. Fl. Muss. 1 : 485. 1978.

Herb with grey pubescens. Flowers white. Young fruits green with white reticulations, yellow when ripe.

Fl. & Fr. : March July.

Kangra (RRL), Mandi (BSD).

A naturalized weed.

Withania coagulans (Stocks) Dunal in DC. Prodr. 13 : 685. 1852 ; Clarke in Hook. f. Fl. Brit. India 4 : 240. 1883. *Puneeria coagulans* Stocks in J. R. As. Soc. Bombay 3 : 54. 1849.

Puberulous undershrub. Flowers lurid yellow.

Fl. & Fr. : July - October.

Kinnaur (DD), Kulu (DD).

North - Western India.

Withania somnifera (L.) Dunal in DC. Prodr. 13 : 453. 1852 ; Clarke in Hook. f. Fl. Brit. India 4 : 239. 1883 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 645. 1972 ; Nair, Fl. Bash. Himal. 201. 1977.

Grey pubescent undershrub. Flowers yellowish - green. Fruits orange, enclosed in the persistent calyx.

Fl. & Fr. : June - November.

Chamba (DD), Kinnaur (BSD, DD), Kulu (DD), Simla (DD).

Throughout India.

SCROPHULARIACEAE

H. J. CHOWDHERY

Antirrhinum orontium L. Sp. Pl. 617. 1753 ; Hook. f. Fl. Brit. India 4 : 253. 1883 ; Collett, Fl. Siml. 348. 1902 ; Nair, Fl. Bash. Himal. 201. 1977.

Erect, glandular - hairy herbs. Leaves lower opposite, upper alternate. Flowers pale - pink, streaked with purple, corolla tube slightly bulged at the base.

Fl. & Fr. : May - October.

Chamba (DD), Kinnaur (DD), Kulu (BSIP), Mandi (LWG), Simla (BSD, DD).

North - Western India.

Bacopa hamiltoniana (Benth.) Wettst. Engl. Pflanzenfam. 4.3 B : 77. 1891 ; Pennell in Proc. Acad. Nat. Sci. Philad. 98 : 83-96. 1946. *Herpestis hamiltoniana* Benth. Scroph. Ind. 30. 1835 ; Hook. f. Fl. Brit. India 4 : 272. 1884 ; Collett, Fl. Siml. 353. 1902.

Erect, glabrous herbs. Flowers sessile, white, tinged with purple.
Fl. & Fr. : August - November.

Simla (DD).

Common in marshy places, throughout India.

Bacopa monnieri (L.) Pennell in Proc. Acad. Nat. Sci. Philad. 98 : 94. 1946 ; Nair, Fl. Bash. Himal. 201. 1977. *Lysimachia monnieri* L. Cent. Pl. 2 : 9. 1756. *Herpestis monnieri* (L.) Benth. Scroph. Ind. 30. 1836 ; Hook. f. Fl. Brit. India 4 : 272. 1884 ; Collett, Fl. Siml. 352. 1902.

Glabrous, creeping, succulent herbs growing in marshes, rooting at joints. Leaves fleshy with lower surface dotted. Flowers pale blue, purple veined.

Fl. & Fr. : June - September.

Simla (BSD, DD).

Marshes throughout India.

Buchnera hispida Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 91. 1825 ; Hook. f. Fl. Brit. India 4 : 298. 1884 ; Collett, Fl. Siml. 358. 1902.

Erect, rigid, roughly bristly herbs. Flowers white or pale - purple, sessile forming a terminal spike.

Fl. & Fr. : July - October.

Chamba (DD), Kangra (DD), Simla (DD).

Western and Central Himalaya.

Centranthera nepalensis D. Don, Prodr. Fl. Nepal. 88. 1825. *Centranthera hispida* Hook. f. Fl. Brit. India 4 : 301. 1884 (non. R. Br.) ; Collett, Fl. Siml. 359. 1902.

Erect, rigid, roughly bristly herbs. Flowers pale purple or white in terminal spikes, corolla funnel - shaped.

Fl. & Fr. : June - September.

Kangra (DD), Kinnaur (DD).

Throughout India.

Digitalis lanata Ehrh. Beitr. 7 : 23. 1792 ; Nair, Fl. Bash. Himal. 202. 1977.

Tall herbs. Lower lip of the flower white, upper yellow with purplish veins.

Fl. & Fr. : May August.

Chamba (BSD), Kinnaur (BSD), Kulu (BSD).

Cultivated.

Digitalis purpurea L. Sp. Pl. 621. 1753 ; Nair, Fl. Bash. Himal. 202. 1977.

Tall herbs. Flowers white with purple dots inside.

Fl. & Fr. : April August.

Chamba (RRL), Kangra (LWG), Kinnaur (BSD), Kulu (LWG), Simla (DD).

Cultivated.

Euphrasia alba Pennell in Acad. Nat. Sci. Phila. Monogr. 5 : 107. 1943.

Tall, erect herbs, pubescent throughout with reflexed white hairs. Leaf blades finely pilose. Flowers white with three yellow blotches in throat.

Fl. & Fr. : July August.

Chamba (BSD).

Western Himalaya.

Euphrasia flabellata Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 112. 1943.

Finely pubescent, decumbent, ascending or erect herbs. Flowers white with violet lines.

Fl. & Fr. : June - August.

Kinnaur (BSD), Lahul and Spiti (BSD).

Western Himalaya.

Euphrasia foliosa Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 109. 1943.

Tall, erect, branched, hairy herbs. Flowers white or lavender with yellow throat.

Fl. & Fr. : June August.

Chamba (BSD), Lahul and Spiti (BSD).

Western Himalaya.

Euphrasia himalayica Wettst. Monogr. Euphr. 180. Pl. 4. f. 291 - 296. 1896 ; Nair, Fl. Bash. Himal. 202. 1977.

Erect herbs. Flowers white.

Fl. & Fr. : July September.

Kinnaur (BSD), Kulu (BSD).

North Western Himalaya upto Bhutan.

Euphrasia jaeschkei Wettst. Monogr. Euphr. 80. t. 11. f. 5. 1896.

Erect, hairy herbs.

Fl. & Fr. : June August.

Chamba (DD), Lahul and Spiti (DD).

North Western Himalaya.

Euphrasia kashmiriana Pugsley in Journ. Bot. Lond. 74 : 283. 1936.

Erect, finely hairy herbs. Leaf margins thickened and puberulent with gland tipped hairs. Flowers purple violet with yellow throat.

Fl. & Fr. : July September.

Lahul and Spiti (BSD).

Western Himalaya.

Euphrasia multiflora Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 105. t. 13 B. 1943.

Much branched, finely villose with white reflexed hairs, Flowers pale with violet hood, finely pubescent externally. Capsule truncate or nearly so, distally pilose ciliate with slender hairs.

Fl. & Fr. : July - October.

Bashahr (Simla), Pennell, 1943 Type (No. 1212).

Himalaya, Himachal Pradesh to Nepal.

Temperate Himalaya.

Euphrasia paucifolia Wettst. Monogr. Euphr. 198. Pl. 12. f. 4. 1896.

Erect, hairy herbs with obscure, interspersed gland bearing hairs.

Fl. & Fr. : June - August.

Lahul and Spiti (BSD).

Western Himalaya.

Euphrasia platyphylla Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 102. t. 11. B. 1943.

Tall, erect, finely villous with reflexed white hairs, herbs. Flowers finely pubescent, white with violet lines and yellow throat.

Fl. & Fr. : July - August.

Lahul (Pennell, 1943).

Western Himalaya and Nepal.

Euphrasia remota Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 110. t. 16. B. 1943.

Erect, finely pubescent herbs. Flowers white, pale - violet with dark purple - violet lines.

Fl. & Fr. : June - August.

Lahul and Spiti (BSD).

Western Himalaya.

Euphrasia schlagintweitii Wettst. Monogr. Euphr. 181. t. 4. f. 296 - 300. 1896 ; Nair, Fl. Bash. Himal. 202. 1977.

Erect herbs. Flowers white with yellow throat.

Fl. & Fr. : May August.

Chamba (BSD), Kinnaur (BSD), Simla (DD).

Western Himalaya and Nepal.

Hemiphragma heterophyllum Wall. in Trans. Linn. Soc. 13 : 612. 1822 ; Hook. f. Fl. Brit. India 4 : 289. 1884 ; Collett, Fl. Siml. 355. 1902 ; Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 62. 1943.

Prostrate, hairy herbs. Leaves dimorphic, cauline opposite, shortly stalked, those on the branches fascicled, ciliate, sessile. Flowers pink.

Fl. & Fr. : May August.

Kinnaur (DD), Simla (DD).

Temperate Himalaya, Himachal Pradesh to Bhutan.

Kickxia incana (Wall.) Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 59. 1943 ; Nair, Fl. Bash. Himal. 202. 1977. *Linaria incana* Wall. Pl. Asiat. Rar. 2 : 43. 1831 ; Hook. f. Fl. Brit. India 4 : 252. 1883 ; Collett, Fl. Siml. 348. 1902.

Herbs covered with long, soft, white hairs. Flowers pubescent, dotted with purple, spurred.

Fl. & Fr. : June August.

Simla (BSD, DD).

Western and Central Himalaya.

Kickxia ramosissima (Wall.) Janchen in Ost. Bot. Zeitschr. 82 : 152. 1933. *Linaria ramosissima* Wall. Pl. Asiat. Rar. 2 : 43. t. 153. 1831 ; Hook. f. Fl. Brit. India 4 : 251. 1883 ; Collett, Fl. Siml. 347. 1902.

Prostrate, slightly pubescent or glabrous herbs. Leaves long stalked. Flowers yellow.

Fl. & Fr. : June September.

Chamba (DD), Kulu (DD).

Throughout India.

Lagotis cashmeriana (Royle ex Benth.) Ruprecht in Mem. Acad. Sci. St. Petersburg 7. 14 : 64. 1869 ; Pennell in Proc. Acad. Nat. Sci. Philad. Monogr. 5 : 68. 1943. *Gymnandra cashmeriana* Royle ex Benth. Scroph. Indicae 47. 1835. *Lagotis glauca* Gaertn. var. *cashmeriana* Hook. f. Fl. Brit. India 4 : 559. 1885.

Fleshy herbs with stout root stock and thick fleshy root fibers. Flowers deep blue.

Fl. & Fr. : June - September.

Chamba, Lahul and Spiti (Pennell, 1943).

Western Himalaya from Kashmir to Himachal Pradesh.

Lagotis kunawurensis (Royle ex Benth.) Ruprecht in Mem. Acad. Sci. St. Petersburg 7, 14 : 64. 1869 ; Pennell in Procd. Acad. Nat. Sci. Philad. Monogr. 5 : 68. 1943. *Gymnandra kunawurensis* Royle ex Benth. Scroph. Indiac 47. 1835. *Lagotis glauca* Gaertn. var. *kunawurensis* and var. *sikkimensis* Hook. f. Fl. Brit. India 4 : 560. 1885.

Fleshy herbs. Flowers purple. Capsule ovoid, rugose.

Fl. & Fr. : July - September.

Bashahr - Simla (vide Pennell, 1943).

Himalaya, Kashmir to Bhutan.

Lancea tibetica Hook. f. & Thoms. in Hook. f. Kew Journ. Bot. 9 : 244. t. 7. 1857 ; Hook. f. Fl. Brit. India 4 : 260. 1884.

Small, glabrous herbs. Leaves radical. Flowers sunk amongst the leaves. Flowers blue, lower lip hairy within.

Fl. & Fr. : May - July.

Lahul and Spiti (DD).

Alpine Himalaya and Western Tibet.

Lathraea squamaria L. Sp. Pl. 606. 1753 ; Hook. f. Fl. Brit. India 4 : 318. 1884 ; Collett, Fl. Siml. 363. 1902 ; Nair, Fl. Bash. Himal. 203. 1977.

Pale pink, leaf - less herbs, parasitic on the roots of trees. Stem fleshy, covered by closely set, thick, short scales. Flowers cream white, tipped with pink - purple.

Fl. & Fr. : April - June.

Simla (DD).

Western Himalaya.

Leptorhabdos parviflora (Benth.) Benth. in DC. Prodr. 10 : 510. 1846 ; Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 93. 1943. *Gerardia parviflora* Benth. in Wall. Numer. List. Spec. Ind. Mus. n. 3888. 1830. *L. linifolia* (Decne.) Walpers, Repert. Bot. Syst. 3 : 388. 1845 ; Hook. f. Fl. Brit. India 4 : 304. 1884. *L. benthamiana* Walpers, Repert. Bot. Syst. 3 : 387. 1844 ; Hook. f. Fl. Brit. India 4 : 303. 1884 ; Collett, Fl. Siml. 360. 1902.

Slender, stout herbs. Leaves sessile, pinnatisect. Flowers pale pink with bright yellow anthers.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur, BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD), Simla (DD).

Throughout Western Himalaya and Nepal.

Limosella aquatica L. Sp. Pl. 631. 1753 ; Hook. f. Fl. Brit. India 4 : 288. 1884.

Small tufted, creeping marsh or water herbs. Leaves long petioled. Flowers pink or white.

Fl. & Fr. : July August.

Chamba (BSD), Lahul and Spiti (BSD, DD).

Western Himalaya & and Western Tibet.

Limnophila connata (Buch. Ham. ex D. Don) Hand. - Mazz. Symb. Sin. 7 : 837. 1936. *Cybbanthera connata* Buch. - Ham. ex D. Don Prodr. Fl. Nepal. 87. 1825. *Limnophila hypercifolia* Benth. in DC. Prodr. 10 : 386. 1846 ; Hook. f. Fl. Brit. India 4 : 269. 1884 ; Collett, Fl. Siml. 352. 1902.

Erect, glabrous, marshy herbs. Leaves sessile, stem clasping. Flowers pink - purple, sessile, in the axil of leafy bracts.

Fl. & Fr. : July - September.

Kangra (DD).

Marshy places, throughout India.

Limnophila indica (L.) Druce in Rep. Bot. Exch. Club Brit. Isles 3 : 420. 1914 ; Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 26. 1943.

Hottonia indica L. Syst. Nat. ed. 10. 919. 1759. *Limnophila gratioloides* R. Br. Prodr. Fl. Nov. Holl. 442. 1810 ; Hook. f. Fl. Brit. India 4 : 271. 1884.

Erect diffusely branched, glabrous, aquatic herb. Leaves whorled, mostly pinnatifid.

Fl. & Fr. : May July.

Kangra (Pennell, 1943).

Throughout India in marshy or moist places.

Limnophila rugosa (Roth) Merr. Bur. Sci. Publ. Manila 9 : 466. 1917 ; Pennell, Acad. Nat. Sci. Philad. Monogr. 5 : 26. 1943. *Herpestis rugosa* Roth, Nov. Pl. Sp. 290. 1821. *Limnophila roxburghii* G. Don, Gen. Syst. 4 : 543. 1838 ; Collett, Fl. Siml. 352. 1902.

Aromatic, glabrous, tufted herbs. Flowers blue, mouth yellow, sessile, in head like spikes.

Fl. & Fr. : September November.

Simla (DD).

Throughout India.

Linaria cymbalaria (L.) Mill. Gard. Dict. ed. 8. n. 17. 1768 ; Nair, Fl. Bash. Himal. 203. 1977. *Antirrhinum cymbalaria* L. Sp. Pl. 612. 1953.

Fl. & Fr. : March July.

Simla (BSD, BSIP, DD, LWG).

Himalaya.

Lindenbergia indica (L.) Vitke in Oesterr. Bot. Zeitschr. 25 : 10. 1875 ; Nair, Fl. Bash. Himal. 203. 1977. *Dodartia indica* L. Sp. Pl. 883. 1753. *Lindenbergia urticifolia* Lehm. in Link & Otto, Ind. Sem. Hort. Berol. 5. 1829 ; Hook. f. Fl. Brit. India 4 : 262. 1884 ; Collett, Fl. Siml. 352. 1902. *Lindenbergia ruderalis* (Retz.) Voigt, Hort. Suburb. Calc. 501. 1845. *L. polyantha* Royle ex Benth. Scrop. Ind. 22. 1835 ; Hook. f. Fl. Brit. India 4 : 262. 1884.

Erect or decumbent ascending herbs. Stem glandular hairy, purple, tinged. Flowers yellow, corolla glandular hairy.

Fl. & Fr. : May - September.

Chamba (DD, RRL), Kangra (DD, RRL), Simla (DD).

Throughout India.

Lindenbergia grandiflora Benth. Scroph. Ind. 22. 1835 ; Hook. f. Fl. Brit. India 4 : 1884 ; Collett, Fl. Siml. 351. 1902.

Softly hairy, half climbing, rambling herbs. Flowers many, bright yellow, pubescent.

Fl. & Fr. : April - July.

Simla (DD).

Subtropical Himalaya.

Lindenbergia macrostachya (Benth.) Benth. Scroph. Ind. 22. 1835 ; Hook. f. Fl. Brit. India 4 : 262. 1884 ; Collett, Fl. Siml. 351. 1902 ; Nair, Fl. Bash. Himal. 203. 1977. *Stemodia macrostachya* Benth. Bot. Reg. 17. no. 1470. 1832.

Glabrous, erect herbs. Flowers on one sided, rigid, erect spikes.

Fl. & Fr. : April July.

Mandi (LWG).

Western Himalaya.

Lindenbergia ruderalis (Retz) Voigt, Hort. Suburb. Calcutta 501. 1845 ; Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 25. 1943. *Lindenbergia urticaefolia* Lehm. in Link and Otto, Ind. Sem. Hort. Hamburg. 1829 : 5. 1830 ; Hook. f. Fl. Brit. India 4 : 262. 1884.

Slender, glandularly villous, brittle herbs. Flowers solitary in the axils of large leaves, short pedicelled, yellow.

Fl. & Fr. : July October.

Chamba (Pennell, 1943).

Throughout India.

Lindernia anagallis (Burm. f.) Penn. in Journ. Arn. Arb. 24 : 252. 1943. *Ruellia anagallis* Burm. f. Fl. Indl. 35. 1768. *Vandellia pedunculata* Benth. Scroph. Ind. 37. 1835 ; Hook. f. Fl. Brit. India 4 : 282. 1884. *V. angustifolia* Benth. Scroph. Ind. 37. 1835 ; Hook. f. Fl. Brit. India 4 : 282. 1884.

Erect or decumbent ascending herbs. Flowers purple, yellow on the throat.

Fl. & Fr. : July September.

Kangra (BSD, DD).

Throughout India.

Lindernia ciliata (Colsmann) Pennell in *Proc. Acad. Nat. Sci. Philad. Monogr.* 5 : 32. 1943. *Gratiola ciliata* Colsmann, *Prodr. Desc. Grat.* 14. 1793. *Bonnaya brachiata* Link & Otto, *Jc. Pl. Sel. Brod.* 1 : 25. t. 11. 1820 ; Hook. f. *Fl. Brit. India* 4 : 284. 1884.

Erect, diffusely branched herbs. Leaves sessile, sharply and deeply serrate. Flowers red or white. Capsule slender.

Fl. & Fr. : June September.

Kangra (Pennell, 1943).

Throughout India.

Lindernia crustacea (L.) F. V. Mueller, *Cens. Austral. Pl.* 97. 1882. *Capraria crustacea* L. *Mant. Pl.* 1 : 87. 1767. *Vandellia crustacea* (L.) Benth. *Scroph. Ind.* 1835 ; Hook. f. *Fl. Brit. India* 4 : 279. 1884. Collett, *Fl. Siml.* 354. 1902 ; Nair, *Fl. Bash. Himal.* 207. 1977.

Caespitose, excessively branched, erect herbs. Flowers axillary, solitary, purple.

Fl. & Fr. : July September.

Chamba (DD).

Throughout India.

Lindernia nummularifolia (D. Don) Wettst. *Pflanzenfam.* 4 : 3b. 79. 1891. *Vandellia nummularifolia* D. Don, *Prodr. Fl. Nepal.* 86. 1825 ; Hook. f. *Fl. Brit. India* 4 : 282. 1884 ; Collett, *Fl. Siml.* 354. 1902.

Erect, glabrous herbs. Flowers in 1 to 4 - flowered, subumbellate racemes. Flowers whitish, tinged with purple, upper lip brown, lower lip white with a purple centre.

Fl. & Fr. : July September.

Chamba (BSD), Kinnaur (BSD), Kulu (BSD), Simla (DD).

Subtropical Himalaya.

Lindernia parviflora (Roxb.) Hains, Bot. Bihar & Orissa, 4 : 635. 1922 ; Nair, Fl. Bash. Himal. 204. 1977. *Gratiola parviflora* Roxb. Pl. Corom. 3 : 3. t. 204. 1819. *Ilysanthes parviflora* (Roxb.) Benth. in DC. Prodr. 10 : 419. 1846 ; Hook. f. Fl. Brit. India 4 : 283. 1884.

Erect, much branched, glabrous herbs. Flowers axillary, solitary, in a leafy raceme, white.

Fl. & Fr. : May - July.

Simla (BSD).

Throughout India.

Lindernia sessiliflora (Benth.) Wettst. Pflanzenfam. 4 : 3b. 79. 1891. *Vandellia sessiliflora* Benth. Scroph. Ind. 37. 1835 ; Hook. f. Fl. Brit. India 4 : 282. 1884.

Erect, branched, glabrous herbs. Flowers sub-sessile, in 1 to 4-flowered terminal clusters, white, upper lip brown, lower with a purplish centre.

Fl. & Fr. : June - September.

Kinnaur (DD), Kulu (BSD).

Subtropical Himalaya.

Mazus delavayi Bonati in Bull. Herb. Boiss. Ser. 2. 8 : 530. 1908 ; Nair, Fl. Bash. Himal. 204. 1977.

Small herbs. Flowers small, pale white.

Fl. & Fr. : May - July.

Simla (DD).

Himalaya, Kashmir to Bhutan.

Mazus harmandi Bonati in Bull. Herb. Boiss. Ser. 2. 8 : 533. 1908 ; Nair, Fl. Bash. Himal. 204. 1977.

Small herbs. Flowers small, in terminal, subsecund racemes.

Fl. & Fr. : May - August.

Simla (DD).

North - Western Himalaya.

Mazus pumilus (Burm. f.) Steen. Nova Guinea N.S. 9 : 31. 1958. *Lobelia pumila* Burm. f. Fl Ind. 186. t. 60. f. 3. 1768. *Mazus japonicus* (Thunb.) O. Ktze. Rev. Gen. Pl. 2 : 462. 1891 ; Nair, Fl. Bash. Himal. 204. 1977. *Lindernia japonica* Thunb. Fl. Jap. 253. 1784. *M. rugosus* Lour. Fl. Cochinch. 385. 1790 ; Hook. f. Fl. Brit. India 4 : 259. 1884 ; Collett, Fl. Siml. 351. 1902.

Erect, tufted herbs. Flowers pale blue or white streaked with blue.

Fl. & Fr. : April - October.

Chamba (BSD), Kangra (RRL), Kinnaur (BSD), Kulu (DD, LWG), Simla (LWG).

Temperate and subtropical Himalaya.

Mazus surculosus D. Don, Prodr. Fl. Nepal. 87. 1825 ; Hook. f. Fl. Brit. India 4 : 260. 1884 ; Collett, Fl. Siml. 351. 1902 ; Nair, Fl. Bash. Himal. 204. 1977.

Erect, tufted herbs, rooting at the joints. Flowers pale blue or white.

Fl. & Fr. : May - August.

Chamba (BSD, DD, LWG), Kinnaur (BSD, DD), Kulu (BSD, DD, LWG), Simla (BSD, DD).

Temperate Himalaya.

Mimulus strictus Benth. Scroph. Ind. 28. 1835. *Mimulus gracilis* Hook. f. Fl. Brit. India 4 : 259. 1884 (non R. Br. 1810) ; Collett, Fl. Siml. 350. 1902.

Erect, glabrous herbs. Leaves somewhat fleshy. Flowers white or pale blue.

Fl. & Fr. : May - June.

Chamba (DD), Kangra (DD).

Western Himalaya.

Pedicularis albida Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 123. 1943.

Herbs with thick roots and villous stem. Flowers white - purplish.

Fl. & Fr. : July August.

Lahul and Spiti (DD).

Western Himalaya.

Pedicularis bicornuta Kl. in Reise Pr. Waldens. Bot. 109 : t. 61. 1862 ; Hook. f. Fl. Brit. India 4 : 312. 1884.

Hirsute or pubescent, tall, erect herbs. Flowers yellow, calyx lobes crested, upper lip produced into a slender, curved, bifid tail.

Fl. & Fr. : June August.

Chamba (DD), Lahul and Spiti (BSD, DD).

Western alpine Himalaya and Western Tibet.

Pedicularis bifida (Buch. Ham. ex D. Don) Pennell, Acad. Nat. Sci. Philad. Monogr. 5 : 144. 1943. *Rhinanthus bifidus* Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 94. 1825. *Pedicularis carnosus* Wall. Pl. Asiat. Rar. 2 : 44. t. 154 1831 ; Hook. f. Fl. Brit. India 4 : 313. 1884 ; Collett, Fl. Siml. 362. 1902.

Roughly pubescent, erect herbs. Flowers bright pink, purple, in racemes.

Fl. & Fr. : August September.

Kangra (DD), Simla (DD).

Temperate Himalaya, Himachal Pradesh to Assam.

Pedicularis brevifolia D. Don, Prodr. Fl. Nepal. 94. 1825 ; Hook f. Fl. Brit. India 4 : 307. 1884 ; Nair ; Fl. Bash. Himal. 204. 1977.

Pubescent or villous, erect herbs. Flowers purple, upper lip falcate with a long straight or decurved beak.

Fl. & Fr. : July September.

Kinnaur (BSD), Lahul and Spiti (DD).

Alpine Himalaya, Kashmir to Nepal.

Pedicularis brunoniana Wall. ex Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 128. 1943.

Decumbent, pubescent herbs. Leaves finely pubescent with white lanulose midrib. Flowers purple.

Fl. & Fr. : June August.

Kinnaur (DD).

Western Himalaya.

Pedicularis gracilis Wall. ex Benth. Scroph. Ind. 52. 1835 ; Hook. f. Fl. Brit. India 4 : 307. 1884 ; Collett, Fl. Siml. 362. 1902 ; Nair, Fl. Bash. Himal. 205. 1977.

Tall, slender, branched herbs. Flowers racemed, purple.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Mandi (DD), Simla (BSD, DD).

Temperate and alpine Himalaya.

Pedicularis hoffmeisteri Klotzsch & Garcke in Reise Pr. Waldemar Bot. 108. t. 60. 1862 ; Nair, Fl. Bash. Himal. 205. 1977. *P. megalantha* D. Don, Prodr. Fl. Nepal. 94. 1825 ; Hook. f. Fl. Brit. India 4 : 312. 1884 ; Collett, Fl. Siml. 361. 1902. *P. siphonantha* Hook. f. Fl. Brit. India 4 ; 313. 1884 *p. p.*

Tall, pubescent herbs. Flowers racemed, bright yellow, calyx hairy.

Fl. & Fr. : July August.

Chamba (DD), Kinnaur (DD), Kulu (BSD, DD), Simla (DD).

Alpine and temperate Himalaya, Himachal Pradesh to Nepal.

Pedicularis hookeriana Wall. ex Benth. Scrop. Indicae 53. 1835 ; Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 155. 1943. *P. siphonantha* D. Don, Prodr. Fl. Nepal. 95. 1825 sensu Hook. f. Fl. Brit. India 4 : 313. 1884.

Sparsely pubescent or hirsute herbs. Flowers pink.

Fl. & Fr. : June August.

Kinnaur (DD).

North Western and Central Himalaya and Sikkim.

Pedicularis longiflora Rudolph var. *tubiformis* (Klot.) Pennell Acad. Nat. Sci. Philad. Monogr. 5 : 150. 1943 ; Nair, Fl. Bash. Himal. 205. 1977. *P. tubiformis* Klotzsch & Garcke in Reise Pr. Waldemar Bot. 106.

t. 57. 1862. *P. tubiflora* Klotzsch & Garcke in Reise Pr. Waldemar Bot. 106. t. 57. 1862. *P. tubiflora* Hook. f. Fl. Brit. India 4 : 314. 1884. (non Fisch.)

Glabrous, tufted herbs. Flowers bright yellow with dark spots on the lower lip.

Fl. & Fr. : July September.

Kinnaut (BSD), Lahul and Spiti (BSD, DD, RRL).

Alpine Himalaya and Western Tibet.

Pedicularis macrantha Klotzsch & Garcke in Reise Pr. Waldemar Bot. 107. t. 58. 1862 ; Hook. f. Fl. Brit. India 4 : 311. 1884.

Glabrous, erect herbs. Flowers axillary, large, pink, upper lip sickle-shaped.

Fl. & Fr. : June August.

Kulu (BSD).

Western and Central Himalaya.

Pedicularis mollis Wall. ex Benth. Scroph. Ind. 53. 1835 ; Hook. f. Fl. Brit. India 4 : 309. 1884 ; Nair, Fl. Bash. Himal. 205. 1977.

Tall, stout, erect, hirsute herbs. Flower dark pinkish purple, upper lip narrow, straight.

Fl. & Fr. : July September.

Kinnaur (BSD, DD), Kulu (BSD).

Alpine Himalaya and Western Tibet.

Pedicularis oederi Vahl in Hornem. Dansk. Oek. Plant. ed. 2. 580. 1806. *P. versicolor* Wahlb. Veg. Helvet. 118. 1813 ; Hook. f. Fl. Brit. India 4 : 316. 1884.

Hirsute, small herbs. Flowers lemon yellow.

Fl. & Fr. : July August.

Chamba (DD), Lahul and Spiti (DD).

Alpine Himalaya.

Pedicularis pectinata Wall. ex Benth. Scroph. Ind. 52. 1835 ; Hook. f. Fl. Brit. India 4 : 306. 1884 ; Collett, Fl. Siml. 361. 1902.

Stout, glabrous herbs with hairy spikes. Flowers pink or rose red, upper lip inflated, sickle shaped.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kangra (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (BSD, DD, RRL), Simla (DD).

Western temperate Himalaya and Nepal.

Pedicularis pectinata Wall. ex Benth. var. *bipinnatifida* Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 134. 1943.

Decumbent herbs with pinnatisect leaf-blades. Flowers fragrant, purple with white throat.

Fl. & Fr. : July - August.

Chamba (DD), Lahul and Spiti (DD).

Western Himalaya.

Pedicularis porrecta Wall. ex Benth. Scroph. Ind. 52. 1835 ; Hook. f. Fl. Brit. India 4 : 307. 1884 ; Nair, Fl. Bash. Himal. 205. 1977.

Short, glabrous herbs. Flowers on pubescent racemes, pink.

Fl. & Fr. : July - September.

Kulu (BSD), Lahul and Spiti (BSD), Simla (BSD).

Alpine Himalaya.

Pedicularis punctata Decne. in Jacquem. Voy. Inde. Bot. 117. pl. 122. 1844 ; Nair, Fl. Bash. Himal. 205. 1977. *P. siphonantha* Hook. f. Fl. Brit. India 4 : 314. 1884 *p p.*

Sparsely pubescent or glabrate herbs. Flowers rose - pink.

Fl. & Fr. : July - September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD, RRL).

Alpine Himalaya.

Pedicularis purpurea Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 125. 1943.

Finely villous herbs with thick roots. Flowers purple with pale throat.

Fl. & Fr. : June August.

Chamba (DD), Lahul and Spiti (DD).

Western Himalaya.

Pedicularis pycnantha Boiss. Diagn. Ser. 1 : 12 : 45. 1853 ; Hook. f. Fl. Brit. India 4 : 310. 1884.

Short, stout, sparsely hairy or glabrous herbs. Flowers on oblong spikes, pink, upper lip linear, straight.

Fl. & Fr. : June July.

Lahul and Spiti (DD).

North Western Himalaya.

Pedicularis pyramidata Royle in Benth. Scroph. Ind. 52. 1835. *P. pectinata* Wall. ex Benth. var. *pyramidata* (Royle) Hook. f. Fl. Brit. India 4 : 306. 1884.

Tall, stout herbs with 4 fariously hairy stem. Flowers rose pink, on a long spike.

Fl. & Fr. : June August.

Kulu (DD), Lahul and Spiti (DD).

Western Himalaya.

Pedicularis rhinanthoides Schrenk in Fisch. & Mey. Enum. Pl. Nov. 1 : 22. 1841 ; Hook. f. Fl. Brit. India 4 : 314. 1884 ; Nair, Fl. Bash. Himal. 206. 1977.

Short, glabrous herbs. Flowers pale or bright pink, upper lip sickle shaped, inflated in the middle.

Fl. & Fr. : June September.

Lahul and Spiti (DD).

Alpine Himalaya and Western Tibet.

Pedicularis rhinanthoides* ssp. *labellata (Jacquem.) Prain in Ann. Bot. Gard. Calc. 3 : 110. 1890. *P. labellata* Jacquem. Voy. Bot. Inde. 118. t. 123. 1844.

Glabrous herbs.

Fl. & Fr. : July September.

Chamba (DD), Kangra (DD), Kinnaur (DD), Lahul and Spiti (DD).
Alpine Himalaya.

Pedicularis rhinanthoides Schrenk ssp. *speciosa* Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 152. 1943.

Slightly pubescent herbs. Flowers rose purple.

Fl. & Fr. : July August.

Lahul and Spiti (DD).

Western Himalaya.

Pedicularis roylei Maxim. in Bull. Acad. Petersb. 27 : 517. 1881 ;
Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 119. 1943.

Erect herbs. Flowers pale purple to pink.

Fl. & Fr. : July August.

Chamba (DD), Kulu (DD), Lahul and Spiti (DD).

Himalaya, Kashmir to Bhutan.

Pedicularis stewartii Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 135. 1943.

Pubescent herbs. Leaves whorled. Flowers purple.

Fl. & Fr. : July September.

Chamba (DD).

Western Himalaya.

Pedicularis svenhedini Paulsen in Sven Hedin, South. Tib. 6 (3) : 44.
f. 27. pl. 7. 1921.

Fl. & Fr. : June August.

Chamba (DD).

Western Himalaya.

Pedicularis tenuirostris Benth. Scroph. Ind. 52.1835 ; Hook. f. Fl. Brit. India 4 : 307. 1884 ; Nair, Fl. Bash. Himal. 206. 1977.

Tall, erect, glabrous herbs. Flowers in dense spikes, yellow, upper lip much inflated at the base.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur (BSD), Lahul and Spiti (DD).

Western Himalaya.

Picrorhiza kurrooa Royle ex Benth. Scroph. Ind. 47. 1835 ; Hook. f. Fl. Brit. India 4 : 290. 1884.

Small, hairy herbs with a woody root stock clothed with leaf bases. Leaves coriaceous - with winged, sheathing petiole. Flowers white - bluish.

Fl. & Fr. : June - September.

Chamba (BSD, DD, RRL), Kinnaur (DD), Kulu (BSD, DD, RRL), Lahul and Spiti (BSD, DD).

Alpine Himalaya.

Scrophularia calycina Benth. Scroph. Ind. 18. 1835 ; Hook. f. Fl. Brit. India 4 : 253. 1883 ; Collett, Fl. Siml. 349. 1902 ; Nair, Fl. Bash. Himal. 206. 1977.

Erect herbs. Flowers in shortly stalked cymes forming a stiff, narrow panicle, white.

Fl. & Fr. : June - September.

Chamba (DD), Kulu (BSIP), Lahul and Spiti (BSD, DD), Simla (BSD, DD).

Western Himalaya and Nepal.

Scrophularia decomposita Royle ex Benth. Scroph. Ind. 18. 1835 ; Nair, Fl. Bash. Himal. 206. 1977. *S. lucida* Hook. f. Fl. Brit. India 4 : 256. 1884 (non L.).

Glandular pubescent herbs. Leaves 1-2 pinnatisect.

Fl. & Fr. : May July.

Chamba (BSD, DD), Kangra (BSD), Kulu (DD). Lahul and Spiti (RRL), Mandi (BSIP).

Western Himalaya and Nepal.

Scrophularia decomposita ssp. *latifolia* (Benth.) Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 56. 1943. *S. griffithii* var. *latifolia* Benth. in DC. Prodr. 10. 312. 1846 ; *S. scopoli* Hook. f. Fl. Brit. India 4 : 254. 1884 (non Hoppe.).

Stout glabrous or sparsely pubescent herbs. Flowers in stiff, stout cymes, greenish - white.

Fl. & Fr. : May - July.

Mandi (BSIP).

Western Himalaya.

Scrophularia dentata Royle. ex Benth. *Scroph. Ind.* 19. 1835 ; Hook. f. *Fl. Brit. India* 4 : 256. 1884.

Stout, glabrous herbs, black when dry. Flowers in short, erect cymes.

Fl. & Fr. : May - July.

Lahul and Spiti (DD).

Western Himalaya.

Scrophularia edgeworthii Benth. in DC. *Prodr.* 10 : 304. 1846 ; Hook. f. *Fl. Brit. India* 255. 1883 ; Nair, *Fl. Bash. Himal.* 206. 1977.

Tall, glandular puberulous herbs up to 2 m high. Cymes long peduncled.

Fl. & Fr. : May - July.

Lahul and Spiti (BSD).

Western Himalaya.

Scrophularia himalensis Royle ex Benth. *Scroph. Ind.* 18. 1835 ; Hook. f. *Fl. Brit. India* 4 : 255. 1883 ; Collett, *Fl. Siml.* 349. 1902 ; Nair, *Fl. Bash. Himal.* 207. 1977.

Tall, glandular pubescent herbs. Flowers few, greenish on long peduncled, loosely spreading cymes.

Fl. & Fr. : June - October.

Chamba (BSD), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (BSD, DD).

Western Himalaya.

Scrophularia koelzii Pennell in *Acad. Nat. Sci. Philad. Monogr.* 5 : 52. 1943 ; Nair, *Fl. Bash. Himal.* 207. 1977. *S. variegata* Hook. f. *Fl. Brit. India* 4 : 256. 1883 (non M. B.).

Glabrous or glandular - puberulous herbs. Leaves coriaceous, deeply cut.

Fl. & Fr. : July September.

Chamba (BSD, DD), Kinnaur (DD), Lahul and Spiti (BSD).

Western Himalaya and Nepal.

Scrophularia polyantha Royle ex Benth. Scroph. Ind. 18. 1835 ;
Hook. f. Fl. Brit. India 4 : 255. 1883 ; Nair, Fl. Bash. Himal. 207. 1977.

Tall, stout, viscidly puberulous above and glabrous below herbs.
Flowers greenish with upper purplish lip.

Fl. & Fr. : May September.

Chamba (DD), Kinnaur (BSD, DD), Simla (DD).

Western Himalaya.

Scrophularia scabiosaefolia Benth. in DC. Prodr. 10 : 311. 1846 ;
Hook. f. Fl. Brit. India 4 : 256. 1883 ; Nair, Fl. Bash. Himal. 207. 1977.

Glabrous herbs. Flowers very small, purplish white.

Fl. & Fr. : June August.

Chamba (BSD, DD), Lahul and Spiti (BSD, DD).

North - Western India and Western Tibet.

Scrophularia suffruticosa Pennell in Acad. Nat. Sci. Philad. Monogr.
5 : 53. 1943.

Finely glandular pubescent woody herbs with woody roots. Leaves
finely glandular - pubescent.

Fl. & Fr. : May July.

Lahul and Spiti (BSD).

Endemic to Himachal Pradesh.

Sopubia trifida Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 88.
1825 ; Hook. f. Fl. Brit. India 4 : 302. 1884 ; Collett, Fl. Siml. 359. 1902 ;
Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 95. 1943.

Slender, roughly pubescent, erect herbs. Flowers yellow, calyx bell -
shaped, woolly inside.

Fl. & Fr. : July October.

Kinnaur (DD), Simla (BSD, DD).

Temperate and subtropical Himalaya.

Striga asiatica (L.) O. Ktze. Rev. Gen. & Sp. Pl. 1 : 466. 1891 ; Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 96. 1943. *Buchnera asiatica* L. Sp. Pl. 630. 1753. *Striga lutea* Fl. Cochinch. 22. 1790 ; Hook. f. Fl. Brit. India 4 : 299. 1844 ; Collett, Fl. Siml. 358. 1902.

Erect, slender, roughly bristly herbs. Leaves sessile, linear, hispidly pilose. Flowers in leafy, terminal spikes, yellow.

Fl. & Fr. : May - August.

Chamba (DD), Simla (DD).

Throughout India.

Torenia cordifolia Roxb. Pl. Coromandel 2 : 52. pl. 161. 1798 ; Hook. f. Fl. Brit. India 4 : 276. 1884 ; Collett, Fl. Siml. 353. 1902 ; Nair, Fl. Bash. Himal. 207. 1977.

Erect, hairy herbs. Leaves opposite, sharply toothed. Flowers pale-lilac or blue-purple, corolla tube curved.

Fl. & Fr. : July - October.

Chamba (DD), Kangra (BSD), Simla (DD).

Throughout India.

Vandellia ciliata (Colsm.) Yamazaki in Journ. Jap. Bot. 30 : 176. 1955. *Gratiola ciliata* Colsmann, Prodr. Descr. Gratiola 1 : 14. 1793. *Bonnaya brachiata* Link et Otto, Icon. Pl. Select. Berol. 1 : 25. 1820 ; Hook. f. Fl. Brit. India 4 : 284. 1884 ; Collett, Fl. Siml. 354. 1902.

Erect, diffusely branched, glabrous herbs. Flowers white, tinged or spotted with pink.

Fl. & Fr. : July - October.

Kangra (RRL).

Throughout India.

Verbascum chinense (L.) Santapau, Fl. Purandhar 90 : 1. 1958. *Scrophularia chinense* L. Mant. Pl. 2 : 250. 1771. *Celsia coromandeliana* Vahl, Symb. Bot. 3 : 79. 1794 ; Hook. f. Fl. Brit. India 4 : 251. 1883. *Verbascum coromandelianum* (Vahl) O. Ktze. Rev. Gen. & Sp. Pl. 1 : 468. 1891.

Erect, glandular - pubescent herbs. Leaves in a rosette, lyrate pinnatifid. Flowers in glandular hairy racemes, yellow.

Fl. & Fr. : April - August.

Lahul and Spiti (DD), Mandi (BSD), Sirimur (BSD).

Throughout India.

Verbascum thapsus L. Sp. Pl. 177. 1753 ; Hook. f. Fl. Brit. India 4 : 250. 1883 ; Collett, Fl. Siml. 347. 1902 ; Nair, Fl. Bash. Himal. 208. 1977.

Erect, densely stellate tomentose herbs. Basal leaves in a rosette, densely tomentose. Flowers in dense, tomentose, spicate racemes, yellow, corolla pubescent outside.

Fl. & Fr. : April - September.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD, RRL), Lahul and Spiti (BSD, DD, RRL), Mandi (LWG), Simla (BSD, DD, LWG).

Temperate Himalaya.

Veronica agrestis L. Sp. Pl. 13. 1753 ; Hook. f. Fl. Brit. India 4 : 294. 1884 ; Collett, Fl. Siml. 357. 1902 ; Nair, Fl. Bash. Himal. 208. 1977.

Procumbent, pubescent herbs. Flowers blue or white, streaked purple inside. Capsule notched.

Fl. & Fr. : May - August.

Chamba (BSD), Kangra (RRL), Kinnaur (BSD), Kulu (BSD, BSIP), Lahul and Spiti (DD).

Northern India and Western Tibet.

Veronica anagallis aquatica L. Sp. Pl. 12. 1753 ; Hook. f. Fl. Brit. India 4 : 293. 1884 ; Collett, Fl. Siml. 356. 1902 ; Nair, Fl. Bash. Himal. 208. 1977.

Succulent, glabrous herbs. Leaves stem clasping. Flowers pale-purple or white. Capsule notched.

Fl. & Fr. : May - September.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSIP), Lahul and Spiti (BSD, DD), Simla (DD).

Throughout India.

Veronica arvensis L. Sp. Pl. 13. 1753 ; Hook. f. Fl. Brit. India 4 : 296. 1884 ; Collett, Fl. Siml. 358. 1902 ; Nair, Fl. Bash. Himal. 208. 1977.

Pubescent or glandular hairy herbs. Leaves nearly sessile. Flowers minute, pale blue. Capsule glandular hairy, notched.

Fl. & Fr. : May August.

Chamba (DD), Kinnaur (DD), Simla (BSIP).

Western Himalaya.

Veronica beccabunga L. Sp. Pl. 12. 1753 ; Hook. f. Fl. Brit. India 4 : 293. 1884 ; Nair, Fl. Bash. Himal. 208. 1977.

Glabrous, decumbent, succulent herbs growing in marshy places. Flowers blue or pink. Capsule notched.

Fl. & Fr. : June September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD).

Western Himalaya and Nepal.

Veronica biloba L. Mant. Pl. 172. 1771 ; Hook. f. Fl. Brit. India 4 : 294. 1884 ; Collett, Fl. Siml. 357. 1902 ; Nair, Fl. Bash. Himal. 209. 1977.

Diffusely branched, pubescent herbs. Leaves sessile, lanceolate. Flowers blue. Capsule deeply lobed.

Fl. & Fr. : June September.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (DD, RRL), Simla (DD).

Western Himalaya, Nepal and Western Tibet.

Veronica cana Wall. ex Benth. Scroph. Ind. 45. 1835 ; Hook. f. Fl. Brit. India 4 : 295. 1884 ; Collett, Fl. Siml. 357. 1902 ; Nair, Fl. Bash. Himal. 209. 1977.

Grey pubescent, erect unbranched herbs. Leaves stalked, ovate, crenate. Flowers blue. Capsule triangular, notched.

Fl. & Fr. : June August.

Simla (DD).

Temperate Himalaya.

Veronica capitata Benth. Scroph. Ind. 45. 1835 ; Hook. f. Fl. Brit. India 4 : 295. 1884.

Short, suberect, pubescent herbs. Leaves sessile, pubescent. Flowers in terminal, sessile, villous umbels or heads, blue. Capsule obcordate, ciliate.

Fl. & Fr. : May July.

Chamba (DD), Kinnaur (DD), Simla (DD).

Alpine Himalaya.

Veronica hirta Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 84. 1943.

Pubescent herbs with somewhat rhizomatous roots. Leaves pilose - pubescent. Flowers purple.

Fl. & Fr. : June - August.

Kulu (DD), Lahul and Spiti (DD).

Western Himalaya.

Veronica javanica Blume, Bijdr. 742. 1826 ; Hook. f. Fl. Brit. India 4 : 296. 1884 ; Collett, Fl. Siml. 357. 1902.

Branched, pubescent herbs. Flowers blue in axillary racemes. Capsule heart shaped, notched.

Fl. & Fr. : May July.

Chamba (DD).

Himalaya, Himachal Pradesh to Bhutan.

Veronica koelzii Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 82. 1943.

Bifariously pubescent herbs with rhizomatous roots. Flowers violet-purple.

Fl. & Fr. : July September.

Lahul and Spiti (BSD, DD).

Western Himalaya.

Veronica lanosa Royle ex Benth. Scroph. Ind. 45. 1835. *Veronica deltigera* Wall. ex Benth. Scroph. Ind. 45. 1835 ; Hook. f. Fl. Brit. India 4 : 292. 1884 ; Nair, Fl. Bash. Himal. 109. 1977.

Pubescent herbs. Flowers bright violet blue.

Fl. & Fr. : July September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD).

Western Himalaya.

Veronica lasiocarpa Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 75. 1943.

Lanulose, decumbent, rhizomatous herbs. Flowers white, deep blue violet.

Fl. & Fr. : June August.

Lahul and Spiti (BSD, DD).

North - Western Himalaya.

Veronica melissifolia Desf. ex Poir, Encycl. Meth. Bot. 8 : 526. 1808. *V. laxa* Benth. Scroph. Ind. 45. 1835 ; Hook. f. Fl. Brit. India 4 : 295. 1884 ; Collett, Fl. Siml. 357. 1902 ; Nair, Fl. Bash. Himal. 209. 1977.

Weak, pubescent, ascending herbs. Leaves sessile. Flowers blue capsule notched.

Fl. & Fr. : July - August.

Chamba (DD).

Western Himalaya.

Veronica persica Poir in Lam. Encycl. Meth. Bot. 8 : 542. 1808 ; Hook. f. Fl. Brit. India 4 : 294. 1884.

Prostrate, hairy herbs. Flowers bright blue.

Fl. & Fr. : May - August.

Chamba (BSD), Kulu (BSD, DD).

Western Himalaya and Nepal.

Veronica salina Schur. Enum. Pl. Transsylv. 492. 1866 ; Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 90. 1943.

Herbs. Flowers pale purple.

Fl. & Fr. : June - August.

Kinnaur (BSD), Lahul and Spiti (BSD, DD).

Western Himalaya.

Veronica serpyllifolia L. Sp. Pl. 12. 1753 ; Hook. f. Fl. Brit. India 4 : 296. 1884 ; Collett, Fl. Siml. 358. 1902 ; Nair, Fl. Bash. Himal. 209. 1977.

Glandular - pubescent herbs. Flowers white or lilac. Capsule pubescent, notched.

Fl. & Fr. : May - August.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (DD), Simla (DD).

Temperate and subalpine Western Himalaya.

Veronica stewartii Pennell in Acad. Nat. Sci. Philad. Monogr. 5 : 81. 1943. *V. hederifolia* Hook. f. Fl. Brit. India 4 : 294. 1884 (non L.).

Prostrate, hairy herbs. Flowers pale blue. Capsule biglobose.

Fl. & Fr. : May - July.

Kinnaur (BSD, DD),

Kashmir and Himachal Pradesh.

Veronica undulata Wall. in Roxb. Fl. Ind. 1 : 147. 1820. *V. anagallis* L. sensu Hook. f. Fl. Brit. India 4 : 293. 1884 *p. p.*

Erect herbs. Flowers purplish pink.

Fl. & Fr. : May July.

Simla (DD).

North Western India and Himalaya Kashmir to Sikkim.

Veronica verna L. Sp. Pl. 14. 1753 ; Hook. f. Fl. Brit. India 4 : 296. 1884 ; Nair, Fl. Bash. Himal. 209. 1977.

Erect, slender, puberulous herbs. Flowers small, pale blue. Capsule glandular.

Fl. & Fr. : May July.

Chamba (DD), Lahul and Spiti (DD), Simla (DD).

Western Himalaya.

Wulfenia amherstiana Wall. ex Benth. Scroph. Ind. 46. 1835 ; Hook. f. Fl. Brit. India 4 : 291. 1884 ; Collett, Fl. Siml. 356. 1902 ; Nair, Fl. Bash. Himal. 210. 1977.

Glabrous herbs. Leaves crowded at the base. Flowers drooping, blue purple to white, in a spike like raceme.

Fl. & Fr. : May September.

Chamba (DD), Kinnaur (BSD, DD, RRL), Kulu (BSD, DD), Simla (DD).

Western Himalaya and Nepal.

SELAGINACEAE

B.M. WADHWA AND H.J. CHOWDHERY

Lagotis blatteri E. Schulz. in Fedde. Repert. 31 : 161. t. 134. 1933. *Lagotis stolonifera* (non Maxim. 1881) Hook. f. Fl. Brit. India 4 : 558. 1885 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 649. 1972. *Gymnan-dra stolonifera* (non Koch) Aitch. in Journ. Linn. Soc. 18 : 85. 1880.

Stoloniferous herb. Leaves narrow.

Fl. & Fr. : July August.

Lahul and Spiti (RRL).

North Western Himalaya.

Lagotis cashmeriana (Royle) Rupr. Mem. Acad. Sci. St. Petersburg, 7, 14 (4) : 64. 1869 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 649. 1972. *L. glauca* var. *cashmeriana* Hook. f. Fl. Brit. India 4 : 559. 1885. *Gymnandra cashmeriana* Royle in Benth. Scroph. Ind. 47. & Ill. Bot. Himal. Mount. 291. t. 73. f. 3. 1835.

Rootstock stout, with thick fleshy root fibres. Radical leaves elliptic or oblong, obtuse. Bracts rather longer than the calyx.

Fl. & Fr. : June September.

Chamba (DD), Lahul and Spiti (DD, RRL).

Western Himalaya.

Lagotis glauca Gaertn. in Nov. Comm. Petrop. 14 : 538. t. 18. f. 2. 1770 ; Hook. f. Fl. Brit. India 4 : 559. 1885.

Rootstock stout. Leaves fleshy, variable in breadth and toothing. Flowering stems several.

Fl. & Fr. : May September.

Chamba (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD).

Alpin Himalaya.

Lagotis kunawurensis (Royle ex Benth.) Rupr. in Mem. Acad. Sci. St. Pet. ser. 7. 14 : 64. 1869. *Gymnandra kunawurensis* Royle ex Benth. Scroph. Ind. 47. 1835 ; Royle, Ill. Bot. Himal. Mount. 291. t. 73. 1836. *Lagotis glauca* var. *kunawurensis* (Royle ex Benth.) Hook. f. Fl. Brit. India 4 : 560. 1885 including var. *sikkimensis*.

Fleshy herbs with stout root stock. Flower purple.

Kinnaur (Hook. f.).

Himalaya.

OROBANCHACEAE

B.M. WADHWA AND H.J. CHOWDHERY

Orobanche alba Steph. ex Willd. Sp. Pl. 3 : 350. 1800 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 671. 1972 ; Jafri in Fl. W. Pak. 98 : 23.

1976. *O. epithymum* DC. Fl. Franc. 3 : 490. 1805 ; Hook. f. Fl. Brit India 4 : 325. 1884 ; Collett, Fl. Siml. 363. 1902 ; Blatter, Beaut. Fl. Kash. 2 : 69. t. 4. f. 2. 1928.

Annual or biennial, glandular pubescent, brownish, root parasite, herbs. Flowers in spikes which are lax below, companulate curved above at the back, pale - orange to redish brown.

Fl. & Fr. : July - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD, RRL).

Western Himalaya and Nepal.

Orobanche caesia Reichenb. Ic. Fl. Germ. 7 : 48. t. 936. 1829 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 671. 1972 ; Jafri in Fl. W. Pak. 98 : 12. 1976. *O. borealis* Turcz. in Bull. Soc. Nat. Mosc. 420. 1842 ; Hook. f. Fl. Brit. India 4 : 325. 1884 ; Blatter, Beaut. Fl. Kash. 2 : 70. 1928.

Perennial root parasite herbs. Stem often simple, nearly hairy. Spikes densely flowered. Flowers tubulose, infundibuliform, bluish, somewhat constricted above, ovary at the insertion point of the stamens, expanded above, oblique to erect.

Fl. & Fr. : August - October.

Lahul and Spiti (DD).

Western Himalaya and Western Tibet.

LENTIBULARIACEAE

B.M. WADHWA AND H.J. CHOWDHERY

Utricularia aurea Lour. Fl. Cochinch 1 : 26. 1790 ; Stewart, Ann. Cat. Vas Pl. W. Pak. & Kash. 67. 1972. *U. flexuosa* Vahl. Enum. 1 : 198 : 1804 ; Clarke in Hook. f. Fl. Brit. India 4 : 329. 1884.

Herb. Flowers pedicelled, yellow.

Chamba (DD), Kinnaur (BSD).

Throughout India.

Utricularia minor L. Sp. Pl. 18. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 330. 1884 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 673. 1972.

Herb. Flowers yellow. Capsule globose, as long as the calyx.

Lahul and Spiti (BSD).

Alpine Western Himalaya.

GESNERIACEAE

B.M. WADHWA AND H.J. CHOWDHERY

Chirita bifolia D. Don, Prodr. Fl. Nep. 90. 1825 ; Clarke in Hook. f. Fl. Brit. India 4 : 357. 1884 ; Collett, Fl. Siml. 366. 1902 ; Nair, Fl. Bash. Himal. 210. 1977.

Herbs. Leaves 2, one larger, sessile. Flowers blue, yellow inside.

Fl. & Fr. : July - September.

Kangra (DD), Simla (DD).

Temperate Western Himalaya upto Bhutan.

Chirita pumila D. Don, Prodr. Fl. Nep. 90. 1825 ; Clarke in Hook. f. Fl. Brit. India 4 : 357. 1884 ; Collett, Fl. Siml. 366. 1902 ; Nair, Fl. Bash. Himal. 210. 1977.

Herbs. Leaves petioled. Flowers bluish, tinged with yellow.

Fl. & Fr. : August - October.

Kinnaur (DD), Simla (DD).

Subtropical Himalaya, Himachal Pradesh to Assam.

Coraliodiscus lanuginosus (Wall. ex DC.) B. L. Burt in Gard. Chron. ser. 3. 122 : 212. 1947 ; Nair, Fl. Bash. Himal. 210. 1977. *Didymocarpus lanuginosus* Wall. ex DC. Prodr. 9 : 268. 1845. *Didissandra lanuginosa* (Wall. ex DC.) Clarke in Hook. f. Fl. Brit. India 4 : 355. 1884 ; Collett, Fl. Siml. 365. 1902.

Acaulescent herb. Leaves radical, scapes tufted. Flowers white to bluish - white.

Fl. & Fr. : June - October.

Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya.

Didymocarpus pedicellatus R. Br. in Benn. Fl. Java Rar. 118. 1840 ; Clarke in Hook. f. Fl. Brit. India 4 : 345. 1884.

Usually stemless herbs. Leaves opposite, unequal sided. Flowers purple.

Fl. & Fr. : July - January.

Chamba (Hook. f.).

Subtropical Himalaya.

Platystemma violoides Wall. Pl. As. Rar. 2 : 42. t. 151. 1831 ; Clarke in Hook. f. Fl. Brit. India 4 : 361. 1884 ; Collett, Fl. Siml. 366. 1902 ; Nair, Fl. Bash. Himal. 211. 1977.

Herbs. Leaves solitary, sessile. Flowers blue.

Fl. & Fr. : July - October.

Simla (DD).

Temperate Western Himalaya upto Bhutan.

Rhynchoglossum obliquum Bl. Bijdr. 741. 1826 ; Clarke in Hook. f. Brit. India 4 : 367. 1884 ; Nair, Fl. Bash. Himal. 211. 1977. *Wulfenia obliqua* Wall. Tent. Fl. Nepal. 45. t. 35. 1826.

Fleshy herbs. Leaves oblique. Flowers blue.

Fl. & Fr. : September - November.

Simla (DD).

Throughout India.

Rhynchoglossum obliquum Bl. var. **parviflora** Clarke in DC. Monogr. Phaner. 5 : 162. 1883 et in Hook. f. Fl. Brit. India 4 : 367. 1884.

Lower lip of corolla narrower, hardly twice as long as the upper.

Fl. & Fr. : July - October.

Simla (BSIP).

Throughout India.

BIGNONIACEAE

H. J. CHOWDHERY

Amphicome emodi Royle, Ill. Bot. Himal. Mount. 296. 1836 ; Nair, Fl. Bash. Himal. 211. 1977. *Amphicome emodi* Lindl. in Bot. Reg. t. 19. 1838 ; Clarke in Hook. f. Fl. Brit. India 4 : 385. 1884 ; Collett, Fl. Siml. 369. 1902.

Erect, glabrous herbs. Flowers funnel-shaped, pink, yellow tinged.

Fl. & Fr. : May - August.

Simla (DD).

Western Himalaya - Kashmir to Nepal.

Incarvillea arguta (Royle) Royle, Ill. Bot. Himal. Mount. 296. 1836 ; Nair, Fl. Bash. Himal. 211. 1977. *Amphicome arguta* Royle, Ill. Bot. Himal. Mount. t. 72. f. 1. 1835 ; Lindl. in Bot. Reg. t. 19. 1838 ; Clarke in Hook. f. Fl. Brit. India 4 : 385. 1884 ; Collett, Fl. Siml. 369. 1902.

Erect, glabrous shrubs. Flowers light pink.

Fl. & Fr. : May - September.

Kinnaur (BSD, DD), Kulu (DD), Simla (BSD, DD).

North - Western Himalaya.

Millingtonia hortensis L. f. Suppl. 291. 1781 ; Clarke in Hook. f. Fl. Brit. India 4 : 377. 1884 ; Parker, For. Fl. Punj. ed. 3. 375. 1956.

Tall, erect trees with drooping and corky branches. Flowers white.

Fl. & Fr. : June - October.

Simla (BSIP).

Cultivated. The Indian Cork tree.

Oroxylum indicum (L.) Vent. Dec. Gen. Nov. Paris 8. 1808 ; Clarke in Hook. f. Fl. Brit. India 4 : 378. 1884 ; Collett, Fl. Siml. 368. 1902 ; Parker, For. Fl. Punj. ed. 3. 374. 1956. *Bignonia indica* L. Sp. Pl. 871. 1753.

Trees. Leaves large, long pointed, glabrous. Flowers dark - red. Corolla fleshy, bell shaped.

Fl. & Fr. : May - July.

Kulu (BSIP).

Throughout India.

Tecomaria capensis (Lindl.) Spach in Hist. Veg. Phan. 9 : 137. 1840. *Tecoma capensis* Lindl. Bot. Reg. 13. t. 1117. 1828 ; Parker, For. Fl. Punj. ed. 3. 373. 1956.

Climber, Flowers scarlet or orange - red.

Fl. & Fr. : May - September.

Kangra (DD, RRL), Kulu (BSIP).

Cultivated in gardens.

PEDALIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Sesamum orientale L. Sp. Pl. 634. 1753 ; Raghavan *et al* in Rec. Bot. Surv. India 21 (2) : 65. 1981. *S. indicum* L. Sp. Pl. 634. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 387. 1884 ; Nair, Fl. Bash. Himak. 214. 1977.

Erect, annual, puberulous herb. Leaves variable. Flowers purplish - white, with strong unpleasant odour.

Fl. & Fr. : July September.

Chamba (DD), Simla (BSD).

Cultivated, for oil seeds.

MARTYNIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Martynia annua L. Sp. Pl. 618. 1753 ; Y. Nasir in Fl. W. Pak. 13 : 1. 1972 ; Nair, Fl. Bash. Himal. 314. 1977. *M. diandra* Glox. Obs. Bot. 14. t. 1. 1785 ; Clarke in Hook. f. Fl. Brit. India 4 : 386. 1884.

Branched, tall herb. Stem succulent, glandular. tomentose Flowers lilac or purplish - white, mottled red, blue or yellow inside. Capsule ovoid, 2 valved, beaked with 2 curved, lignified, spiny processes.

Fl. & Fr. : July October.

Kinnaur (BSD, DD).

Throughout India, as weed.

ACANTHACEAE

H. J. CHOWDHERY, R. PRASAD, AND B. M. WADHWA

Adhatoda zeylanica Medic. Hist & Commentar Acad. Elect. Sci. Theod. Palat. 6. 393. 1790. *A. vasica* Nees in Wall. Pl. As. Rar. 3 : 103. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 540. 1885 ; Collett, Fl. Siml. 376. 1902 ; Parker, For. Fl. Punj. ed. 3. 388. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 674. 1972 ; Nair, Fl. Bash. Himal. 212. 1977. *Justicia adhatoda* L. Sp. Pl. 15. 1753.

Evergreen glabrous shrubs. Leaves ovate lanceolate. Corolla 2-lipped, pubescent outside, white streaked and pink dotted.

Fl. & Fr. : April November.

Kangra (RRL), Kinnaur (BSD, DD), Kulu (DD), Mandi (LWG), Simla (LWG).

Throughout India.

Aechmanthera tomentosa Nees in Wall. Pl. As. Rar. 3 : 87. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 428. 1884 ; Collett, Fl. Siml. 372. 1902 ; Parker, For. Fl. Punj. ed. 3. 386. 1956 ; Nair, Fl. Bash. Himal. 212. 1977.

Small, erect, dusky grey or whitish shrubs. Leaves lanceolate. Flowers in 3-8 flowered clusters, pale blue or purple. Perfect stamens 4. Capsule linear, 6-8-seeded.

Fl. & Fr. : August October.

Kangra (DD), Kinnaur (DD), Simla (DD).

Temperate North Western Himalaya.

Aechmanthera gossypina (Wall.) Nees in Wall. Pl. As. Rar. 3 : 87. 1832. *Ruellia gossypina* Wall. Pl. As. Rar. 1 : 38. t. 32. 1830. *Aechmanthera tomentosa* Nees var. *wallichii* (Nees) Clarke in Hook. f. Fl. Brit. India 4 : 428. 1884 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 674. 1972. *A. wallichii* Nees in DC. Prodr. 11 : 170. 1847.

Small erect shrubs. Stem and leaves with snow-white wool or glabrate or sparsely hairy. Capsule 6-seeded.

Fl. & Fr. : August November.

Lahul (DD).

Temperate Himalaya.

Andrographis echioides Nees in Wall. Pl. As. Rar. 3 : 117. 1832 ; DC. Prodr. 11 : 518. 1847 ; Clarke in Hook. f. Fl. Brit. India 4 : 505. 1884. *Justicia echioides* L. Sp. Pl. 16. 1753.

Annual herbs, pubescent with patent white hairs. Raceme about as long as the leaves. Flowers pubescent, pink or white.

Fl. & Fr. : April August.

Simla (DD).

Tropical parts of India.

Barleria cristata L. Sp. Pl. 636. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 488. 1884 ; Collett, Fl. Siml. 374. 1902 ; Parker, For. Fl. Punj. ed. 3. 380. 1956 ; Nair, Fl. Bash. Himal. 212. 1977.

Erect, hairy herbs. Spikes ovate, often compound. Calyx unequally 4 parted. Corolla blue. Limb spreading. Perfect stamens 2.

Fl. & Fr. : May - October.

Kangra (DD, RRL), Kinnaur (BSD), Kulu (BSD, LWG).

Throughout India.

Barleria prionitis L. Sp. Pl. 636. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 482. 1884 ; Parker, For. Fl. Punj. ed. 3. 379. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 674. 1972.

Usually much branched, armed bush. Spine straight, slender or flattened, sharp, pale grey or whitish. Flowers solitary in the lower axils, becoming spicate above. Corolla glabrous or puberulous, orange - yellow.

Fl. & Fr. : April - November.

Kangra (DD).

Tropical parts of India - from Himalaya to South India.

Dicliptera bupleuroides Nees in Wall. Pl. As. Rar. 3 : 111. 1832 ; Collett, Fl. Siml. 377. 1971 ; Nair, Fl. Bash. Himal. 212. 1977. *D. roxburghiana* Nees var. *bupleuroides* (Nees) Clarke in Hook. f. Fl. Brit. India 4 : 554. 1885.

Diffuse hairy herbs. Leaves ovate or elliptic, acute or acuminate, glabrous or somewhat pubescent. Bracts linear, acuminate or cuspidate. Flowers pink.

Fl. & Fr. : June - October.

Kangra (RRL), Kulu (DD, RRL), Simla (LWG).

Throughout India.

Dicliptera roxburghiana Nees in Wall. Pl. As. Rar. 3 : 111. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 553. 1885 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 675. 1972 ; Nair, Fl. Bash. Himal. 212. 1977.

Differs from *D. bupleuroides* Nees in having broader bracts.

Fl. & Fr. : March - December.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (DD, LWG), Solan (DD).

Plains of Northern India to Assam.

Eranthemum pulchellum Andrews, Bot. Repos. 2 : t. 88. 1800 (non Roxb. 1832) ; Nair, Fl. Bash. Himal. 213. 1977. *Eranthemum nervosum* (Vahl) R. Br. Prodr. 1 : 476. 1810. *Justicia nervosa* Vahl, Enum. Pl. J : 164. 1804. *Daedalacanthus nervosus* (Vahl) T. Anders. in Journ. Linn. Soc. 9 : 487. 1867 ; Clarke in Hook. f. Fl. Brit. India 4 : 418. 1884 ; Collett, Fl. Siml. 371. 1902 ; Parker, For. Fl. Punj. ed. 3. 381. 1956.

Erect, pubescent shrubs. Leaves shortly stalked, ovate, entire, long pointed. Flowers blue in erect axillary or terminal, dense spikes. Capsule clavate.

Fl. & Fr. : April - May.

Kangra (RRL), Kinnaur (DD).

Base of the Himalaya to Bhutan and West Bengal. Cultivated in various tropical countries.

Goldfussia dalhousiana Nees in DC. Prodr. 11 : 174. 1847 ; Nair, Fl. Bash. Himal. 213. 1977. *Strobilanthes dalhousianus* (Nees) Clarke in Hook. f. Fl. Brit. India 4 : 460. 1884 ; Collett, Fl. Siml. 373. 1902 ; Parker, For. Fl. Punj. ed. 3. 385. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 678. 1972.

Perennial herbs up to 90 cm high. Stem with persistent woody base. Leaf - stalk winged. Bracts caducous. Spike short. Flowers blue.

Fl. & Fr. : July - December.

Chamba (DD), Kangra (DD), Simla (BSIP, DD).

North Western temperate Himalaya.

Hemigraphis latebrosa (Heyne ex Roth) Nees in DC. Prodr. 11 : 723. 1847 ; Wight, Ic. t. 1504. 1850 ; Clarke in Hook. f. Fl. Brit. India 4 : 423. 1884. *Ruellia latebrosa* Heyne ex Roth, Nov. Pl. Sp. 307. 1821.

Herbs with branching, weak stem. Leaves acuminate at both ends, sparsely hairy. Corolla tube pale or yellowish, gradually narrowed upwards, lip blue.

Fl. & Fr. : March - September.

Kinnaur (BSD).

Himachal Pradesh to Bihar and South India.

Hygrophila auriculata (Schum.) Heine in Kew Bull. 16 (2) : 172. 1962. *Barleria auriculata* Schum. in Schum. & Thonn. Beskr. Guin. Pl. 285. 1827. *Hygrophila spinosa* T. Anders. in Journ. Linn. Soc. 7 : 22. 1863 ; Clarke in Hook. f. Fl. Brit. India 4 : 408. 1884 ; Collett, Fl. Siml. 371. 1902.

Erect or decumbent herbs. Stem tetragonous. Leaves apparently in whorls of 6. Flowers in axillary whorls, white or pale - purple. Throughout India.

Hygrophila polysperma (Roxb.) T. Anders. in Journ. Linn. Soc. Bot. 9 : 456. 1867 ; Clarke in Hook. f. Fl. Brit. India 4 : 406. 1884 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 676. 1972. *Justicia polysperma* Roxb. Fl. Ind. ed. Carey, 1 : 119. 1832. *Hemiadelphus polyspermus* (Roxb.) Nees in Wall. Pl. As. Rar. 3 : 80. 1832. *H. polyspermus* var. *joshianus* Rao & Biswas in Ind. For. 94 : 657 658. 1968.

Annual herbs up to 45 cm high. Leaves narrowly oblong to ovate, base spatulate or petioled. Flowers pale blue or white.

Fl. & Fr. : June - November.

Mandi (BSD).

Throughout India in wet places.

Justicia pubigera (Nees) Clarke in Hook. f. Fl. Brit. India 4 : 536. 1885 ; Collett, Fl. Siml. 375. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 676. 1972. *Peristrophe pubigera* Nees in Wall. Pl. As. Rar. 3 : 114. 1832.

Erect, terete, hairy herbs. Leaves cuneate or rhomboid at base. Cymes axillary. Calyx sub 5 partite. Corolla pubescent, purplish red.

Fl. & Fr. : May - October.

Simla (DD).

Temperate North - Western Himalaya.

Lepidagathis cuspidata Nees in Wall. Pl. As. Rar. 3 : 97. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 519. 1885 ; Parker, For. Fl. Punj. ed. 3. 388. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 677. 1972.

Erect or diffuse shrubby plant. Leaves elliptic or ovate, attenuate at both ends, puberulous. Spikes dense or very lax. Corolla whitish with purple spots. Capsule 4 seeded.

Fl. & Fr. : April September.

Chamba (RRL), Kangra (RRL), Kulu (DD), Mandi (BSD, LWG).

Tropical parts of India.

Lepidagathis incurva Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 119. 1825 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 677. 1972. *L. hyalina* Nees in Wall. Pl. As. Rar. 3 : 95. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 521. 1885 ; Collett, Fl. Siml. 375. 1902.

Perennial herbs. Leaves glandular pubescent, nearly sessile, ovate, entire, acute, uppermost often narrower. Flowers white, spotted with brown.

Fl. & Fr. ; June August.

Kangra (DD), Mandi (BSD).

Throughout Northern India.

Peristrophe bicalyculata (Retz.) Nees in Wall. Pl. As. Rar. 3 : 113. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 554. 1885 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 677. 1972. *Dianthera bicalyculata* Retz. in Act. Holm. 297. t. 9. 1775.

Erect, spreading herbs. Leaves ovate, acuminate. Panicle lax, divaricate. Flowers purple with purple dotted throat. Seeds minutely glandular, papillose.

Fl. & Fr. : June November.

Simla (LWG).

Tropical and sub tropical parts of India.

Peristrophe speciosa (Roxb.) Nees in Wall. Pl. As. Rar. 3 : 113. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 556. 1885. *Justicia speciosa* Roxb. Fl. Ind. ed. Carey, 1 : 122. 1820.

Erect, ascending or climbing herbs. Stem tetragonous. Leaves elliptic lanceolate to ovate, rounded at base. Flowers in crowded involucre which are combined into cymes forming a leafy panicle. Flowers purple with a red purple dotted throat.

Fl. & Fr. : August November.

Chamba (DD).

Sub - tropical Himalaya.

Petalidium barlerioides (Roth) Nees in Wall. Pl. As. Rar. 3 : 82. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 416. 1884 ; Collett, Fl. Siml. 371. 1902 ; Parker, For. Fl. Punj. ed. 3. 389. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 677. 1972. *Ruellia barlerioides* Roth, Nov. Sp. 310. 1821.

Straggling shrubs. Leaves ovate, acuminate, toothed or crenate. Flowers white.

Fl. & Fr. : July - October.

Kulu (DD).

North - Western Himalaya and South India.

Phaulopsis imbricata (Forssk.) Sweet, H. Br. ed. 1. 327. 1827. *Ruellia imbricata* Forssk. Fl. Aegypt. Arab. 113. 1775. *Phaulopsis parviflora* Willd. Sp. Pl. 3 : 342. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 417. 1884.

Prostrate, closely branched herbs. Leaves acuminate at both the ends. Flowers nearly white.

Fl. & Fr. : July - November.

Kulu (DD).

Throughout India.

Phlogacanthus thyrsiflorus (Roxb.) Nees in Wall. Pl. As. Rar. 3 : 79. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 512. 1884 ; Parker, For. Fl. Punj. ed. 3. 387. 1956. *Justicia thyrsiflora* Roxb. Fl. Ind. ed. Carey, 1 : 114. 1820.

Evergreen shrubs. Bark smooth, grey. Leaves oblong - oblanceolate or elliptic, entire. Flowers in 4 - 5 flowered whorls, forming spike. Corolla brick red. Capsule glabrous.

Fl. & Fr. : April - September.

Kangra (DD), Sirmur (DD).

Sub - tropical Himalaya.

Pseudaechmanthera glutinosa (Nees) Bremek. Verh. Ned. Akad. Wetens. Sect. 2. 41 : 188. 1944. *Strobilanthes glutinosa* Nees in Wall. Pl. As. Rar. 3 : 86. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 458. 1884 ; Parker, For. Fl. Punj. ed. 3. 382. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 679. 1972.

Small shrubs with simple stem, often branched from the base. Leaves ovate elliptic to oblong, crenate dentate. Flowers pale lilac. Capsule viscous pubescent.

Fl. & Fr. : May October.

Simla (LWG).

North Western Himalaya.

Pteracanthus alatus (Wall. ex Nees) Bremek. in Verh. Ned. Akad. Wetens. Sect. 2. 41 (1) : 199. 1944 ; Nair, Fl. Bash. Himal. 213. 1977. *Strobilanthes alatus* Wall. ex Nees in DC. Prodr. 11 : 193. 1847 ; Clarke in Hook. f. Fl. Brit. India 4 : 464. 1884 ; Collett, Fl. Siml. 374. 1902 ; Parker, For. Fl. Punj. ed. 3. 384. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 678. 1972.

Perennial herbs with woody base. Lower leaves long petioled, upper sessile. Flowers dark blue.

Fl. & Fr. : August October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (DD), Simla (DD).

Western temperate Himalaya.

Pteracanthus angustifrons (Clarke) Bremek. Verh. Ned. Akad. Wetens. Sect. 2. 41 (1) : 200. 1944. *Strobilanthes angustifrons* Clarke in Hook. f. Fl. Brit. India 4 : 466. 1884.

Much branched under shrubs. Leaves in equal pairs. Flowers in capitate, paniculate spikes, blue or violet.

Fl. & Fr. : May October.

Kangra (DD).

North Western Himalaya.

Rostellularia mollissima (Nees) Nees in DC. Prodr. 11 : 373. 1847. *Rostellularia mollissima* Nees in Wall. Pl. As. Rar. 3 : 101. 1832. *Justicia simplex* D. Don, Prodr. Fl. Nepal. 118. 1825 (non *Rostellularia simplex* Wt. 1850) ; Clarke in Hook. f. Fl. Brit. India 4 : 539. 1885 ; Collett, Fl. Siml. 375. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 676. 1977 ; Nair, Fl. Bash. Himal. 213. 1977.

Much branched annual herbs, rooting from the nodes. Stem grooved. Leaves hairy, ovate or lanceolate. Spike crowded. Flowers pale purple or pinkish white.

Fl. & Fr. : June - October.

Chamba (DD), Hamirpur (RRL), Kangra (DD, RRL), Kinnaur (BSD), Simla (DD), Sirmur (DD).

North - Western and Central India and Nilgiri hills.

Rostellularia quinqueangularis (Koenig et Roxb.) Nees in DC. Prodr. 11 : 375. 1847, var. **peploidea** (Nees) Babu, Herb. Fl. D. Dun 392. 1977. *Rostellularia peploides* Nees in Wall. Pl. As. Rar. 3 : 101. 1832. *Rostellularia peploides* (Nees) Nees in DC. Prodr. 11 : 375. 1847. *Justicia quinqueangularis* Koenig ex Roxb. var. *peploides* (Nees) Clarke in Hook. f. in Fl. Brit. India 4 : 537. 1885.

Erect or prostrate or procumbent ascending, annual herbs with 4 - 5 angular branches. Leaves long - petioled, ovate lanceolate to oblong. Flowers in interrupted spikes, bracts and bracteoles oblong, purple with a purple - streaked throat. Capsule glabrous.

Fl. & Fr. : July - October.

Kinnaur (DD).

Throughout India.

Ruellia patula Jacq. Misc. Austr. Bot. 2 : 358. 1781 ; Clarke in Hook. f. Fl. Brit. India 4 : 412. 1884 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 678. 1972. *Dipteracanthus patulus* (Jacq.) Nees in Wall. Pl. As. Rar. 3 : 82. 1832 ; DC. Prodr. 11 : 126. 1847 ; Wight, Ic. t. 1505. 1850.

Herbs. Stem up to 45 cm high, densely pubescent. Corolla pubescent, very pale grey purple, the cylindrical portion of the tube is as long as the ventricose part.

Fl. & Fr. : June - October.

Mandi (LWG).

Through India.

Rungia parviflora (Retz.) Nees in Wall. Pl. As. Rar. 3 : 110. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 550. 1885. *Justicia parviflora* Retz. Obs. B. 5 : 9. 1788.

Small weeds. Lower leaves petioled, ovate, upper narrow, some times linear. Seeds small, minutely verrucose.

Fl. & Fr. : July October.

Solan (DD).

North Western Himalaya, in Himachal Pradesh and South India.

Rungia pectinata (L.) Nees in DC. Prodr. 11 : 469. 1847 ; Wight, Ic. t. 1547. 1850. *Justicia pectinata* L. in Torner, Cent. II Pl. 3. 1756. *Rungia parviflora* var. *pectinata* (L.) Clarke in Hook. f. Fl. Brit. India 4 : 550. 1885.

Decumbent or procumbent, often much branched annual herbs. Leaves oblanceolate spatulate to oblong or lanceolate, elliptic, acute at base. Flowers violet blue. Capsule glabrous.

Fl. & Fr. : July August,

Kangra (RRL), Mandi (BSD).

Throughout India an universal weed.

Strobilanthes atropurpureus Nees in Wall. Pl. As. Rar. 3 : 86. 1832 ; Clarke in Hook. f. Fl. Brit. India 4 : 472. 1884 ; Collett, Fl. Siml. 374. 1902 ; Parker, For. Fl. Punj. ed. 3. 384. 1956 ; Nair, Fl. Bash. Himal. 214. 1977.

Perennial, pubescent herbs. Leaves glabrous or nearly so. Bracts persistent. Flowers purple.

Fl. & Fr. : June September.

Chamba (DD), Kinnaur (BSD), Kulu (BSD), Simla (DD).

Sub alpine North Western Himalaya.

Strobilanthes wallichii Nees in Wall. Pl. As. Rar. 3 : 87. 1832 Clarke in Hook. f. Fl. Brit. India 4 : 471. 1884 (excl. var. *microphylla* Nair, Fl. Bash. Himal. 214. 1977.

Gregarious undershrubs. Leaves on flowering shoots, elliptic oblong, caudate-acuminate, narrowed into a long winged petiole. Corolla nearly straight, glabrous or with minute line of hairs within. Capsule glabrous, 4 seeded.

Fl. & Fr. : August November.

Kinnaur (DD), Kulu (DD), Simla (DD, LWG).

Sub alpine Himalaya.

VERBENACEAE

B.M. WADHWA AND H.J. CHOWDHERY

Callicarpa macrophylla Vahl, Symb. Bot. 3 : 13. t. 53. 1794 ; Clarke in Hook. f. Fl. Brit. India 4 : 568. 1885 ; Collett, Fl. Siml. 380. 1902 ; Parker, For. Fl. Punj. ed. 3. 393. 1956 ; S.M.H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 20. 1974 ; Nair, Fl. Bash. Himal. 214. 1977. *C. incana* Roxb. Fl. Ind. 1 : 393. 1832.

Shrub. Flowers pink. Drupe succulent, globose, white.

Fl. & Fr. : July – September.

Chamba (BSD, DD), Kangra (BSD, RRL), Simla (DD).

Throughout Northern and Eastern India.

Caryopteris grata Benth. in Benth. & Hook. f. Gen. Pl. 2 : 1158. 1876 ; Clarke in Hook. f. Fl. Brit. India 4 : 597. 1885 ; Parker, For. Fl. Punj. ed. 3. 400. 1956 ; S.M.H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 37. 1974.

Shrub with pubescent or tomentose branches. Flowers pubescent glandular. Capsule glabrous, globose and somewhat ribbed.

Fl. & Fr. : July – October.

Chamba (RRL).

Western and Central Himalaya.

Caryopteris odorata (D. Don) Robinson in Proc. Ann. Acad. Arts & Sci. 51 : 531. 1916 ; S.M.H. Jafri & A. Ghafoor in Fl. West Pakistan 77 : 36. 1974. *Clerodendrum odoratum* D. Don, Prodr. Fl. Nepal. 102. 1825. *Caryopteris wallichiana* Schauer in DC. Prodr. 11 : 625. 1847 ; Clarke in Hook. f. Fl. Brit. India 4 : 597. 1885 ; Collett, Fl. Siml. 381. 1902 ; Parker, For. Fl. Punj. ed. 3. 400. 1956 ; Nair, Fl. Bash. Himal. 215. 1977.

Shrub. Flowers fragrant, white, tinged with blue. Fruits pubescent, dark blue.

Fl. & Fr. : April – August.

Chamba (DD), Kinnaur (BSD, DD).

Sub-tropical Himalaya.

Clerodendrum divaricatum Jack. Mal. Misc. 1 : 48. 1820 ; Merrill in Jour. Arn. Arb. 33 : 219. 1952. *C. serratum* Spreng. Syst. Veg. 2 : 758. 1825 ; Clarke in Hook. f. Fl. Brit. India 4 : 592. 1885.

Shrub. Flowers purplish blue to white. Drupe succulent, purple – black.

Fl. & Fr. : February – October.

Kangra (DD), Kinnaur (DD), Simla (DD).

Throughout India.

Clerodendrum indicum (L.) Kuntze, Rev. Gen. Pl. 586. 1891 ; S.M.H. Jafri & A. Ghafoor in Fl. West Pakistan 77 : 31. 1974. *Siphonanthus indica* L. Sp. Pl. 109. 1753. *Clerodendrum siphonanthus* R. Br. in Ait. f. Herb. Kew 4 : 65. 1812 ; Clarke in Hook. f. Fl. Brit. India 4 : 595. 1885 ; Parker, For. Fl. Punj. ed. 3. 397. 1956. *C. verticillatum* D. Don, Prodr. Fl. Nepal. 102. 1825.

Shrub. Flowers glabrous, white.

Fl. & Fr. : June – September.

Mandi (BSD).

Throughout India.

Clerodendrum infortunatum L. Sp. Pl. 637. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 594. 1885. *C. viscosum* Vent. Jard. Malm. t. 25. 1803.

Shrub. Flowers pubescent, white, pink tinged. Drupe black.

Fl. & Fr. : May – October.

Mandi (LWG).

Throughout India.

Clerodendrum philippinum Schau. in DC. Prodr. 11 : 667. 1847 ; S.M.H. Jafri & A. Ghafoor in Fl. West Pakistan 77 : 35. 1974. *Clerodendrum fragrans* Enum. Hort. Berol. 659. 1806. (nom. illeg.).

Fl. & Fr. : August – October.

Chamba (DD), Kangra (RRL).

Sub-tropical Himalaya. Cultivated.

Duranta repens L. Sp. Pl. 637. 1753 ; S.M.H. Jafri & A. Ghafoor in Fl. West Pakistan 77 : 18. 1974. *D. erecta* L. Sp. Pl. 637. 1753.

D. plumieri Jacq. Select. Strip Amer. Hist. 186. t. 176. 1763 ; Parker, For. Fl. Punj. ed. 3. 401. 1956.

Fl. & Fr. : April - August.

Kangra (RRL).

Commonly cultivated hedge plant.

Holmskioldia sanguinea Retz. Obs. 6 : 31. 1791 ; Clarke in Hook. f. Fl. Brit. India 4 : 596. 1885 ; Collett, Fl. Siml. 380. 1902 ; Parker, For. Pl. Punj. ed. 3. 399. 1956 ; S.M.H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 35. 1974.

Shrub. Flowers brick red or somewhat orange.

Fl. & Fr. : August - December.

Chamba (DD), Kangra (DD).

Sub-tropical Himalaya.

Lantana camara L. Sp. Pl. 627. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 562. 1884 ; Parker, For. Fl. Punj. ed. 3. 401. 1956 ; S.M.H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 9. 1974. var. *aculeata* (L.) Mold. in Torreyia 34 : 9. 1934. *L. aculeata* L. Sp. Pl. 627. 1753.

Fl. & Fr. : May - November.

Chamba (DD), Kangra (DD, RRL).

Very common weed throughout India.

Lippia citriodora H. B. & K. Nov. Gen. et. Sp. Pl. 2 : 269. 1818 ; Bailey, Stand. Cycl. Hort. 2 : 1888. 1958. *Aloysia citriodora* Ort. ex Pers. Syn. 2 : 189. 1806.

Fl. & Fr. : August - September.

Simla (DD).

Cultivated.

Phyla nodiflora (L.) Green in Pittonia 4 : 46. 1899 ; Moldenke in Ann. Miss. Bot. Gard. 60 : 59. 1973 ; S.M.H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 11. 1974 ; Nair, Fl. Bash. Himal. 215. 1977. *Verbena nodiflora* L. Sp. Pl. 20. 1753. *Lippia nodiflora* (L.) L. C. Rich in Michaux. Fl. Bor. Amer. 2 : 15. 1803 ; Clarke in Hook. f. Fl. Brit. India 4 : 563. 1885 ; Collett, Fl. Siml. 379. 1902.

Shrub. Flowers pinkish-purple to white.

Fl. & Fr. : July – September.

Chamba (BSD, DD), Kinnaur (BSD).

Throughout India.

Premna barbata Wall. ex Schauer in DC. Prodr. 11 : 636. 1847 ; Clarke in Hook. f. Fl. Brit. India 4 : 579. 1885 ; Parker, For. Fl. Punjab ed. 3. 395. 1956 ; S.M. H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 22. 1974.

Small tree or shrub. Flowers greenish in terminal corymbose, pubescent, trichomatous.

Fl. & Fr. : April – October.

Chamba (DD), Kangra (DD).

Sub-tropical Himalaya.

Stachytarpheta mutabilis Vahl, Enum. 1 : 208. 1804 ; Bailey, Stand. Cycl. Hort., 3 : 3221. 1958.

Fl. & Fr. : July – October.

Kinnaur (BSD), Sirmur (DD).

Throughout India.

Verbena bonariensis L. Sp. Pl. 20. 1753 ; Clarke in Hook. f. Fl. Brit. India 4 : 565. 1885 ; S. M. H. Jafri & A. Ghafoor in Fl. West Pakistan 77 : 6. 1974.

Fl. & Fr. : June – September.

Kangra (DD), Mandi (BSD).

Cultivated.

Verbena officinalis L. Sp. Pl. 20. 1753 ; Clarke in Hook. f. Fl. Brit. India. 4 : 565. 1885 ; S.M.H. Jafri & A. Ghafoor in Fl. West Pakistan 77 : 4. 1974 ; Collett, Fl. Siml. 379. 1902 ; Nair, Fl. Bash. Himal. 215. 1977.

Herb. Flowers blue.

Fl. & Fr. : April – October.

Chamba (BSD, DD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD, DD, RRL).

Himalaya.

Vitex negundo L. Sp. Pl. 638. 1753 ; Clarke in Hook. f. Fl. Brit.

India 4 : 583. 1885 ; Collett, Fl. Siml. 380. 1902 ; Parker, For. Fl. Punj. ed. 3. 391. 1956 ; S.M.H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 27. 1974 ; Nair, Fl. Bash. Himal. 215. 1977. *V. paniculata* Lamk. Encycl. Meth. 2 : 612. 1786.

Shrub. Flowers blue - purple. Fruit succulent, black.

Fl. & Fr. : June - August.

Kangra (BSD, BSIP, RRL), Kinnaur (BSD), Kulu (DD), Simla (BSD).

Throughout India.

Vitex negundo L. var. *incisa* (Lamk.) Clarke in Hook. f. Fl. Brit. India 4 : 584. 1885. *V. incisa* Lamk. Encycl. Meth. 2 : 611. 1788.

Leaflets crenate - serrate or subpinnatifid.

Fl. & Fr. : June - September.

Mandi (DD).

Throughout India.

Vitex trifolia L. f. Suppl. 293. 1781 ; Clarke in Hook. f. Fl. Brit. India 4 : 583. 1885 ; S.M.H. Jafri and A. Ghafoor in Fl. West Pakistan 77 : 28. 1974.

Shrub. Flowers blue.

Fl. & Fr. : July - November.

Simla (BSIP).

Scattered throughout India.

PHRYMACEAE

B.M. WADIWA AND H.J. CHOWDHERY

Phryma leptostachya L. Sp. Pl. 601. 1753. var. *oblongifolia* (Koidzumi) Honda in Bot. Mag. Tokyo 50 : 608. 1836. *P. oblongifolia* Koidzumi in Bot. Mag. Tokyo 43 : 400. 1929. *P. leptostachya* auct (non L.) Clarke in Hook. f. Fl. Brit. India 4 : 562. 1885 ; Collett, Fl. Siml. 378. 1902. *P. leptostachya* var. *asiatica* Hara in Enum. Spreng. Jap. 1 : 297. 1949 ; Nair, Fl. Bash. Himal. 215. 1977. *P. leptostachya* L. subsp. *asiatica* (Hara). Kitamura in Act. Phytotax. Geobot. 17 : 7. 1957.

Thinly hairy, erect herb. Flowers pale-pink.

Fl. & Fr. : July - September.

Kulu (BSD).

Western Himalaya and Nepal.

LAMIACEAE

H.J. CHOWDHERY, B.P. UNIYAL AND B.M. WADHWA

Acrocephalus indicus (Burm. f.) O. Ktze. *Rev. Gen. Pl.* 2 : 512. 1891 ; Mukerjee in *Rec. Bot. Surv. India* 14(1) : 29. 1940 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 609. 1972. *Prunella indica* Burm. f. *Fl. Ind.* 130. 1763. *Acrocephalus capitatus* Benth. in *Wall. Pl. As. Rar.* 2 : 18. 1830 ; Hook. f. *Fl. Brit. India* 4 : 611. 1885 ; Collett, *Fl. Siml.* 384. 1902.

Annual, much branched herb. Leaves ovate - lanceolate, serrate. Flowers in terminal heads, white, pale-purple to light blue.

Fl. & Fr. : August - November.

Throughout India.

Ajuga brachystemon Maxim. in *Bull. Acad. Sci. St. Petersburg.* 27 : 192. 1883 ; Hook. f. *Fl. Brit. India* 4 : 703. 1885 ; Mukerjee in *Rec. Bot. Surv. India* 14(1) : 225. 1940.

Dwarf herb. Stem very short. Radical leaves shortly petioled, cauline sessile. Calyx obconic. Corolla tube straight.

Fl. & Fr. : September - October.

Kangra (DD).

Western Himalaya and Nepal.

Ajuga bracteosa Wall. ex Benth. in *Wall. Pl. As. Rar.* 1 : 59. 1830 ; Hook. f. *Fl. Brit. India* 4 : 702. 1885 ; Collett, *Fl. Siml.* 406. 1902 ; Mukerjee in *Rec. Bot. Surv. India* 14(1) : 224. 1940 ; Nair, *Fl. Bash. Himal.* 216. 1977.

Prostrate, perennial, hairy herb. Leaves ovate-spathulate, margin undulate. Flowers in axillary clusters, white with pinkish or bluish tinge. Stamens exserted.

Fl. & Fr. : March – October.

Chamba (BSD, BSIP, LWG), Kangra (DD, RRL), Kinnaur (BSD, LWG), Lahul & Spiti (BSD), Simla (BSD, DD, LWG).

Western Himalaya upto Bhutan.

Ajuga parviflora Benth. in Wall. Pl. As. Rar. 1 : 59. 1830 ; Hook. f. in Fl. Brit. India 4 : 792. 1885 ; Collett, Fl. Siml. 407. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 225. 1940 ; Nair, Fl. Bash. Himal. 216. 1977.

Perennial, hairy herb. Leaves oblanceolate or obovate, radical leaves often purple tinged on lower surface. Flowers white-blue. Stamens included.

Fl. & Fr. : April – June.

Chamba (BSD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (DD), Mandi (BSIP), Simla (BSD, DD).

Temperate Western Himalaya and Nepal.

Anisochilus carnosus (L. f.) Wall. Pl. As. Rar. 2 : 18. 1830 ; Hook. f. Fl. Brit. India 4 : 627. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 58. 1940. *Lavandula carnosus* L.f. Suppl. 273. 1781.

Annual herb. Leaf-petiole upto 5 cm. long. Flowers in dense spikes, pale-purple or pale-blue.

Fl. & Fr. : August – October.

Simla (DD).

Throughout India.

Anisomeles indica O. Ktze. Rev. Gen. Pl. 2 : 512. 1891 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 152. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 609. 1972 ; Nair, Fl. Bash. Himal. 216. 1977. *A. ovata* R. Br. in Ait. Hort. Kew ed. 2. 3 : 364. 1811 ; Hook f. Fl. Brit. India 4 : 672. 1885 ; Collett, Fl. Siml. 402. 1902.

Dense or sparsely hairy herb. Leaves ovate, acute, crenate-serrate. Flowers crowded in whorls, pink, violet or blue.

Fl. & Fr. : April – October.

Kinnaur (BSD, DD), Simla (BSIP).

Throughout India.

Clinopodium umbrosum (M. Bieb.) C. Koch in Linnæa 21 : 673.

1848 ; Nair, Fl. Bash. Himal. 216. 1977. *Melissa umbrosa* M. Bieb. Fl. Taur. Cauc. 2 : 63. 1808. *Calamintha umbrosa* Fisch. et Mey. Ind. Sem. Hort. Petrop. 6 : 6. 1840 ; Hook. f. Fl. Brit. India 4 : 650. 1885 ; Collett, Fl. Siml. 393. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 98. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 609. 1972.

Decumbent, hairy herb. Flowers in axillary whorls, pinkish - white. Bracts shorter than the calyx.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD), Lahul and Spiti (BSD, DD), Mandi (BSIP), Simla (BSD, DD).

Temperate Himalaya, Khasia hills and Western Ghats.

Clinopodium vulgare L. Sp. Pl. 587. 1753 ; Nair, Fl. Bash. Himal. 217. 1977. *Calamintha clinopodium* Benth. in DC. Prodr. 12 : 233. 1848 ; Hook. f. Fl. Brit. India 4 : 650. 1885 ; Collett, Fl. Siml. 392. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 98. 1940. *Calamintha vulgaris* (L.) Druce in Ann. Scot. Nat. Hist. Soc. 60 : 224. 1906.

Decumbent herb. Flowers in dense, axillary and terminal heads, pink. Bracts equalling the calyx.

Fl. & Fr. : April - October.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD, RRL), Simla (BSD, DD).

Temperate Western Himalaya.

Colebrookia oppositifolia Sm. Exot. Bot. 2 : 111. t. 115. 1805 ; Hook. f. Fl. Brit. India 4 : 642. 1885 ; Collett, Fl. Siml. 388. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 84. 1940 ; Parker, For. Fl. Punj. ed. 3. 407. 1956 ; Nair, Fl. Bash. Himal. 217. 1977.

Shrub. Leaves oblong lanceolate or elliptic, crenate. Flowers in terminal panicles, crowded, white.

Fl. & Fr. : April - November.

Chamba (RRL), Kangra (RRL), Kinnaur (BSD, DD), Simla (BSIP, DD).

Tropical and subtropical parts of India.

Coleus forskohlii (Willd.) Briq. in Engl. Pflanzenfam. 4. 3a : 359. 1897 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 53. 1940 ; Nair, Fl. Bash. Himal. 217. 1977. *Plectranthus forskohlii* Willd. Sp. Pl. 3 : 169.

1800. *Coleus barbatus* (Andr.) Benth. in Wall. Pl. As. Rar. 2 : 15. 1830 ; Hook. f. Fl. Brit. India 4 : 625. 1885 ; Collett, Fl. Siml. 386. 1902.

Perennial, hairy herb. Leaves ovate - lanceolate, with scattered glands on lower surface. Flowers in terminal racemes, pink-purple to violet. Corolla tube bent at right angle.

Fl. & Fr. : May - October.

Kinnaur (BSD, DD).

Subtropical Himalaya.

Himachal Pradesh, Bihar and Deccan peninsula.

Coluboumia coccinea Wall. in Trans. Linn. Soc. 13 : 609. 1822 ; Murata in Hara, Fl. E. Himal. 1 : 273. 1966. *C. coccinea* var. *mollis* (Schlecht.) Prain in Journ. As. Soc. Beng. 62 : 37. 1893 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 155. 1940. *C. mollis* Schlecht. in Linnaea 24 : 618. 1851. *C. vestita* Benth. in DC. Prodr. 12 : 457. 1848 ; Hook. f. Fl. Brit. India 4 : 674. 1885 (non Wall.).

Stout shrub with rusty tomentum. Flowers large, orange-red. Nutlets with very short wings.

Fl. & Fr. : September - October.

Simla (DD).

Temperate Himalaya and Khasia hills.

Craniotome furcata (Link) O. Ktze. Rev. Gen. Pl. 2 : 516. 1891 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 610. 1972. *C. versicolor* Reichb. Icon. Exot. 1 : 39. 1824 ; Hook. f. Fl. Brit. India 4 : 671. 1885 ; Collett, Fl. Siml. 401. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 151. 1940 ; Nair, Fl. Bash. Himal. 217. 1977.

Erect, hairy herb. Leaves ovate-cordate, lower long petioled. Flowers in sub - secund cymes, small, pink or yellow or white with violet tinge.

Fl. & Fr. : August - November.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya and Khasia hills.

Dracocephalum heterophyllum Benth. Lab. Gen. et. Sp. 738. 1835-36 ; Hook. f. Fl. Brit. India 4 : 665. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 136. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 611. 1972.

Decumbent herb, aromatic. Leaves long petiolate, ovate-oblong, crenate. Flowers white.

Fl. & Fr. : July - August.

Chamba (DD), Lahul & Spiti (BSD, BSIP, DD).

Himalaya and Western Tibet.

Dracocephalum speciosum Benth. in Wall. Pl. As. Rar. 2 : 65. 1830 ; Hook. f. Fl. Brit. India 4 : 665. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 137. 1940.

Decumbent herb. Radical leaves petiolate, upper cauline sessile, ovate, cordate. Flowers purple-blue.

Fl. & Fr. : July - September.

Lahul and Spiti (BSD, DD), Simla (Hook. f.).

Alpine Himalaya, Himachal Pradesh to Sikkim.

Elsholtzia ciliata (Thunb.) Hyland. in Bot. Notiser 129. 1941 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 611. 1972. *Sideritis ciliata* Thunb. Fl. Jap. 245. 1784. *Elsholtzia cristata* Willd. Sp. Pl. 3 : 29. 1800 ; Hook. f. Fl. Brit. India 4 : 645. 1885 ; Collett, Fl. Siml. 389. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 92. 1940 ; Nair, Fl. Bash. Himal. 218. 1977.

Erect, aromatic herb. Leaves ovate - lanceolate, serrate. Flowers white, pink. Bracts ovate, cuspidate.

Fl. & Fr. : August - February.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, RRL), Simla (DD).

Temperate and tropical Himalaya.

Elsholtzia densa Benth. Lab. Gen. et. Sp. 714. 1835 ; Hook. f. Fl. Brit. India 4 : 615. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 91. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 612. 1972.

Aromatic herb. Leaves oblong - lanceolate, serrate. Flowers pink - pale or purple.

Fl. & Fr. : July - September.

Chamba (BSD), Lahul and Spiti (BSD).

Himalaya and Western Tibet.

Elsholtzia eriostachya Benth. Lab. Gen. et Sp. 163. 1833 ; Hook. f. Fl. Brit. India 4 : 645. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 91. 1940 ; Nair, Fl. Bash. Himal. 218. 1977.

Annual herb. Flowers yellow.

Fl. & Fr. : August - September.

Kinnaur (BSD), Lahul and Spiti (BSD).

Alpine Himalaya, Himachal Pradesh to Sikkim.

Elsholtzia flava Benth. Lab. Gen. et Sp. 161. 1833 ; Hook. f. Fl. Brit. India 4 : 462. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 88. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 612. 1972.

Tall herb. Leaves long petioled, ovate-elliptic, dentate. Flowers yellow. Bracts deciduous.

Fl & Fr. : August - October.

Kinnaur (BSD), Mandi (BSD).

Temperate Himalaya and Khasia hills.

Elsholtzia fruticosa (D. Don) Rehder in Sarg. Pl. Wilson 3 : 381. 1916 ; Nair, Fl. Bash. Himal. 218. 1977. *Perilla fruticosa* D. Don, Prodr. Fl. Nepal. 115. 1825. *E. polystachya* Benth. Lab. Gen. et Sp. 161. 1833 ; Hook. f. Fl. Brit. India 4 : 643 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 89. 1940 ; Parker, For. Fl. Punj. ed. 3. 408. 1956.

Shrub. Leaves sub-sessile, elliptic-lanceolate, serrate. Flowers white or yellow. Bracts minute.

Fl. & Fr. : August - October.

Chamba (DD, RRL), Kangra (RRL), Kinnaur (BSD, DD), Kulu BSD, DD), Simla (CDRI, DD).

Temperate Himalaya, Kashmir to Sikkim and Khasia hills.

Elsholtzia kochinensis Prain in Journ. As. Soc. Bengal 73 : 206. 1904 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 92. 1940.

Prostrate herb. Stem rooting below. Corolla pink-purple, upper lip white at the margins.

Fl. & Fr. : July - October.

Simla (Mukerjee, 1940).

Western Himalaya

Elsholtzia stachyodes (Link) Raizada et Saxena in Indian For. 92 : 309. 1966. *Hyptis stachyodes* Link, Enum. 2 : 106. 1822. *E. incisa* Benth. Lab. Gen. et Sp. 162. 1833 ; Hook. f. Brit. India 4 : 644. 1885 ; Collett, Fl. Siml. 388. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 89. 1940 ; Nair, Fl. Bash. Himal. 218. 1977.

Annual herb. Leaves ovate, rhomboid, deeply serrate. Flowers white or dull purple. Bracts minute, linear.

Fl. & Fr. : September - November.

Chamba (DD, RRL), Kinnaur (DD).

Temperate and subtropical Himalaya.

Elsholtzia strobilifera Benth. Lab. Gen. et. Sp. 163. 1833 ; Hook. f. Fl. Brit. India 4 : 645. 1885 ; Collett, Fl. Siml. 389. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 92. 1940 ; Nair, Fl. Bash. Himal. 219. 1977.

Small herb. Leaves ovate, crenate or serrate. Flowers pink-purple. Bracts broad, truncate.

Fl. & Fr. : June - September.

Kinnaur (BSD), Kulu (BSD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate and alpine Himalaya, Himachal Pradesh to Sikkim.

Eremostachys superba Royle ex Benth. in Hook. Bot. Misc. 3 : 381. 1833 ; Hook. f. Fl. Brit. India 4 : 695. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 80. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 613. 1972.

Robust herb. Stem soft, hairy. Flowers in woolly spikes, yellow.

Fl. & Fr. : July - November.

Kangra (Mukerjee, 1940).

Siwalik ranges in India.

Eusteralis cruciata (Benth.) Majumdar in J. Bombay nat. Hist. Soc. 74(2) : 384. 1977. *Dysophylla cruciata* Benth. in Wall. Pl. As. Rar. 1 : 30. 1830 ; Hook. f. Fl. Brit. India 4 : 639. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 80. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 611. 1972.

Stout herb. Stem densely hirsute. Leaves sessile, linear, hirsute. Flowers in spikes, lilac or pale-purple.

Fl. & Fr. : September – November.

Chamba (Hook. f.), Kangra (DD), Kulu (Hook. f.).

Himalaya, Assam and Khasia Hills.

Hyssopus officinalis L. Sp. Pl. 569. 1753 ; Hook. f. Fl. Brit. India 4 : 649. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 94. 1940 ; Nair, Fl. Bash. Himal. 519. 1977.

Undershrub. Stem obtusely angled. Flowers in axillary and terminal spikes, purple-blue.

Fl. & Fr. : July – October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, BSIP).

Western Himalaya.

Lanium album L. Sp. Pl. 579. 1753 ; Hook. f. Fl. Brit. India 4 : 679. 1885 ; Collett, Fl. Siml. 403. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 161. 1940 ; Nair, Fl. Bash. Himal. 219. 1977.

Decumbent herb. Leaves ovate, cordate, crenate or serrate, lower long petioled. Flowers white.

Fl. & Fr. : May – October.

Chamba (BSD, BSIP, CDRI, DD, LWG, RRL), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (BSD, BSIP, LWG, DD), Lahul and Spiti (RRL), Simla (BSD, DD, LWG).

Temperate Himalaya.

Lanium amplexicaule L. Sp. Pl. 579. 1753 ; Hook. f. Fl. Brit. India 4 : 679. 1885 ; Collett, Fl. Siml. 403. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 161. 1940 ; Nair, Fl. Bash. Himal. 219. 1977.

Decumbent herb. Leaves orbicular, inciso-crenate. Flowers pink or purple-white.

Fl. & Fr. : June – August.

Chamba (BSD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate Himalaya and Western Tibet.

Lanium rhomboideum (Benth.) Benth. Lab. Gen. et. Sp. 509. 1836 ; Hook. f. Fl. Brit. India 4 : 678. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 160. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 615. 1972. *Eriantha rhomboidea* Benth. in Hook. Bot. Misc. 3 : 380. 1833.

Dwarf herbs, densely velvety. Leaves rhomboid, velvety on both surfaces. Flowers pink.

Fl. & Fr. : June - August.

Chamba (DD), Lahul and Spiti (BSD, BSIP, DD).

Alpine Western Himalaya and Western Tibet.

Leonurus cardiaca L. Sp. Pl. 584. 1753 ; Hook. f. Fl. Brit. India 4 : 678. 1885 ; Collett, Fl. Siml. 402. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 92. 1940 ; Nair, Fl. Bash. Himal. 219. 1977.

Erect, stout herb. Stem grooved. Leaves ovate, cordate, irregularly lobed. Flowers white, purple-white to violet-blue.

Fl. & Fr. : June - September.

Chamba (DD, LWG), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD, DD, RRL), Simla (DD, LWG).

Temperate Himalaya.

Leonurus cardiaca L. var. **pubescens** (Benth.) Hook. f. Fl. Brit. India 4 : 678. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 193. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 615. 1972. *L. pubescens* Benth. in Wall. Pl. As. Rar. 1 : 63. 1830.

Herb. Leaves small, elliptic lanceolate, cuneate, finely pubescent.

Fl. & Fr. : June - August.

Chamba (Mukerjee, 1940).

Western Himalaya.

Leucas cephalotes (Roth) Spreng. Syst. Veg. 2 : 743. 1825 ; Hook. f. Fl. Brit. India 4 : 689. 1885 ; Collett, Fl. Siml. 405. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 168. 1940 ; Nair, Fl. Bash. Himal. 220. 1977. *Phlomis cephalotes* Roth, Nov. Pl. Sp. 262. 1821.

Erect, hairy herb. Leaves ovate - lanceolate, narrow at both ends. Flowers in dense, terminal heads, white. Bracts ovate lanceolate, forming an involucre.

Fl. & Fr. : August - October.

Kinnaur (BSD, DD).

Himalaya, Assam and Deccan peninsula.

Leucas hyssopifolia Benth. in Wall. Pl. As. Rar. 1 : 60. 1830 ; Hook. f. Fl. Brit. India 4 : 690. 1885 ; Collett, Fl. Siml. 405. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 166. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 615. 1972.

Erect or decumbent hairy herb. Flowers in axillary and terminal whorls, white, bracts linear.

Fl. & Fr. : July - September.

Kangra (BSD, DD).

Subtropical Himalaya and plain from Jammu to Sikkim.

Leucas lanata Benth. in Wall. Pl. As. Rar. 1 : 61. 1830 ; Hook. f. Fl. Brit. India 4 : 681. 1885 ; Collett, Fl. Siml. 405. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 178. 1940 ; Nair, Fl. Bash. Himal. 220. 1977.

Perennial, silky - tomentose herb. Leaves ovate, thick, tomentose on both surfaces. Flowers white. Bracts setaceous, silky hairy.

Fl. & Fr. : April - November.

Chamba (BSD, DD, LWG), Kangra (BSD, DD, RRL), Kinnaur (BSD, DD, LWG), Kulu (DD), Mandi (BSIP, LWG), Simla (BSD, DD).

Throughout India.

Leucas mollissima Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 62. 1830 ; Hook. f. Fl. Brit. India 4 : 682. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 183. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 616. 1972.

Pubescent, weak herb. Leaves ovates-lanceolate, tomentose beneath. Flowers in axillary whorls, white. Bracts linear.

Fl. & Fr. : April - December.

Simla (BSIP), Una (DD).

Throughout India.

Leucas zeylanica R.Br. Prodr. 504. 1810 ; Hook. f. Fl. Brit. India 4 : 689. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 171. 1940.

Annual, hairy herb. Flowers in terminal heads, white. Bracts linear, spine-tipped.

Fl. & Fr. : July - September.

Kangra (DD).

Himalaya and Assam.

Lycopus europaeus L. Sp. Pl. 21. 1753 ; Hook. f. Fl. Brit. India 4 : 648. 1885 ; Collett, Fl. Siml. 390. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 102. 1940 ; Nair, Fl. Bash. Himal. 220. 1977.

Annual herb. Leaves lanceolate to elliptic - oblong, sinuately toothed. Flowers white, or bluish-white, small.

Fl. & Fr. : June - October.

Kinnaur (DD), Kulu (BSD).

Western Himalaya.

Marrubium lanatum Benth. Lab. Gen. et. Sp. 587. 1834 ; Hook. f. Fl. Brit. India 4 : 671. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 150. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 616. 1972.

Dwarf herb, covered with white woolly hairs, aromatic. Leaves deeply lobed. Flowers in terminal, woolly spikes.

Fl. & Fr. : July - August.

Chamba (Mukerjee, 1940).

Western Himalaya and Western Tibet.

Melissa axillaris (Benth.) Bakh. f. in Backer et Bakh. f. Fl. Java 2 : 629. 1965 ; Murata in Hara, Fl. E. Himal. 2 : 115. 1971. *Geniosporum axillare* Benth. in Wall. Pl. As. Rar. 2 : 18. 1830. *M. parviflora* Benth. in Wall. Pl. As. Rar. 1 : 65. 1830 ; Hook. f. Fl. Brit. India 4 : 651. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 100. 1940 ; Murata in Hara, Fl. E. Himal. 1 : 278. 1966.

Erect herb. Stem grooved. Flowers in axillary whorls, white or pale-pink.

Fl. & Fr. : July - September.

Chamba (DD).

Temperate Himalaya and Khasia Hills.

Mentha longifolia (L.) Huds. Fl. Angl. 221. 1762 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 617. 1972 ; Nair, Fl. Bash. Himal. 220. 1977. *M. spicata* var. *longifolia* L. Sp. Pl. 576. 1753. *Mentha sylvestris* L. Sp. Pl. ed. 2. 804. 1763 ; Hook. f. Fl. Brit. India 4 : 647. 1885 ;

Collett, Fl. Siml. 390. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 86. 1940.

Undershrub. Leaves hairy-tomentose on lower surface. Flowers pink-white.

Fl. & Fr. : July - September.

Chamba (DD), Kangra (RRL), Kulu (BSIP, RRL), Lahul and Spiti (BSD, BSIP, DD, RRL), Simla (LWG).

Temperate Western Himalaya and Western Tibet.

Mentha longifolia (L.) Huds var. ***incana*** (Willd.) Dinsm. 1932 ; Nair, Fl. Bash. Himal. 221. 1977. *M. incana* Willd. Enum. Hort. Berol. 609. 1809. *M. sylvestris* var. *incana* (Willd.) Hook. f. Fl. Brit. India 4 : 647. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 86. 1940.

Perennial herb. Leaves hoary-tomentose on lower surface. Flowers in interrupted spikes, pale-pink, calyx teeth, small.

Fl. & Fr. : July - September.

Chamba (DD), Kangra (DD), Kinnaur(DD), Kulu (DD), Simla (DD).

North-Western Himalaya.

Mentha longifolia (L.) Huds. var. ***royleana*** (Benth.) Rech. f. Sym. Afgh. 1 : 80. 1954 ; Nair, Fl. Bash. Himal. 221. 1977. *M. royleana* Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 29. 1830. *M. sylvestris* L. var. *royleana* (Benth.) Hook. f. Fl. Brit. India 4 : 647. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 87. 1940.

Perennial herb. Flowers in uninterrupted spikes, pale-pink. Calyx teeth lanceolate.

Fl. & Fr. : July - October.

Chamba (DD), Kinnaur (DD), Lahul and Spiti (DD), Simla (DD).

Western Himalaya.

Mentha viridis L. Sp. Pl. ed. 2. 804. 1762-63.

Perennial herb. Leaves lanceolate, sharply serrate. Flowers in whorls, in narrow interrupted spikes.

Fl. & Fr. : May - July.

Mandi (LWG).

Cultivated in gardens.

Meriandra strobilifera Benth. in Wall. Pl. As. Rar. 1 : 29. 1830 ; Hook. f. Fl. Brit. India 4 : 652. 1885 ; Collett, Fl. Siml. 393. f. 125. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 104. 1940 ; Parker, For. Fl. Punj. ed. 3. 411. 1956 ; Nair, Fl. Bash. Himal. 221. 1977.

Shrub. Leaves oblong-lanceolate, cordate, woolly on lower surface. Flowers in dense spikes, white.

Fl. & Fr. : April - September.

Kinnaur (BSD, DD).

Western temperate Himalaya, Himachal Pradesh and Kumaon.

✓ **Micromeria biflora** (Buch. - Ham.) Benth. Lab. Gen. et. Sp. 378. 1834 ; Hook. f. Fl. Brit. India 4 : 650. 1885 ; Collett, Fl. Siml. 391. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 96. 1940 ; Nair, Fl. Bash. Himal. 221. 1977. *Thymus biflorus* Buch. - Ham. in D. Don, Prodr. Fl. Nepal. 1825.

Low, wiry herb. Leaves thickened along margins. Flowers pink.

Fl. & Fr. : March - October.

Chamba (DD, LWG, RRL), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (BSD, DD, LWG), Solan (DD).

Tropical and temperate Himalaya, Nilgiris and Annamalai hills.

Micromeria biflora (Buch. - Ham.) Benth. var. *hispida* Kitamura et Murata in Fauna & Fl. Nepal Himal. 212. 1955.

Low herb. Leaves densely, hispid hairy on both the surfaces.

Fl. & Fr. : July - September.

Kinnaur (BSD).

Western Himalaya and Nepal.

Micromeria capitellata Benth. in DC. Prodr. 12 : 218. 1848 ; Hook. f. Fl. Brit. India 4 : 649. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 97. 1940.

Annual herb. Leave margins not thickend. Flowers violet.

Fl. & Fr. : September - October.

Simla (LWG).

Western Himalaya, Western Ghats, Nilgiris hills and Bihar.

Mosla dianthera (Buch-Ham.) Max. in Bull. Acad. Petersb. 20 : 457.

1875 ; Hook. f. Fl. Brit. India 4 : 647. 1885 ; Murata in Hara, Fl. E. Himal. 1 : 279. 1966. *Lycopus dianthera* Buch. - Ham. in Roxb. Fl. Ind. 1 : 144. 1820. *Mosla ocimoides* Buch. Ham. ex Benth. in Wall. Pl. As. Rar. 1 : 66. 1830 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 101. 1940.

Weak herb. Leaves ovate, acute, glandular on lower surface. Flowers white-pink or white-blue.

Fl. & Fr. : September - December.

Kangra (DD).

Tropical and temperate Himalaya, North Bengal and Khasia hills.

Nepeta campestris Benth. Lab. Gen. & Sp. 734. 1834 ; Hook. f. Fl. Brit. India 4 : 658. 1885 ; Collett, Fl. Siml. 397. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 123. 1940 ; Nair, Fl. Bash. Himal. 221. 1977.

Tall, pubescent herb. Leaves sessile. Flowers in whorls, blue.

Fl. & Fr. : May - August.

Simla (DD).

Temperate Western Himalaya.

Nepeta ciliaris Benth. in Wall. Pl. As. Rar. 1 : 64. 1830 ; Hook. f. Fl. Brit. India 4 : 661. 1885 ; Collett, Fl. Siml. 397. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 131. 1940 ; Nair, Fl. Bash. Himal. 222. 1977.

Soft, tomentose herb. Leaves ovate-cordate, tomentose beneath. Flowers in whorls, blue.

Fl. & Fr. : October - December.

Kinnaur (DD), Simla (BSIP, DD, LWG).

Temperate Western Himalaya.

Nepeta clarkei Hook. f. Fl. Brit. India 4 : 663. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 129. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 619. 1972.

Tall, erect herb. Leaves ovate-oblong or lanceolate. Flowers in distant whorls, blue.

Fl. & Fr. : August - September.

Chamba (DD).

Western Himalaya.

Nepeta connata Royle ex Benth. in Hook. Bot. Misc. 3 : 387. 1833 ;

Hook. f. Fl. Brit. India 4 : 657. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 121. 1940.

Perennial, decumbent herb. Leaves linear-lanceolate amplexicaule. Flowers in spikes, blue.

Fl. & Fr. : September - October.

Chamba (DD).

Temperate Western Himalaya.

Nepeta discolor Royle ex Benth. in Hook. Bot. Misc. 3 : 378. 1833 ; Hook. f. Fl. Brit. India 4 : 659. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 124. 1940 ; Nair, Fl. Bash. Himal. 222. 1977.

Perennial, decumbent herb. Leaves ovate, obtuse, ashy on lower surface. Flowers in uninterrupted spikes, blue.

Fl. & Fr. : June - November.

Chamba (BSD, DD, LWG), Kinnaur (BSD, DD), Lahul and Spiti (BSD, BSIP, DD), Simla (LWG).

Western temperate, alpine Himalaya and Western Tibet.

Nepeta elliptica Royle ex Benth. in Hook. Bot. Misc. 3 : 378. 1833 ; Hook. f. Fl. Brit. India 4 : 658. 1885 ; Collett, Fl. Siml. 397. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 122. 1940 ; Nair, Fl. Bash. Himal. 222. 1977.

Small, hairy herb. Leaves sessile, ovate-oblong, toothed. Flowers in uninterrupted spikes, blue.

Fl. & Fr. : August - November.

Kinnaur (DD), Kulu (DD), Simla (BSD, DD, LWG).

Temperate Western Himalaya.

Nepeta erecta (Royle ex Benth.) Benth. Lab. Gen. et Sp. 482. 1834 ; Hook. f. Fl. Brit. India 4 : 663. 1885 ; Collett, Fl. Siml. 399. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 129. 1940 ; Nair, Fl. Bash. Himal. 222. 1977. *Dracocephalum erectum* Royle ex Benth. in Hook. Bot. Misc. 3 : 380. 1833.

Tall, pubescent herb. Leaves petioled, ovate, crenate. Flowers in distant, sessile whorls, purple-blue.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD), Simla (BSD, DD).

Western Himalaya.

Nepeta eriostachya Benth. Lab. Gen. et Sp. 734. 1835 ; Hook. f. Fl. Brit. India 4 : 657. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 123. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. and Kash. 620. 1972.

Perennial, decumbent herb. Flowers in uninterrupted spikes, blue, purple or white.

Fl. & Fr. : June - September.

Kulu (BSD, DD), Lahul and Spiti (BSD, BSIP, DD, RRL).

Western temperate Himalaya.

Nepeta floccosa Benth. Lab. Gen. et Sp. 736. 1835 ; Hook. f. Fl. Brit. India 4 : 662. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 127. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 621. 1972.

Branched, woolly herb. Leaves long petioled, thick. Flowers in panicled whorls, violet-purple.

Fl. & Fr. : August - September.

Lahul and Spiti (DD).

Western Himalaya and Western Tibet.

Nepeta glutinosa Benth. Lab. Gen. et Sp. 735. 1835 ; Hook. f. Fl. Brit. India 4 : 660. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 126. 1940.

Erect herb. Stem glandular - pubescent. Leaves sessile, ovate, pectinately serrate. Flowers in axillary, short peduncled whorls, white or blue.

Fl. & Fr. : June - September.

Lahul and Spiti (BSD, DD).

Western sub-alpine Himalaya and Western Tibet.

Nepeta govaniiana (Benth.) Benth. Lab. Gen. et Sp. 482. 1834 ; Hook. f. Fl. Brit. India 4 : 663. 1885 ; Collett, Fl. Siml. 399. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 129. 1940 ; Nair, Fl. Bash. Himal. 223. 1977.
Dracocephalum govanianum Benth. in Wall. Pl. As. Rar. 1 : 65. 1830.

Erect herb. Leaves ovate crenate. Flowers in distant whorls, yellow.

Fl. & Fr. : July - October.

Chamba (DD), Kangra (BSIP, DD), Kulu (BSD, BSIP DD), Simla (DD, LWG).

Temperate Western Himalaya.

Nepeta graciliflora Benth. in Wall. Pl. As. Rar. 1 : 65. 1830; Hook. f. Fl. Brit. India 4 : 663. 1885; Collett, Fl. Siml. 399. 1902; Mukerjee in Rec. Bot. Surv. India 14(1) : 134. 1940.

Weak annual herb. Flowers in axillary and terminal, long peduncled whorls, pink to light violet.

Fl. & Fr. : July - August.

Kulu (BSD), Una (BSD).

Subtropical Himalaya and plains of Punjab and Western Uttar Pradesh.

Nepeta hindostana (Roth.) Haines, Bot. Bihar & Orissa 744. 1922 ; Mukerjee in Rec. Bot. Surv. India 14 (1) : 133. 1940 ; Nair, Fl. Bash. Himal. 223. 1977. *Glechoma hindostana* Roth. Nov. Sp. Pl. 258. 1821. *Nepeta ruderalis* Buch. - Ham. ex Benth. in Hook. f. Fl. Brit. India 4 : 661. 1855 ; Collett, Fl. Siml. 398. 1902.

Weak, annual herb. Flowers in axillary or terminal, dense whorls. Calyx nearly sessile.

Fl. & Fr. : May - November.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (RRL), Mandi (LWG), Simla (LWG), Solan (BSIP).

Tropical and subtropical parts of India.

Nepeta laevigata (D. Don) Hand. - Mazz. Symb. Sin. Anth. 4 : 916 1936 ; Nair, Fl. Bash. Himal. 223. 1977. *Betonica laevigata* D. Don, Prodr. Fl. Nepal. 110. 1825. *N. spicata* Benth. in Wall. Pl. As. Rar. 1 : 64 1830 ; Hook. f. Fl. Brit. India 4 : 659. 1885 ; Collett, Fl. Siml. 397. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 123. 1940.

Perennial herb. Leaves deltoid, ovate, crenate. Flowers in un-interrupted spikes, bluish - white or purple.

Fl. & Fr. : June - October.

Chamba (BSD, DD, RRL), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD, RRL), Lahul and Spiti (BSD, CDRI, DD, RRL), Simla (DD).

Western temperate Himalaya.

Nepeta leucophylla Benth. Lab. Gen. et. Sp. 476. 1834 ; Hook. f. Fl. Brit. India 4 : 662. 1885 ; Collett, Fl. Siml. 398. 1902 ; Mukerjee in Rec. Bot. Surv. India 14 (1) : 132. 1940 ; Nair, Fl. Bash. Himal. 223. 1977.

Tall, hoary, tomentose herb. Leaves shortly petioled, ovate. Flowers in interrupted whorls, blue or lilac.

Fl. & Fr. : August - October.

Kinnaur (DD), Kulu (DD), Simla (DD).

Temperate Western Himalaya.

Nepeta linearis Royle ex Benth. in Hook. Bot. Misc. 3 : 377. 1833 ; Hook. f. Fl. Brit. India 4 : 657. 1885 ; Collett, Fl. Siml. 396. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 121. 1940 ; Nair, Fl. Bash. Himal. 223. 1977.

Perennial herb. Leaves linear, entire. Flowers in sessile whorls, purple.

Fl. & Fr. : May - August.

Chamba (DD), Kinnaur (DD), Lahul and Spiti (DD).

Western temperate Himalaya.

Nepeta longibracteata Benth. Lab. Gen. et. Sp. 737. 1835 ; Hook. f. Fl. Brit. India 4 : 660. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 124. 1940.

Perennial, dwarf, strongly aromatic herb. Flowers blue. Bracts fan shaped, long, silky hairy.

Fl. & Fr. : June -September.

Lahul and Spiti (BSD, DD).

Alpine Western Himalaya and Western Tibet.

Nepeta prainii Duthie in Ann. Bot. Gard. Calc. 9 : 63. t. 77. 1901 ; Hedge in Notes Roy. Bot. Gard. Edinb. 28 (2) : 117. 1968 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 625. 1972. *N. mollis* (non Benth. 1835) Hook. f. Fl. Brit. India 4 : 660. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 30. 1940 ; Nair, Fl. Bash. Himal. 224. 1977. *N. distans* Benth. in Hook. f. Bot. Misc. 3 : 379. 1833 ; Hook. f. Fl. Brit. India 4 : 660. 1885 ; Collett, Fl. Siml. 397. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 131. 1940.

Tomentose herb. Flowers in sessile whorls, pale-pink.

Fl. & Fr. : May - September.

Chamba (DD), Kangra (RRL), Kulu (DD), Simla (DD).

Western temperate Himalaya.

Nepeta nervosa Royle ex Benth. in Hook. Bot. Misc 3 : 378. 1833 ; Hook. f. Fl. Brit. India 4 : 658. 1885 ; Mukerjee in Rec. Bot. Surv. India 14 (1) : 122. 1940.

Tall herb. Flowers in continuous spikes, pale-blue.

Fl. & Fr. : June - August.

Western temperate Himalaya.

Nepeta nivalis Benth. Lab. Gen. et. Sp. 737. 1835 ; Hook. f. Fl. Brit. India 4 : 664. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 127. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 624. 1972.

Erect or decumbent herb. Leaves sessile, orbicular, crenate. Flowers in axillary cymes, pale-blue,

Fl. & Fr. : July - August.

Western Himalaya and Western Tibet.

Nepeta royleana Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 625. 1972. *N. salviaefolia* Royle ex Benth. in Hook. Bot. Misc. 3 : 379. 1833 (non Pers. 1807) ; Hook. f. Fl. Brit. India 4 : 664. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 178. 1940.

Erect, tomentose herb. Flowers in interrupted whorls, purple-white.

Fl. & Fr. : July - September.

Mandi (LWG).

Temperate Western Himalaya and Western Tibet.

Nepeta tibetica Benth. Lab. Gen. et. Sp. 737. 1835 ; Hook. f. Fl. Brit. India 4 : 664. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 128. 1940.

Prostrate herb. Leaves reniform or orbicular, crenate. Flowers axillary, white.

Fl. & Fr. : July - August.

Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

Ocimum americanum L. Anoen. Acad. 4 : 276. 1755 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 626. 1972. *Ocimum canum* Sims. in Bot. Mag. 51 : t. 2452. 1824 ; Hook. f. Fl. Brit. India 4 : 607. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 17. 1940.

Perennial herb. Calyx small in fruits.

Fl. & Fr. : April - September.

Chamba (LWG, RRL), Kangra (RRL).

Himachal Pradesh to Nepal.

Ocimum basilicum L. Sp. Pl. 597. 1753 ; Hook. f. Fl. Brit. India 4 : 608. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 18. 1940.

Perennial herb. Flowers white or pink. Calyx villous within, upto 6 mm in fruits.

Fl. & Fr. : June - October.

Kangra (BSD).

Throughout tropical hotter parts of India.

Ocimum sanctum L. Mant. Pl. 1 : 85. 1767 ; Hook. f. Fl. Brit. India 4 : 609. 1885 ; Mukerjee in Rec. Bot. Surv. India 14 (1) : 19. 1940.

Softly hairy herb. Flowers pinkish-white or purple. Calyx glabrous within.

Fl. & Fr. : June - July.

Kulu (BSIP).

Throughout India

Origanum vulgare L. Sp. Pl. 590. 1753 ; Hook. f. Fl. Brit. India 4 : 648. 1885 ; Colett, Fl. Siml. 391. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 94. 1940 ; Nair, Fl. Bash. Himal. 224. 1977.

Hairy, annual herb. Flowers polygamous, pale-purple or white.

Fl. & Fr. : June - December.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD), Lahul and Spiti (BSD, BSIP, DD, RRL), Simla (BSD, BSIP, CDRI, DD), Solan (BSIP, DD).

Temperate Himalaya, Kashmir to Sikkim.

Orthosiphon diffusus Benth. in DC. Prodr. 12 : 50. 1848 ; Hook. f. Fl. Brit. India 4 : 613. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 22. 1940. *Plectranthus viscosus* Spreng. Syst. Veg. 2 : 691. 1835.

Diffused, viscidly - tomentose undershrub. Flowers in racemes. Calyx throat villous, ribbed in fruits. Nutlets obscurely reticulate.

Fl. & Fr. : March - April.

Western Himalaya, Deccan Peninsula and Nilgiri hills.

Orthosiphon pallidus Royal ex Benth. Lab. Gen. et Sp. 708. 1836 ; Hook. f. Fl. Brit. India 4 : 613. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 23. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 627. 1972.

Diffusely branched undershrub. Flowers in short, terminal racemes, white. Calyx throat naked.

Fl. & Fr. : March - October.

Simla (LWG).

North-Western India, Bihar and Peninsular India.

Orthosiphon rubicundus Benth. in Wall. Pl. As. Rar. 2 : 14. 1831 ; Hook. f. Fl. Brit. India 4 : 614. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 25. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 627. 1972.

Herb with nodulated rootstock. Leaves sessile, ovate-lanceolate, coarsely toothed. Flowers in terminal racemes, pink-violet.

Fl. & Fr. : April - August.

Chamba (BSIP).

Western subtropical Himalaya, Deccan Peninsula and Nilgiri hills.

Perilla frutescens (L.) Britt. in Mem. Torrey Bot. Cl. 5 : 277. 1894 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 627. 1972 ; Nair, Fl. Bash. Himal. 224. 1977. *Ocimum frutescens* L. Sp. Pl. 597. 1753. *Perilla ocimoides* auct. (non L.) Hook. f. Fl. Brit. India 4 : 646. 1885 ; Collett, Fl. Siml. 39b. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 85. 1940.

Erect herb. Stem grooved, angular. Flowers in axillary and terminal racemes, white.

Fl. & Fr. : May - August.

Chamba (RRL), Kangra (DD), Kinnaur (DD).

Tropical, temperate Himalaya and Khasia hills.

Perowskia atriplicifolia Benth. in DC. Prodr. 12 : 261. 1848 ; Hook.

f. Fl. Brit. India 4 : 652. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 103. 1940 ; Parkar, For. Fl. Panj. ed. 3. 407. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 628. 1972.

Undershud with white, stellate hairs. Flowers lavender coloured or white.

Fl. & Fr. : May - August.

Lahul and Spiti (*Hook. f.* 1885).

Western Himalaya and Western Tibet.

Phlomis bracteosa Royle ex Benth. in Hook. Bot. Misc. 3 : 383. 1833 ; Hook. f. Fl. Brit. India 4 : 693. 1885 ; Collett, Fl. Siml. 405. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 197. 1940 ; Nair, Fl. Bash. Himal. 224. 1977.

Robust herb. Leaves ovate, hairy on both the surfaces. Bracts without spines or inconspicuous spines. Flowers blue-purple.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, BSIP, DD, RRL), Simla (DD).

Western temperate Himalaya.

Phlomis macrophylla Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 62. 1830 ; Hook. f. Fl. Brit. India 4 : 692. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 196. 1940.

Tall herb. Leaves ovate, crenate, hispid. Bracts spinescent. Flowers bluish-white to pink.

Fl. & Fr. : July - October.

Simla (Mukerjee, 1940).

Temperate Himalaya, Himachal Pradesh to Sikkim.

Phlomis spectabilis Falc. ex Benth. in DC. Prodr. 12 : 542. 1848 ; Hook. f. Fl. Brit. India 4 : 692. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 194. 1940 ; Nair, Fl. Bash. Himal. 225. 1977.

Tall herb. Stem downy. Leaves, ovate, tomentose beneath. Bracts filiform. Flowers pink.

Fl. & Fr. : July - August.

Chamba (DD), Kinnaur (DD).

Himalaya, Kashmir to Bhutan.

Plectranthus japonicus (Burm. f.) Koidz. in Bot. Mag. Tokyo 43 : 386. 1929 ; Nair, Fl. Bash. Himal. 225. 1977. *P. coetsa* Buch. - Ham. ex D. Don, Prodr. Fl. Nepal. 117. 1825; Hook. f. Fl. Brit. India 4 : 619. 1885. *p.p.* ; Collett, Fl. Siml. 385. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 44. 1940.

Undershrub. Leaves ovate, crenate. Flowers in panicled cymes, light blue.

Fl. & Fr. : August. - November.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSD), Simla (BSIP, DD, LWG), Solan (BSIP).

Temperate and subtropical Himalaya.

Plectranthus mollis (Ait.) Spreng. Syst. Veg. 2 : 690. 1825 ; Santapau in Rec. Bot. Surv. India 16 : 243. 1953 ; Maruta in Ohashi, Fl. E. Himal. 3 : 95. 1975. *Ocinum molle* Ait. Hort. Kew 2 : 322. 1789. *Plectranthus incanus* Link. Enum. Hort. Berol. 2 : 120. 1822 ; Hook. f. Fl. Brit. India 4 : 621. 1885 ; Collett, Fl. Siml. 386. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 47. 1940 ; Nair, Fl. Bash. Himal. 225. 1977.

Annual herb. Flowers in cymose racemes, white with bluish tinge.

Fl. & Fr. : August - October.

Chamba (DD), Kangra (DD), Kulu (DD), Simla (DD).

Hilly parts of India.

Plectranthus striatus Benth. in Wall. Pl. As. Rar. 2 : 17. 1831 ; Hook. f. Fl. Brit. India 4 : 618. 1885 ; Collett, Fl. Siml. 385. 1902 ; Raizada *et al.* Fl. Muss. 577. 1978. *P. gerardianus* Benth. in Wall. Pl. As. Rar. 2 : 17. 1831 ; Hook. f. Fl. Brit. India 4 : 617. 1885 ; Collett, Fl. Siml. 385. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 43. 1940 ; Nair, Fl. Bash. Himal. 225. 1977.

Decumbent or erect herb. Leaves ovate, crenate. Flowers in panicled cymes, white or yellow.

Fl. & Fr. : August - November.

Kangra (DD), Kinnaur (BSD, DD), Simla (BSD, DD).

Temperate Himalaya and Khasia hills.

Pogostemon benghalensis (Burm. f.) O. Ktze. Rev. Gen. Pl. 2 : 529. 1891 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 629. 1972 ; Nair, Fl. Bash. Himal. 226. 1977. *Origanum benghalense* Burm. f. Fl. Ind. 128.

t. 38. f. 3. 1768. *Pogostemon plectranthoides* Desf. in Ann. Mus. Par. 2 : 155. 1815 ; Hook. f. Fl. Brit. India 4 : 632. 1885 ; Collett, Fl. Siml. 387. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 69. 1940 ; Parker, For. Fl. Punj. ed. 3. 408. 1956.

Shrub, young parts with grey tomentum. Leaves ovate, doubly serrate. Bracts foliaceous. Flowers light pink-purple.

Fl. & Fr. : January - August.

Kangra (RRL), Simla (DD).

Western Himalaya, Bengal, Bihar and South India.

Prunella vulgaris L. Sp. Pl. 600. 1753 ; Hook. f. Fl. Brit. India 4 : 670. 1885 (Brunella) ; Collett, Fl. Siml. 400. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 148. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 630. 1972 ; Nair, Fl. Bash. Himal. 226. 1977.

Annual herb. Flowers in terminal heads, pink, purple or violet.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD, RRL), Simla (BSD, CDRI, DD, LWG).

Temperate Himalaya, Khasia and Nilgiri hills.

Rabdosia coetsa (Buch. - Ham. ex D. Don) Hara in J. Jap. Bot. 47 : 194. 1972. *Plectranthus coetsa* Buch. - Ham. ex D. Don, Prodr. Fl. Nep. 117. 1825 ; Hook. f. Fl. Brit. India 4 : 619. 1885. *p.p.* *Isodon coetsa* (Buch - Ham. ex D. Don) Kudo in Mem. Fac. Sci. Agr. Taihoku Univ. 2 : 113. 1929.

Tall, erect, branched, strong-smelling undershrub. Leaves ovate, crenate, narrowed into a winged petiole. Flowers lavender-blue.

Fl. & Fr. : July - September.

Kashmir to Bhutan (Hara et al. 1982).

Rabdosia lophanthoides (Buch - Ham. ex D. Don) Hara in J. Jap. Bot. 47 : 197. 1972. *Hyssopus lophanthoides* Buch. - Ham. ex D. Don, Prodr. Fl. Nep. 110. 1825 ; Hook. f. Fl. Brit. India 4 : 618. 1885. *Plectranthus striatus* Benth. in Wall. Pl. As. Rar. 2 : 17. 1831 ; Hook. f. Fl. Brit. India 4 : 618. 1885. *Isodon striatus* (Benth.) Kudo in Mem. Fac. Sci. Agr. Taihoku Uni. 2 : 134. 1929.

Glabrous or pubescent herbs. Leaves broadly ovate, crenate. Flowers pinkish - white. Calyx hispid.

Fl. & Fr. : July - October.

Temperate Himalaya - Kashmir to Bhutan (Hara, 1982).

Rabdosia lophanthoides (Buch. - Ham. ex D. Don) Hara var. **gerardiana** (Benth.) Hara in J. Jap. Bot. 47 : 197. 1972. *Plectranthus gerardianus* Benth. in Wall. Pl. As. Rar. 2 : 17. 1831 ; Hook. f. Fl. Brit. India 4 : 617. 1885.

Tall, branched, nearly glabrous undershrub. Leaves large, acuminate, sparsely scaberulous. Flowers white, speckled with pink.

Fl. & Fr. : June - August.

Temperate Himalaya - Kashmir to Bhutan (Hara *et al.*, 1982).

Rabdosia repens (Wall. ex Benth.) Hara in J. Jap. Bot. 47 : 199. 1972. *Plectranthus repens* Wall. ex Benth. in Wall. Pl. As. Rar. 2 : 17. 1831 ; Hook. f. Fl. Brit. India 4 : 619. 1885. *Isodon repens* (Wall. ex Benth.) Murata in Acta. Phyt. Geobot. 22 : 21. 1966.

Villous, prostrate below herbs. Leaves long petioled, broadly ovate, obtuse, crenate.

Fl. & Fr. : June - September.

Himalaya - Kashmir to Bhutan (Hara *et al.*, 1982).

Rabdosia rugosa (Wall. ex Benth.) Hara in J. Jap. Bot. 47 : 199. 1972. *Plectranthus rugosus* Wall. ex Benth. in Wall. Pl. As. Rar. 2 : 17. 1831 ; Hook. f. Fl. Brit. India 4 : 620. 1885 ; Parker, For. Fl. Punj. ed. 3. 409. 1956 ; Nair, Fl. Bash. Himal. 226. 1977.

Shrub. Leaves ovate-elliptic, ashy or white on lower surface. Flowers purple or white spotted.

Fl. & Fr. : March - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (CDRI, DD, LWG), Simla (DD, LWG), Solan (BSIP, DD).

Western Himalaya.

Rabdosia ternifolia (D. Don) Hara in Journ. Jap. Bot. 47 : 201. 1972. *Plectranthus ternifolius* D. Don, Prodr. Fl. Nepal. 117. 1825 ; Hook. f. Fl. Brit. India 4 : 621. 1885 ; Collett, Fl. Siml. 386. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 40. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 629. 1972.

Shrub. Leaves in whorls, lanceolate, serrate. Flowers bluish-white.

Fl. & Fr. : August – October.

Simla (Collett, 1902).

Subtropical Himalaya, Bengal, Assam and Bihar.

Roylea cinerea (D. Don) Baill. Hist. Des. Pl. 11 : 36. 1891 ; Nair, Fl. Bash. Himal. 227. 1977. *Ballota cinerea* D. Don, Prodr. Fl. Nep. 111. 1825. *R. elegans* Wall. Pl. As. Rar. 1 : 57. t. 74. 1830 ; Hook. f. Fl. Brit. India 4 : 679. 1885. *R. calycina* (Roxb.) Briq. in Engl. and Prantl, Pflanzenfam. 4. 3 : 260. 1897 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 202. 1940 ; Parker, For. Fl. Punj. ed. 3. 410. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 630. 1972. *Phlomis calycina* Roxb. Fl. Ind. 3 : 11. 1832.

Undershrub. Stem branches finely tomentose. Flowers white.

Fl. & Fr. : March – November.

Chamba (BSD, BSIP, CDRI, DD), Kangra (RRL), Kinnaur (BSD, DD, LWG), Kulu (BSD, BSIP, DD, RRL), Mandi (LWG), Simla (DD, LWG), Solan (DD).

Subtropical Western Himalaya.

Salvia blans Royle ex Benth. in Hook. Bot. Misc. 3 : 373. 1833 ; Hook. f. Fl. Brit. India 4 : 653. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 115. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 630. 1972.

Viscid, hairy herb. Leaves ovate, hastate, margin toothed. Flowers blue.

Fl. & Fr. : July – October.

Chamba (DD, RRL).

Western temperate Himalaya.

Salvia lanata Roxb. Fl. Ind. 1 : 147. 1820 ; Hook. f. Fl. Brit. India 4 : 654. 1885 ; Collett, Fl. Siml. 395. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 108. 1940 ; Nair, Fl. Bash. Himal. 227. 1977.

Perennial herb. Stem cottony. Leaves mostly radical, sessile, oblanceolate, densely woolly beneath. Flowers pale-blue or violet-blue.

Fl. & Fr. : April – December.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSIP), Mandi (LWG), Simla (BSD, BSIP, DD, LWG, RRL).

Western temperate Himalaya.

Salvia leucantha Cav. Icon. 1 : 16. t. 24. 1791 ; Murata in Hara, Fl. E. Himal. 1 : 281. 1966.

Perennial herb. Leaves linear – lanceolate, serrate, whitish beneath. Flowers blue-violet, calyx woolly.

Fl. & Fr. : September – November.

Kangra (RRL), Simla (DD, LWG), Solan (RRL).

Subtropical and temperate Himalaya.

Salvia moorcroftiana Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 67. 1830 ; Hook. f. Fl. Brit. India 4 : 654. 1885 ; Collett, Fl. Siml. 394. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 110. 1940 ; Nair, Fl. Bash. Himal. 228. 1977.

Robust, woolly herb. Leaves petiolate, ovate, densely woolly beneath. Flowers white, pink-purple.

Fl. & Fr. : March – October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (DD, LWG), Solan (BSD, DD).

Western temperate Himalaya and Nepal.

Salvia nubicola Wall. ex Sweet, Brit. Fl. Gard. 2 : 140. 1825-28 ; Nair, Fl. Bash. Himal. 227. 1977. *S. glutinosa* Hook. f. Fl. Brit. India 4 : 653. 1885 ; Collett, Fl. Siml. 394. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 113. 1940.

Hairy herb. Flowers yellow.

Fl. & Fr. : July – October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (DD, LWG).

Temperate Himalaya, Kashmir to Sikkim.

Salvia plebeia R. Br. Prodr. Fl. Nov. Holl. 501. 1810 ; Hook. f. Fl. Brit. India 4 : 655. 1885 ; Collett, Fl. Siml. 395. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 111. 1940 ; Nair, Fl. Bash. Himal. 228. 1977.

Small, erect herb. Flowers small, white or blue.

Fl. & Fr. : May – July.

Chamba (DD), Kulu (DD), Mandi (BSD, LWG), Una (BSD).

Throughout India.

Salvia santolinaefolia Boiss. Diagn. Pl. Orient. ser. 1. 5 : 13. 1844 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 632. 1972. *S. aegyptiaca* var. *pumila* Hook. f. Fl. Brit. India 4 : 656. 1885.

Scabrid-hispid undershrub. Leaves linear-lanceolate, rigid, rugose. Calyx villous with long hairs.

Fl. & Fr. : August - November.

Kinnaur (DD).

North - Western India.

Scutellaria discolor Colebr. in Wall. Pl. As. Rar. 1 : 66. 1830 ; Hook. f. Fl. Brit. India 4 : 667. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 146. 1940.

Annual herb. Flowers in long terminal racemes, blue or violet.

Fl. & Fr. : May - October.

Kangra (BSD), Mandi (DD).

Subtropical Himalaya, Khasia hills and Western Ghats.

Scutellaria grossa Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 67. 1830 ; Hook. f. Fl. Brit. India 4 : 669. 1885 ; Collett, Fl. Siml. 400. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 146. 1940 ; Nair, Fl. Bash. Himal. 228. 1977.

Perennial herb. Leaves ovate, coarsely crenate. Flowers purple-blue or violet.

Fl. & Fr. : April - August.

Chamba (BSD, DD), Simla (BSD, DD).

Temperate Himalaya, Kashmir to Bhutan.

Scutellaria linearis Benth. in Wall. Pl. As. Rar. 1 : 66. 1830 ; Hook. f. Fl. Brit. India 4 : 669. 1885 ; Collett, Fl. Siml. 400. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 142. 1940 ; Nair, Fl. Bash. Himal. 228. 1977.

Tufted, dwarf herb. Leaves linear, entire. Flowers white-purple or blue.

Fl. & Fr. : May - August.

Chamba (DD), Simla (DD).

Temperate Western Himalaya.

Scutellaria prostrata Jacq. ex Benth. Lab. Gen. et Sp. 733. 1835 ; Hook. f. Fl. Brit. India 4 : 667. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 142. 1940 ; Nair, Fl. Bash. Himal. 229. 1977.

Subterete undershrubs. Flowers in terminal, spicate racemes, yellow or white with purple tips, rarely pure white. Bracts foliaceous.

Fl. & Fr. : June - September.

Chamba (BSD, DD), Kinnaur (DD), Lahul and Spiti (BSD, DD).

Western Himalaya and Nepal.

Scutellaria repens Buch. - Ham. in D. Don, Prodr. Fl. Nepal. 110. 1825 ; Hook. f. Fl. Brit. India 4 : 669. 1885 ; Collett, Fl. Siml. 400. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 229. 1940 ; Nair, Fl. Bash. Himal. 229. 1977.

Branched herb. Flowers white, yellow or pink.

Fl. & Fr. : Almost throughout the year.

Chamba (DD), Kinnaur (BSD).

Subtropical Himalaya, Kashmir to Sikkim,

Scutellaria scandens Buch. - Ham. ex D. Don, Prodr. Fl. Nep. 110. 1825 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 634. 1972. *Scutellaria angulosa* Benth. in Wall. Pl. As. Rar. 1 : 67. 1830 ; Hook. f. Fl. Brit. India 4 : 669. 1885 ; Collett, Fl. Siml. 400. 1902 ; Nair, Fl. Bash. Himal. 228. 1977.

Undershrub. Flowers in racemes, white-yellow.

Fl. & Fr. : March - September.

Chamba (LWG, RRL), Kinnaur (BSD, DD), Mandi (BSIP, LWG), Simla (BSIP, DD, LWG).

Temperate Western and Central Himalaya.

Stachys floccosa Benth. Lab. Gen. et Sp. 739. 1835 ; Hook. f. Fl. Brit. India 4 : 675. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 187. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 635. 1972.

Erect herb. Stem woolly. Leaves woolly beneath, soft pubescent above. Corolla woolly.

Fl. & Fr. : May - July.

Chamba (LWG), Kinnaur (DD), Kulu (DD), Simla (DD).

Western temperate Himalaya.

Stachys melissaefolia Benth. Lab. Gen. et Sp. 538. 1834 ; Hook. f. Fl. Brit. India 4 : 675. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 188. 1940 ; Nair, Fl. Bash. Himal. 229. 1977.

Erect herb. Flowers pink. Calyx teeth without spines.

Fl. & Fr. : June - October.

Kulu (BSD), Lahul and Spiti (BSD, DD).

Temperate Himalaya, Kashmir to Sikkim.

Stachys sericea Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 64. 1830 ; Hook. f. Fl. Brit. India 4 : 675. 1885 ; Collett, Fl. Siml. 402. 1902 ; Nair, Fl. Bash. Himal. 229. 1977.

Tall herb. Stem densely villous. Flowers pale-pink or purple. Calyx teeth spiny.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD), Mandi (LWG), Simla (BSD, DD, LWG).

Temperate Himalaya, Kashmir to Bhutan.

Stachys sylvatica L. Sp. Pl. 580. 1753 ; Hook. f. Fl. Brit. India 4 : 676. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 189. 1940 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 635. 1972.

Tall herb. Leaves ovate-cordate, serrate. Flowers in axillary whorls, pink.

Fl. & Fr. : June - July.

Chamba (RRL).

Western Himalaya.

Teucrium laxum D. Don, Prodr. Fl. Nepal. 109. 1825 ; Hook. f. Fl. Brit. India 4 : 701. 1885 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 225. 1940 ; Nair, Fl. Bash. Himal. 229. 1977.

Diffused, branched herb. Flowers white or pink. Bracts lanceolate. Corolla tube \pm equalling the calyx.

Fl. & Fr. : August - September.

Simla (BSD).

Western and Central Himalaya.

Teucrium quadrifarium Buch. – Ham. in D. Don, Prodr. Fl. Nepal. 108. 1925 ; Hook. f. Fl. Brit. India 4 : 701. 1885 ; Collett, Fl. Siml. 406. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 218. 1940 ; Nair, Fl. Bash. Himal. 230. 1977.

Tall, hairy herb. Leaves ovate, greyish – tomentose on lower surface. Flowers pink, pale-violet or blue. Bracts ovate, often purple.

Fl. & Fr. : August – September.

Kinnaur (DD), Simla (DD).

Temperate Himalaya and Khasia hills.

Teucrium royleanum Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 58. 1830 ; Hook. f. Fl. Brit. India 4 : 700. 1885 ; Collett, Fl. Siml. 406. 1902 ; Nair, Fl. Bash. Himal. 230. 1977.

Stoloniferous herb. Flowers white. Bracts lanceolate. Corolla tube twice as long as the calyx.

Fl. & Fr. : May – July.

Kinnaur (BSD, DD), Kulu (DD), Simla (DD).

Western Himalaya and Nepal.

Thymus linearis Benth. in Wall. Pl. As. Rar. 1 : 31. 1830. *Thymus serpyllum* L. ssp. *quinquecostatus* (Celak.) Kitamura in Fauna & Fl. Nep. Himal. 216. 1955 et Fl. Afghan 350. 1960 ; Nair, Fl. Bash. Himal. 230. 1977. *T. quinquecostatum* Celak. in Oster. Bot. Zeitschr. 39 : 263. 1889 ; *T. serpyllum* Hook. f. Fl. Brit. India 4 : 649. 1885 ; Collett, Fl. Siml. 391. 1902 ; Mukerjee in Rec. Bot. Surv. India 14(1) : 95. 1940 ; Parker, For. Fl. Punj. ed. 3. 407. 1956.

Prostrate herb. Leaves ovate-lanceolate, entire. Flowers pink or pale-purple.

Fl. & Fr. : March. – October.

Chamba (BSD, BSIP, DD, LWG), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD, LWG), Lahul and Spiti (BSD, RRL), Mandi (LWG), Simla (BSD, BSIP, DD, LWG).

Temperate Himalaya and Western Tibet.

PLANTAGINACEAE

H.J. CHOWDHERY, R. PRASAD AND B.M. WADHWA

Plantago asiatica L. Sp. Pl. 163. 1753 ; Decne. in DC. Prodr. 12 : 695. 1848 ; Hook. f. Fl. Brit. India 4 : 705. 1885 (in synonym, *P. major* L.).

Glabrous or hairy herbs. Spikes very long, slender. Seeds minute, black.

Fl. & Fr. : June - August.

Kangra (BSD), Lahul and Spiti (BSD).

Temperate and alpine Himalaya.

Plantago asiatica L. var. **densiuscula** Pilger in Nat. Bot. Gard. Berlin-Dahlem 8 : 107. 1922 ; Nair, Fl. Bash. Himal. 231. 1977.

Fl. & Fr. : July - September.

Kinnaur (DD).

Temperate and alpine Himalaya.

Plantago depressa Willd. Pl. Hort. Berol. Suppl. 8. 1813 ; Pilger in Pflanzenr. 4. 269. Heft 102 : 272. 1937 ; Kazmi in Fl. West Pak. 62 : 7. 1974 ; Nair, Fl. Bash. Himal. 231. 1977. *P. tibetica* Hook. f. Fl. Brit. India 4 : 706. 1885 ; Collett, Fl. Siml. 408. 1902.

Perennial herbs. Root-stock short, stout. Leaves ovate or ovate-lanceolate, usually 5-ribbed. Spikes cylindrical. Capsule containing 2-4 ovoid seeds.

Fl. & Fr. : May - September.

Chamba (BSD), Kinnaur (BSD), Kulu (BSD, LWG, RRL), Lahul and Spiti (BSD, DD, RRL), Simla (BSD, LWG).

North-Western Himalaya - Kashmir to Himanchal Pradesh.

Plantago erosa Wall. in Roxb. Fl. Ind. 1 : 423. 1820 ; Yamazaki in Hara, Fl. E. Himal. 1 : 306. 1966 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 680. 1972 ; Nair, Fl. Bash. Himal. 231. 1977. *P. major* Hook. f. Fl. Brit. India 4 : 705. 1885. *p.p.* ; Collett, Fl. Siml. 407. 1902.

Leaves distinctly stalked, usually 7-ribbed. Spike cylindric. Capsule 8-16 seeded.

Fl. & Fr. : April - October.

Kangra (LWG), Mandi (LWG), Simla (LWG).

Temperate and alpine Himalaya.

Plantago gentianoides Sibth. et Sm. in Fl. Graec. Prodr. 1 : 101. 1806. ssp. *griffithii* (Decne.) Rech. f. Fl. Iran. 15 : 9. 1965. *P. griffithii* Decne. in DC. Prodr. 13. 1 : 700. 1852. *P. gentianoides* var. *tartarica* (Decne.) Pilger in Notizbl. Bot. Gart. Berlin 9 : 1101. 1927. *P. gentianoides* var. *griffithii* (Decne.) Pilger in Feddes Repert. 21 : 100. 1925.

Fl. & Fr. : June - September.

Lahul and Spiti (DD).

Western Himalaya.

Plantago himalaica Pilger in Engl. Pflanzenr. 4. 269. Heft 102 : 62. 1937 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 681. 1972 ; Nair, Fl. Bash. Himal. 231. 1977. *P. brachyphylla* Edgew. ex Hook. f. Fl. Brit. India 4 : 706. 1885.

Perennial, glabrous herbs. Leaves ovate or ovate-lanceolate. Spike cylindric.

Fl. & Fr. : May - August.

Chamba (BSD, BSIP, DD), Kulu (BSD, BSIP, DD, RRL), Lahul and Spiti (BSD, DD, RRL), Simla (BSD).

North-Western Himalaya from Kashmir to Nepal.

Plantago lanceolata L. Sp. Pl. 113. 1753 ; Hook. f. Fl. Brit. India 4 : 706. 1885 ; Collett, Fl. Siml. 408. 1902 ; Kazmi in Fl. West Pak. 62 : 11. 1974.

Perennial herbs. Leaves lanceolate, 3-5 ribbed. Spikes ovoid. Capsule 2-4 seeded.

Fl. & Fr. : April - October.

Chamba (BSD, BSIP, CDRI, DD), Kangra (RRL), Kulu (BSD, DD, LWG), Mandi (BSIP, LWG), Simla (BSD, BSIP, DD).

North-Western Himalaya from Kashmir to Himanchal Pradesh and Nepal.

Plantago major L. Sp. Pl. 1 : 112. 1753 var. **angusta** (Pilger) Yamazaki in Hara, Fl. E. Himal. 1 : 306. 1966. *P. asiatica* L. var. *angusta* Pilger in Nat. Bot. Gard. Berlin Dahlem 9 : 90. 1927 et in Pflanzenr. 4. 269. Heft 102 : 59. 1937 ; Nair, Fl. Bash. Himal. 230. 1977.

Herbs. Leaves membranous, corolla lobes triquetro-ovate.

Fl. & Fr. : June - September.

Kinnaur (DD).

Temperate and alpine Himalaya.

Plantago ovata Forssk. Fl. Aegypt. - Arab. 31. 1775 ; Hook. f. in Fl. Brit. India 4 : 707. 1885 ; Kazmi in Fl. West Pak. 62 : 14. 1974.

Annual herbs. Stem rarely branching. Leaves usually 3-nerved, entire or distantly toothed. Scape glabrous or pubescent. Seed cymbiform.

Fl. & Fr. : January - March.

Kulu (CDRI).

Punjab plains and lower hills. Often cultivated.

NYCTAGINACEAE

H.J. CHOWDHERY AND B.M. WADHWA

Boerhavia diffusa L. Sp. Pl. 3. 1753 ; Nair, Fl. Bash. Himal. 232. 1977. *B. repens* L. Sp. Pl. 3. 1753 ; Hook. f. Fl. Brit. India 4 : 709. 1885 ; Collett, Fl. Siml. 410. 1902.

Prostrate herb. Flowers small, crowded in heads, pink.

Fl. & Fr. : April - October.

Chamba (DD), Kangra (RRL), Kinnaur (BSD); Mandi (BSIP), Simla (BSD, LWG).

Throughout India.

Commicarpus chinensis (L.) Heimert in Engler & Prantl, Nat. Pflanzen. f. ed. 2. 16 C : 117. 1934 ; Nasir in Fl. West Pakistan 115 : 12. 1977. *Valeriana chinensis* L. Sp. Pl. 33. 1753. *Boerhavia chinensis* (L.) Ascher & Scheroinf Beitr. Fl. Aethiop. 1 : 167. 1867. *B. chinensis* (Burm. f.) Druce in Rep. Bot. Exch. Cl. Brit. Isles 1913(3) : 415. 1914 ; Nair,

Fl. Bash. Himal. 232. 1977. *B. repanda* Willd. Sp. Pl. 1 : 22. 1797 ; Hook. f. Fl. Brit. India 4 : 709. 1885.

Herb with long internodes. Flowers pink. Fruits pointed.

Fl. & Fr. : May - September.

Chamba (DD), Kinnaur (DD), Simla (DD).

***Mirabilis himalaica* (Edgew.) Heim. in Notizbl. B. Gart. Mus. Berlin 11 : 454. 1932. *Oxybaphus himalaicus* Edgew. in Trans. Linn. Soc. 20 : 87. 1846 ; Hook. f. Fl. Brit. India 4 : 708. 1885 ; Collett, Fl. Siml. 410. 1902 ; Nair, Fl. Bash. Himal. 232. 1977.**

Glandular - hairy herb. Petals pink. Fruits with sticky glands.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kinnaur (BSD, DD).

Western Himalaya from Himachal Pradesh to Nepal.

***Mirabilis jalapa* L. Sp. Pl. 177. 1753 ; Nasir in Fl. W. Pakistan 115 : 3. 1977 ; Nair, Fl. Bash. Himal. 232. 1977.**

Erect herb with bulbous, tuberous roots. Flowers yellow, red or purple-white.

Fl. & Fr. : August - September.

Chamba (DD, RRL), Kinnaur (BSD, DD), Simla (BSIP).

Commonly cultivated.

ILLECEBRACEAE

B.M. WADHWA AND H.J. CHOWDHERY

***Herniaria hirsuta* L. Sp. Pl. 218. 1753 ; Hook. f. Fl. Brit. India 4 : 712. 1885 ; Collett, Fl. Siml. 410. 1902 ; Nair, Fl. Bash. Himal. 233. 1977.**

Prostrate, hirsute herb. Stem branches with long internodes, inflorescence stellate, cymose. Flowers green, hairy. Fruits 1 - seeded.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kinnaur (BSD, DD).

North-Western Himalaya.

AMARANTHACEAE

H.J. CHOWDHERY AND B.M. WADHWA

Achyranthes aspera L. Sp. Pl. 204. 1753 ; Hook. f. Fl. Brit. India 4 : 730. 1885 ; Collett, Fl. Siml. 414. 1902 ; C.C. Townsend in Fl. West Pakistan 71 : 33. 1974 ; Nair, Fl. Bash. Himal. 233. 1977.

Undershrub. Leaves leathery. Spikes robust, 30-45 cm long.

Fl. & Fr. : May - October.

Kinnaur (BSD, DD), Simla (BSD, BSIP).

Throughout India.

Achyranthes bidentata Blume, Bijdr. Fl. Nederl. Ind. 545. 1825 ; Hook. f. Fl. Brit. India 4 : 730. 1885 ; Collett, Fl. Siml. 414. 1902 ; C.C. Townsend in Fl. West Pakistan 71 : 37. 1974 ; Nair, Fl. Bash. Himal. 233. 1977.

Undershrub. Leaves thin, membranous. Spikes slender, rarely more than 10-12.5 cm long.

Fl. & Fr. : June - August.

Chamba (BSD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD, DD, RRL), Simla (BSIP, DD).

Temperate and subtropical Himalaya.

Aerva javanica (Burm. f.) Juss. ex J. A. Schultes, Syst. Veg. ed. 15. 15 : 565. 1819 ; Hook. f. Fl. Brit. India 4 : 727. 1885 ; C.C. Townsend in Fl. West Pakistan. 71 : 26. 1974. *Iresine javanica* Burm. f. Fl. Ind. 212. 1768. *Aerva tomentosa* Forssk. Fl. Aeg. - Arab. 122 : 170. 1755.

Under shrub. Spikes in large panicles, sessile. Flowers enveloped in long wool.

Fl. & Fr. : May - October.

Kulu (DD).

Throughout India.

Aerva sanguinolenta (L.) Blume, Bijdr. Fl. Nederl. Ind. 547. 1825 ; C.C. Townsend in Fl. West Pakistan 71 : 29. 1974 ; Nair, Fl. Bash. Himal. 233. 1977. *Achyranthes sanguinolenta* L. Sp. Pl. ed. 2. 294. 1762. *A. scandens* Roxb. Fl. Ind. 2 : 503. 1824. *Aerva scandens* (Roxb.) Moq. in DC. Prodr. 13(2) : 302. 1849 ; Hook. f. Fl. Brit. India 4 : 727. 1885 ; Collett, Fl. Siml. 441. 1902.

Climbing undershrub. Flowers silvery-white.

Fl. & Fr. : June – October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (LWG), Simla (BSD, DD, LWG), Mandi (BSIP, LWG), Simla (BSIP).

Throughout India.

Alternanthera sessilis (L.) R. Br. ex DC. Cat. Hort. Moesp. 77. 1813 ; Hook. f. Fl. Brit. India 4 : 731. 1885 ; Collett, Fl. Siml. 415. 1902 ; C.C. Townsend in Fl. West Pakistan 71 : 41. 1974. *Gomphrena sessilis* L. Sp. Pl. 225. 1753.

Herb. Flowers minute, white, crowded in very short, head like sessile, axillary spikes.

Fl. & Fr. : April – September.

Kangra (DD, RRL), Mandi (BSIP), Solan (DD).

Throughout the hotter parts of India.

Amaranthus caudatus L. Sp. Pl. 990. 1753 ; Hook. f. Fl. Brit. India 4 : 719. 1885 ; C.C. Townsend in Fl. West Pakistan 71 : 10. 1974 ; Collett, Fl. Siml. 411. 1902 ; Nair, Fl. Bash. Himal. 234. 1977.

Herb with tall, robust stem. Spikes long, tail like and drooping.

Fl. & Fr. : June – September.

Kinnaur (BSD).

Cultivated in various parts of India.

Amaranthus graecizans L. ssp. *thellungianus* (Nevski) Gusev. in Bot. Journ. 57 : 462. 1972. *A. thellungianus* Nevski in Act. Acad. Sc. U.R.S.S. 1(4) : 311. 1937. *A. polygamus* sensu Hook. f. Fl. Brit. India 4 : 721. 1885 (non L. *p.p.*). *A. roxburghianus* Nevski sensu Nair, Fl. Bash. Himal 234. 1977.

Herb.

Fl. & Fr. : August – September.

Kinnaur (BSD).

Throughout India.

Amaranthus hybridus L. ssp. *cruentus* (L.) Thell. in Fl. Adv. Montpellier 38 : 205. 1912 ; C.C. Townsend in Fl. West Pakistan 71 : 12. 1974. *A. cruentus* L. Syst. Nat. ed. 10. 2 : 1269. 1759.

Herb.

Fl. & Fr. : May – September.

Chamba (BSD), Kinnaur (BSD).

Throughout India.

Amaranthus lividus L. Sp. Pl. 990. 1753 ; C.C. Townsend in Fl. West Pakistan 71 : 17. 1974. *A. blitum* L. Sp. Pl. 990. 1753 *nom. ambi.* Hook. f. Fl. Brit. India 4 : 721. 1885 excl. var. *sylvestris*.

Herb.

Fl. & Fr. : July – October.

Kulu (BSD).

Throughout India.

Amaranthus spinosus L. Sp. Pl. 991. 1753 ; Hook. f. Fl. Brit. India 4 : 718. 1885 ; C.C. Townsend in Fl. West Pakistan 71 : 9. 1974 ; Nair, Fl. Bash. Himal. 234. 1977.

Herb, stem erect, glabrous. Leaves long petioled, leaf axils with spines. Flowers in axillary clusters. Plant varies in colour from green to purplish-red.

Fl. & Fr. : June – August.

Chamba (BSD), Kangra (RRL), Kinnaur (BSD), Kulu (DD), Simla (BSD, DD).

Throughout India.

Amaranthus tricolor L. Sp. Pl. 989. 1753 ; C.C. Townsend in Fl. West Pakistan 71 : 13. 1974 ; Nair, Fl. Bash. Himal. 234. 1977. *A. tristis* L. Sp. Pl. 989. 1753. *A. gangeticus* L. Syst. Nat. ed. 10. 2 : 1268 1759 ; Hook. f. Fl. Brit. India 4 : 719. 1885. *A. polygamous* L. Mant. Pl. 1 : 35. 1755 (non Hook. f. 1885).

Erect, stout herb with numerous variegated leaves. Seeds black.

Fl. & Fr. : June – August.

Kinnaur (BSD).

Throughout India.

Amaranthus viridis L. Sp. Pl. ed. 2. 1405. 1763 ; Hook. f. Fl. Brit. India 4 : 720. 1885 ; C.C. Townsend in Fl. West Pakistan 71 : 14. 1974 ; Nair, Fl. Bash. Himal. 234. 1977.

Herb. Leaves long petioled, ovate. Clusters very small, green, in axillary or terminal, paniced slender spikes.

Fl. & Fr. : April - June.

Kangra (RRL).

Throughout India.

Bosia amherstiana (Moq.) Hook. f. Fl. Brit. India 4 : 716. 1885 ; Collett, Fl. Siml. 412. 1902 ; C.C. Townsend in Fl. West Pakis. 71 : 6. 1974 ; Nair, Fl. Bash. Himal. 235. 1977. *Rodetia amherstiana* Moq. in DC. Prodr. 12(2) : 323. 1848.

Glabrous, erect shrub. Flowers green, crowded in axillary spikes. Fruit berry-like, red, globose.

Fl. & Fr. : May - November

Chamba (BSD, DD), Kinnaur (BSD), Lahul and Spiti (DD), Simla (DD).

Western temperate Himalaya.

Celosia argentea L. Sp. Pl. 205. 1753 ; Hook. f. Fl. Brit. India 4 : 714. 1885 ; C.C. Townsend in Fl. West Pakistan 71 : 5. 1974 ; Nair, Fl. Bash. Himal. 235. 1977.

Glabrous, erect herb. Spikes long penduncled. Flowers white.

Fl. & Fr. : August - September.

Chamba (DD), Kinnaur (BSD, DD), Simla (DD).

Throughout India.

Cyatula capitata Moq. in DC. Prodr. 13(2) : 329. 1849 ; Hook. f. Fl. Brit. India 4 : 722. 1885 ; Collett, Fl. Siml. 414. 1902 ; Nair, Fl. Bash. Himal. 235. 1977.

Hairy undershrub. Flowers white.

Fl. & Fr. : August - October.

Chamba (DD, RRL), Simla (DD).

Throughout Himalaya.

Cyathula tomentosa (Roth.) Moq. in DC Prodr. 13(2) : 327. 1849 ; Hook. f. Fl. Brit. India 4 : 722. 1885 ; Collett, Fl. Siml. 413. 1902 ; Nair, Fl. Bash. Himal. 235. 1977. *Achyranthes tomentosa* Roth, Nov. Sp. Ind. 167. 1821.

Densely woolly undershrub. Spikes long stalked, sepals linear lanceolate, ending in hooked awns.

Fl. & Fr. : July - September.

Chamba (DD, RRL), Kinnaur (DD), Simla (CDRI, DD).

Temperate Himalaya.

Deeringia amaranthoides (Lam.) Merr. Interpr. Rumph. Herb. Amboin. 211. 1917 ; C.C. Townsend in Fl. West Pakistan 71 : 4. 1974 ; Nair, Fl. Bash. Himal. 235. 1977. *Acyranthes amaranthoides* Lam. Encycl. Meth. 1 : 548. 1785. *Derrigia celosioides* R. Br. Prodr. Fl. Nov. Holl. 413. 1810 ; Hook. f. Fl. Brit. India 4 : 714. 1885 ; Collett, Fl. Siml. 412. 1902.

Climbing undershrub. Flowers white, shining. Fruit, membranous.

Fl. & Fr. : May - November.

Chamba (DD, RRL) Kinnaur (DD), Simla (DD).

Subtropical Himalaya.

Gomphrena celosioides Mart. Beitr. Amar. 93. 1825 ; C.C. Townsend in Fl. West Pakistan 71 : 44. 1974 ; Nair, Fl. Bash. Himal. 236. 1977.

Herbs. Heads sessile.

Fl. & Fr. : August - October.

Kinnaur (BSD).

Subtropical Himalaya.

Pupalia lappacea (L.) Juss. in Ann. Mus. Hist. Nat. Paris, 2 : 132. 1803 ; Hook. f. Fl. Brit. India 4 : 724. 1885 ; C.C. Townsend in Fl. West Pakistan 71 : 24. 1974 ; Nair, Fl. Bash. Himal. 236. 1977. *Achyranthes lappacea* L. Sp. Pl. 204. 1753.

Large, straggling, undershrub. Leaves tomentose.

Fl. & Fr. : September - October.

Kinnaur (BSD, DD).

Throughout India.

CHENOPODIACEAE

H. J. CHOWDHERY

Acroglochis persicarioides (Poir.) Moq. in DC. Prodr. 13(2) : 254. 1849. *Amaranthus persicarioides* Poir. in Encycl. Meth. Bot. Suppl. 1 : 311. 1810. *Acroglochis chenopodioides* Schrad. ex Schultes, Mant. 1(2) : 227. 1822 ; Hook. f. Fl. Brit. India 5 : 2. 1886 ; Collett, Fl. Siml. 415. 1902 ; Nair, Fl. Bash. Himal. 236. 1977.

Erect, glabrous herbs. Leaves margins irregularly lobed. Flowers bisexual, clustered in short axillary cymes bearing numerous needle like branchlets. Urlicles flattened, discoid, exposed.

Fl. & Fr. : July - September.

Chamba (DD), Kinnaur (BSD, DD).

Himalaya.

Atriplex crassifolia C. A. Mey. in Ledeb. Ic. Fl. Ross. 1 : 11. t. 42. 1829 ; Hook. f. Fl. Brit. India 5 : 6. 1886 ; Collett, Fl. Siml. 417. 1902 ; Nair, Fl. Bash. Himal. 236. 1977.

Erect or diffuse herbs, stem and branches white. Flowers unisexual, on the same plant. Urlicles enclosed by much enlarged leaf - like bracts.

Fl. & Fr. : June - September.

Kinnaur (BSD, DD), Lahul and Spiti (DD).

North-Western India.

Atriplex hortensis L. Sp. Pl. 1053. 1753 ; Hook. f. Fl. Brit. India 5 : 6. 1886 ; Nair, Fl. Bash. Himal. 236. 1977.

Erect herbs with triangular-cordate leaves.

Fl. & Fr. : July - September.

Chini (DD).

Cultivated in many parts of India. Commonly known as mountain spinach.

Axyris hybrida L. Sp. Pl. 980. 1753. *Axyris amaranthoides* (non L. Sp. Pl. 979. 1753) Hook. f. Fl. Brit. India 5 : 8. 1886 ; Nair, Fl. Bash. Himal. 236. 1977.

Erect herbs branching from the base. Leaves pale-yellowish or reddish-brown when dry.

Fl. & Fr. : June – September.

Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD).

Western Himalaya, drier regions.

Beta vulgaris L. forma **cicla** L. Sp. Pl. 222. 1753 ; Nair, Fl. Bash. Himal. 237. 1977. *B. vulgaris* Hook. f. Fl. Brit. India 5 : 5. 1886 (non L.).

Cultivated throughout India, beet-root.

Fl. & Fr. : May – September.

Kinnaur (BSD), Simla (DD).

Throughout India.

Chenopodium album L. Sp. Pl. 219. 1753 ; Hook. f. Fl. Brit. India 5 : 3. 1886 ; Collett, Fl. Siml. 416. 1902 ; Nair, Fl. Bash. Himal. 237. 1977.

Erect, glabrous herbs, mealy white on the flowers and under side of the leaves. Flowers in clusters, in axillary spikes, often tinged with purple. Urlicles entirely covered by the persistent perianth.

Fl. & Fr. : June – October.

Chamba (BSD, DD), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSD, DD, RRL).

Tropical and temperate Himalaya.

Chenopodium amaranticolor (Coste & Reyn.) Coste & Reyn. in Bull. Soc. Bot. Fr. 54 : 181. 1907 ; Nair, Fl. Bash. Himal. 237. 1977. *C. album* ssp. *amaranticolor* Coste & Reyn. in Bull. Herb. Boiss. 2(5) : 979. 1905.

Erect herb, purplish-red. Leaves red on the lower surface due to a powdery secretion.

Fl. & Fr. : July – September.

Kinnaur (BSD).

Throughout India.

Chenopodium ambrosioides L. Sp. Pl. 219. 1753 ; Hook. f. Fl. Brit. India 5 : 4. 1886 ; Nair, Fl. Bash. Himal. 237. 1977.

Tall, aromatic, glandular, puberulous herbs. Flowers clustered in slender, axillary and terminal, simple or paniced spikes.

Fl. & Fr. : June - September.

Kangra (BSD, RRL), Kinnaur (BSD, DD), Simla (BSD, DD).

Throughout India.

Chenopodium botrys L. Sp. Pl. 219. 1753 ; Hook. f. Fl. Brit. India 5 : 4. 1886 ; Collett, Fl. Siml. 416. 1902 ; Nair, Fl. Bash. Himal. 237. 1977.

Strongly aromatic, glandular-pubescent herbs. Leaves pinnately lobed. Flowers clustered in a large, terminal panicle.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate Himalaya.

Chenopodium foliosum (Moench) Asch. Prodr. Fl. Brand. 1 : 572. 1863 ; Nair, Fl. Bash. Himal. 238. 1977. *Morocarpus foliosum* Moench, Meth. 342. 1794. *C. blitum* Hook. f. Fl. Brit. India 5 : 5. 1886.

Erect or ascending, glabrous herbs. Leaves triangular, hastate, deeply toothed. Spikes leafy. Perianth fleshy.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Lahul & Spiti (BSD, DD, RRL).

North-Western India and Himalaya.

Chenopodium glaucum L. Sp. Pl. 220. 1753 ; Hook. f. Fl. Brit. India 5 : 4. 1886.

Erect, glandular-pubescent, succulent, much branched herbs. Leaves very mealy beneath. Flowers in short, dense, axillary-spikes.

Fl. & Fr. : July - September.

Lahul and Spiti (BSD, DD).

Himachal Pradesh, Western Tibet and Ladakh.

Chenopodium hybridum L. Sp. Pl. 219. 1753 ; Hook. f. Fl. Brit. India 5 : 3. 1886 ; Nair, Fl. Bash. Himal. 238. 1977.

Erect, glabrous herbs. Leaves broadly triangular. Flowers in lax, axillary and terminal corymbose.

Fl. & Fr. : June - September.

Kinnaur (BSD, DD), Lahul and Spiti (BSD).

Himachal Pradesh, Western Tibet and Ladakh.

Chenopodium murale L. Sp. Pl. 219. 1753 ; Hook. f. Fl. Brit. India 5 : 4. 1886 ; Nair, Fl. Bash. Himal. 238. 1977.

Erect, glabrous herbs. Leaves bright-green, rhombic, sharply toothed. Flowers in axillary, divaricate cymes.

Fl. & Fr. : June - September.

Kinnaur (BSD), Lahul and Spiti (RRL), Simla (BSD).

North-Western India.

Chenopodium opulifolium Schrader ex Koch & Ziz, Cat Pl. Palat. 6. 1814 ; Hook. f. Fl. Brit. India 5 : 3. 1886 ; Collett, Fl. Siml. 416. 1902.

Erect herbs with mealy leaves.

Fl. & Fr. : May - October.

Simla (DD).

Central and Western Himalaya.

Eurotia ceratoides C. A. Mey. in Ledeb. Fl. Alt. 4 : 239. 1853; Hook. f. Fl. Brit. India 5 : 8. 1886 ; Parker, For. Fl. Punj. ed. 3. 414. 1956.

Dense, hoary shrubs. Leaves stellate-tomentose. Flowers minute, unisexual, in axillary spikes.

Fl. & Fr. : June - September.

Kinnaur (Hook. f. 1886 & Parker, 1956).

Western Himalaya drier regions and Western Tibet.

Kochia indica Wt. Ic. t. 1791. 1852 ; Hook. f. Fl. Brit. India 5 : 11. 1886 ; Nair, Fl. Bash. Himal. 238. 1977.

Softly villous, diffusely branched herbs. Leaves small, elliptic or linear-oblong, acute. Fruiting perianth broadly triangular.

Fl. & Fr. : August - September.

Kinnaur (BSD).

North-Western India.

Kochia prostrata (L.) Schrader Neues Journ. 3 : 85. 1809 ; Hook. f. Fl. Brit. India 5 : 10. 1886 ; Nair, Fl. Bash. Himal. 238. 1977.

Villously pubescent undershrubs. Leaves flat, linear. Spikes long, leafy. Fruiting perianth subquadrate, hard and scarious.

Fl. & Fr. : July – October.

Chamba (DD), Kinnaur (DD), Kulu (BSD).

Western Himalaya.

Kochia stellaris Moq. *Chenop. Enum.* 93. 1840. *K. odontoptesa* Schrenk in *Bull. Acad. Petersb.* 1 : 361. 1843 ; Hook. f. *Fl. Brit. India* 5 : 11. 1886.

Densely tomentose or pubescent herbs, diffusely branched from the base. Leaves small, linear, flat. Fruiting perianth cuneate.

Fl. & Fr. : June – July.

Lahul and Spiti (DD).

Western Tibet and Himachal Pradesh.

Krascheninnikovia ceratoides (L.) Guelden. *Novi Comm. Acad. Sci. Petrop.* 16 : 555. 1772. *Axyris ceratoides* L. *Sp. Pl.* 979. 1753. *Eurotia ceratoides* (L.) C. A. Mey. in *Ledeb. Fl. Alt.* 4 : 239. 1833 ; Hook. f. *Fl. Brit. India* 5 : 8. 1886.

Herbs, hoary with stellate hairs. Leaves linear-oblong. Fruiting bracts crowded, silky-villous with long, reddish hairs.

Fl. & Fr. : June – August.

Lahul and Spiti (BSIP, DD).

Western Himalaya and Nepal.

Microgynoecium tibeticum Hook. f. *Fl. Brit. India* 5 : 9. 1886.

Small, prostrate, hairy herbs. Leaves thick, fleshy. Flowers minute, clustered and enclosed amongst leaves. Male flowers ebracteate, female bracteate.

Fl. & Fr. : July – September.

Lahul and Spiti (BSD).

Himalaya and Western Tibet.

Salsola collina Pall. *Ill. Pl.* 34. t. 28. 1803 ; Hook. f. *Fl. Brit. India* 5 : 17. 1886.

Erect or decumbent herbs. Leaves flaccid, sessile, pungent. Fruiting perianth membranous.

Fl. & Fr. : July - September.

Lahul and Spiti (BSD).

Western Himalaya and Western Tibet.

Suaeda microsperma (C. A. Mey.) Fenzl. in Ledeb. Fl. Ross. 3 : 785. 1851 ; Hook. f. Fl. Brit. India 5 : 15. 1886. *Schoberia microsperma* C. A. Mey. in Eichw. Pl. Casp. Cauc. 14. t. 13. 1845.

Diffuse herbs branching from the base.

Fl. & Fr. : July - August.

Lahul and Spiti (DD).

Western Tibet, Ladakh and Himachal Pradesh.

BASELLACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Boussingaultia cordifolia Tenore in Ann. Sci. Nat. Ser. 3. 19 : 355. 1853 ; Harms in Engl. Pflanzenfam. ed. 2. 16 C : 271. (in adnota) 1934. *B. baselloides* auct. (non Humb. & Kunth.) Hook. f. in Bot. Mag. 64 : t. 3620. 1837.

Fl. & Fr. : July - October.

Solan (DD).

North-Western and Central Himalaya.

PHYTOLACCACEAE

B. M. WADIWA AND H. J. CHOWDHERY

Phytolacca acinosa Roxb. Fl. Ind. ed. 2. 2 : 458. 1832 ; Hook. f. Fl. Brit. India 5 : 21. 1886 ; Collett, Fl. Siml. 418. 1902 ; Hara, Fl. E. Himal. 1 : 78. 1966 ; Nair, Fl. Bash. Himal. 239. 1977.

Erect, succulent herb. Stem hollow. Flowers in leaf opposed racemes, tepals green. Fruit dark purple.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kufu (BSD, DD), Lahul and Spiti (BSD), Simla (DD).

Temperate Himalaya, also cultivated.

POLYGONACEAE

H. J. CHOWDHERY

Aconogonum rumicifolium (Royle ex Bab.) Hara, Fl. E. Himal. 632. 1966 ; Nair, Fl. Bash. Himal. 239. 1977. *Polygonum rumicifolium* Royle ex Babington in Trans. Linn. Soc. 18 : 112. 1838 ; Hook. f. Fl. Brit. India 5 : 51. 1886.

Sparsely puberulous or glabrous herbs. Leaves succulent. Flowers greenish-yellow.

Fl. & Fr. : June - September.

Kinnaur (BSD), Lahul and Spiti (BSD, DD), Simla (BSD, DD).

Western Himalaya and Nepal.

Bilderdykia pterocarpa (Wall.) Greene, Leaf. 1 : 23. 1904 ; Nair, Fl. Bash. Himal. 239. 1977. *Polygonum pterocarpum* Wall. ex Meissn. in Wall. Pl. As. Rar. 3 : 62. 1832 ; Hook. f. Fl. Brit. India 5 : 54. 1886 ; Collett, Fl. Siml. 426. 1902.

Glabrous, twining, grooved herbs. Flowers green or tinged with pink, on curved stalks.

Fl. & Fr. : June – October.

Chamba (DD), Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya.

Bistorta amplexicaulis (D. Don) Greene, Leaflet 1 : 21. 1904 ; Nair, Fl. Bash. Himal. 239. 1977. *Polygonum amplexicaule* D. Don, Prodr. Fl. Nepal. 70. 1825 ; Hook. f. Fl. Brit. India 5 : 32. 1886 ; Collett, Fl. Siml. 421. 1902.

Erect, nearly glabrous, tufted herbs. Leaves minutely crenate, lower long-stalked, upper stem clasping. Flowers pink or deep red.

Fl. & Fr. : June – October.

Chamba (BSD, DD, RRL), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (DD), Simla (BSD, CDRI, DD).

Temperate Himalaya.

Bistorta emodi (Meisn.) Hara, Fl. East. Himal. 69. 1966 ; Nair, Fl. Bash. Himal. 240. 1977. *Polygonum emodi* Meisn. in Wall. Pl. As. Rar. 3 : 51. t. 287. 1832 ; Hook. f. Fl. Brit. India 5 : 33. 1886 ; Collett, Fl. Siml. 421. 1902.

Woody, glabrous, prostrate herbs. Flowers red, in erect, terminal racemes.

Fl. & Fr. : June – September.

Kinnaur (DD).

Temperate Himalaya.

Bistorta macrophylla (D. Don) Sojak in Preslia 46 : 152. 1974. *Polygonum macropylum* D. Don, Prodr. Fl. Nepal. 70. 1825 ; Nair, Fl. Bash. Himal. 244. 1977. *Polygonum sphaerostachyum* Meisn. Monog. Polyg. 53. 1826 ; Hook. f. Fl. Brit. India 5 : 32. 1886. *p.p.* *Bistorta sphaerostachya* (Meisn.) Greene, Leaflet 1 : 21. 1904.

Herbs with drooping spikes of brilliantly coloured flowers.

Fl. & Fr. : June – September.

Kinnaur (DD).

Temperate and subalpine Himalaya.

Bistorta vacciniifolia (Wall.) Greene, Leafl. 1 : 21. 1904. *Polygonum vacciniifolium* Wall. ex Meisn. in Wall. Pl. As. Rar. 3 : 54. 1832 ; Hook. f. Fl. Brit. India 5 : 33. 1886 ; Parker, For. Fl. Punj, ed. 3. 419. 1956.

Tufted, glabrous, creeping herbs. Leaves glaucous beneath. Flowers rose-red.

Fl. & Fr. : July - September.

Chamba (DD), Kangra (DD), Kinnaur (DD), Lahul and Spiti (BSD, DD).

Temperate and subalpine Himalaya.

Fagopyrum dibotrys (D. Don) Hara, Fl. East. Himal. 68. 1966 ; Nair, Fl. Bash. Himal. 240. 1977. *Polygonum dibotrys* D. Don, Prodr. Fl. Nep. 73. 1825. *F. cymosum* (Trev.) Meisn. in Wall. Pl. Asiat. Rar. 3 : 63. 1832 ; Hook. f. Fl. Brit. India 5 : 55. 1886 ; Collett, Fl. Siml. 426. 1902.

Erect, branched, pubescent herbs. Flowers white, small, in racemes.

Fl. & Fr. : April - October.

Chamba (BSD, DD), Kangra (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD, RRL), Simla (BSD, DD).

Temperate Himalaya.

Fagopyrum esculentum Moench, Meth. 290. 1794 ; Hook. f. Fl. Brit. India 5 : 55. 1886 ; Nair, Fl. Bash. Himal. 240. 1977. *Polygonum fagopyrum* L. Sp. Pl. 364. 1753.

Glabrous herbs. Perianth pinkish-white, anthers green. Cultivated for fruits.

Fl. & Fr. : May - September.

Chamba (DD), Kinnaur (BSD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD), Simla (DD).

Cultivated throughout the Himalaya.

Fagopyrum tataricum (L.) Gaertn. Fruct. et. Sem. 2 : 182. t. 119. f. 6. 1791 ; Hook. f. Fl. Brit. India 5 : 55. 1886 ; Nair, Fl. Bash. Himal. 240. 1977. *Polygonum tataricum* L. Sp. Pl. 364. 1753.

Glabrous herbs. Perianth white. Cultivated for fruits.

Fl. & Fr. : July - September.

Chamba (DD), Kulu (BSD), Lahul and Spiti (BSD), Simla (DD).

Cultivated in Himalaya.

Koenigia delicatula (Meisn.) Hara, Fl. East. Himal. 70. 1966 ; Nair, Fl. Bash. Himal. 241. 1977. *Polygonum delicatulum* Meisn. in DC. Prodr. 14 : 127. 1856 ; Hook. f. Fl. Brit. India 5 : 24. 1886.

Delicate, tufted, flaccid herbs growing near streams. Flowers minute, in axillary clusters.

Fl. & Fr. : July - September.

Kangra (BSD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, BSIP, DD).

Alpine Himalaya.

Koenigia islandica L. Mant. Pl. 1 : 35. 1767. *Polygonum islandicum* Hook. f. Fl. Brit. India 5 : 24. 1886.

Tufted, slender, succulent, glabrous herbs. Flowers very minute.

Fl. & Fr. : July - September.

Kinnaur (BSD), Lahul and Spiti (BSD, BSIP, DD).

Alpine Western Himalaya and Western Tibet.

Koenigia nepalensis D. Don, Prodr. Fl. Nepal. 74. 1825 ; Nair, Fl. Bash. Himal. 241. 1977. *Polygonum filicaule* Wall. ex Meisn. in Wall. Pl. As. Rar. 3 : 59. 1832 ; Hook. f. Fl. Brit. India 5 : 25. 1886 ; Collett, Fl. Siml. 420. 1902.

Nearly erect, straw like, tufted herbs, hairy on the upper parts. Leaves hairy. Flowers very small, white.

Fl. & Fr. : July - September.

Chamba (BSD), Kinnaur (BSD), Lahul and Spiti (BSD, DD), Simla (DD).

Subalpine and alpine Himalaya.

Oxyria digyna (L.) Hill, Hort. Kew. 158. 1768 ; Hook. f. Fl. Brit. India 5 : 58. 1886 ; Nair, Fl. Bash. Himal. 241. 1977. *Rumex digynus* L. Sp. Pl. 337. 1753.

Glabrous, fleshy herbs. Leaves reniform. Fruit wings membranous.

Fl. & Fr. : May - September.

Chamba (BSD, DD), Kangra (BSIP), Kinnaur (BSD, DD), Kulu (BSIP, DD), Lahul and Spiti (BSD, DD).

Alpine Himalaya.

Persicaria capitata (Buch.-Ham. ex D. Don) H. Gross. in Engl. Bot. Jahrb. 49 : 277. 1913 ; Nair, Fl. Bash. Himal. 249. 1977. *Polygonum capitatum* Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 73. 1825 ; Hook. f. Fl. Brit. India 5 : 44. 1886 ; Collett, Fl. Siml. 423. 1902.

Trailing, leafy, hairy herbs. Leaves in 2 rows, more or less downy on both surface. Flowers pink, in dense heads.

Fl. & Fr. : June - October.

Chamba (BSD, BSIP, DD), Kangra (BSD, DD, RRL), Kinnaur (DD), Kulu (DD), Simla (DD).

Subtropical and temperate Himalaya.

Persicaria chinensis (L.) H. Gross in Engl. Bot. Jahrb. 49 : 269 - 270. 1913 ; Nair, Fl. Bash. Himal. 241. 1977. *Polygonum chinense* L. Sp. Pl. 363. 1753 ; Hook. f. Fl. Brit. India 5 : 44. 1886 ; Collett, Fl. Siml. 424. 1902 ; Parker, For. Fl. Punj. ed. 3. 419. 1956.

Erect, angled, finely grooved shrubs. Leaves rough with minute prickles. Flowers white or pink.

Fl. & Fr. : July - November.

Chamba (DD), Simla (DD).

Subtropical and temperate Himalaya.

Persicaria kawagoeana (Makino) Nakai in Rigakkai 24 : 300. 1926 ; Hara, Fl. East. Himal. 71. 1966 ; Nair, Fl. Bash. Himal. 242. 1977. *Polygonum minus* Hook. f. Fl. Brit. India 5 : 36. 1886 (non Huds.) ; Collett, Fl. Siml. 422. 1902.

Glabrous, creeping herbs. Leaves sessile, glabrous. Flowers minute, pink or red on terminal, erect racemes.

Fl. & Fr. : July - September.

Kinnaur (BSD), Simla (DD).

Throughout India.

Persicaria microcephala (D. Don) H. Gross. in Engl. Bot. Jahrb. 49 : 277. 1913. var. *sphaerocephala* (Wall. ex Meisn.) Hara, Fl. E. Himal. 2 :

23. 1971. *Polygonum sphaerocephalum* Wall. ex Meisn. in Wall. Pl. Asiat. Rar. 3 : 60. 1832 ; Hook. f. Fl. Brit. India 5 : 43. 1886.

Long, slender, creeping herbs, rooting at the nodes with short branches. Flowers red.

Fl. & Fr. : June - August.

Chamba (DD), Simla (BSD).

Temperate Himalaya.

Persicaria nepalensis (Meisn.) H. Gross. in Engl. Bot. Jahrb. 49 : 277. 1913 ; Nair, Fl. Bash. Himal. 242. 1977. *Polygonum nepalense* Meisn. Monogr. Gen. Polyg. 84. t. 7. f. 2. 1826. *P. alatum* var. *nepalense* (Meisn.) Hook. f. Fl. Brit. India 5 : 42. 1886. *P. alatum* Buch. - Ham. ex Spreng. Syst. Veg. Cur. Post. 154. 1827 ; Collett, Fl. Siml. 423. 1902.

Prostrate, glabrous or thinly hairy herbs. Leaves glabrous, gland dotted. Flowers white-purple or red.

Fl. & Fr. : May - September.

Chamba (BSD, DD, RRL), Kangra (BSD, DD, BSIP), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD, RRL), Lahul and Spiti (BSD, DD), Simla (BSD, BSIP, DD).

Throughout the Himalaya.

Persicaria polystachya (Wall. ex Meisn.) H. Gross in Engl. Bot. Jahrb. 49 : 315. 1913 ; Nair, Fl. Bash. Himal. 242. 1977. *Polygonum polystachyum* Wall. ex Meisn. in Wall. Pl. As. Rar. 3 : 61. 1832 ; Hook. f. Fl. Brit. India 5 : 50. 1886 ; Collett, Fl. Siml. 425. 1902.

Erect, hairy, tall herbs. Flowers white or tinged with pink.

Fl. & Fr. : July - September.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSD, RRL), Simla (CDRI, DD).

Temperate Himalaya.

Persicaria pubescens (Bl.) Hara in Jour. Jap. Bot. 17 : 335. 1941 ; Nair, Fl. Bash. Himal. 242. 1977. *Polygonum pubescens* Bl. Bijdr. 11 : 532. 1825. *Polygonum donii* Meisn. Monogr. Polyg. 72. 1826 ; Collett, Fl. Siml. 422. 1902. *P. serrulatum* var. *donii* (Meisn.) Hook. f. Fl. Brit. India 5 : 38. 1886.

Procumbent, glabrous herbs. Flowers pink or white in slender, erect or drooping racemes.

Fl. & Fr. : July – October.

Kinnaur (BSD), Simla (BSD).

North-Western Himalaya.

Persicaria pubescens (BL.) Hara var. ***acuminata*** (Fr. et Sav.) Hara in Journ. Jap. Bot. 17 : 335. 1941 ; Nair, Fl. Bash. Himal. 243. 1977. *Polygonum hydropiper* var. *acuminata* Fr. et Sav. Enum. Pl. Jap. 2 : 474. 1877. *P. flaccidum* Meisn. in DC. Prodr. 14(1) : 107. 1856 ; Hook. f. Fl. Brit. India 5 : 39. 1886. (non Roxb. 1832).

Glabrous herbs. Flowers pink on sub-paniculate racemes.

Fl. & Fr. : July – September.

Neerath (BSD), Sangla (BSD).

Throughout India.

Persicaria sagittata (L.) Gross ex Loesn. in Beih. Bot. Centralbl. 37(12) : 113. 1919. *Polygonum sagittatum* L. Sp. Pl. 363. 1753 ; Hook. f. Fl. Brit. India 5 : 47. 1886.

Suberect or prostrate herbs. Petiole and leaf mid rib covered with recurved hairs.

Fl. & Fr. : June – September.

Kulu (BSD).

Western Himalaya and Khasia hills.

Persicaria strigosa (R. Br.) Nakai in Rigakkai 24 : 299. 1926. *Polygonum strigosum* R. Br. Prodr. Fl. Nov. Holl. 420. 1810 ; Hook. f. Fl. Brit. India 5 : 47. 1886. *P. sagittatum* (auct. non L.) D. Don, Prodr. Fl. Nepal. 73. 1825.

Suberect herbs with prickles. Leaves pubescent beneath and margins with minute, rigid prickles. Flowers in dense raceme, pink.

Fl. & Fr. : July – August.

Kangra (BSD).

Tropical Himalaya.

Polygonum affine D. Don, Prodr. Fl. Nepal. 70. 1825 ; Hook. f. Fl. Brit. India 5 : 33. 1886 ; Nair, Fl. Bash. Himal. 243. 1977.

Densely tufted, glabrous herbs with long, woody root-stocks. Flowers crowded on the racemes, light pink.

Fl. & Fr. : June - August.

Chamba (BSD, DD), Kangra (BSIP), Kinnaur (BSD, DD), Kulu (BSIP, DD), Lahul and Spiti (BSD, DD, RRL), Simla (BSD).

Subalpine and alpine Himalaya.

Polygonum alpinum All. Fl. Pedem. 1 : 206. t. 68. f. 1. 1785 ; Hook. f. Fl. Brit. India 5 : 49. 1886.

Glabrous herbs with softly pubescent young parts, pale-reddish or white. Leaves glabrous or finely pubescent. Inflorescence very long with white or pale-pink flowers.

Fl. & Fr. : June - August.

Chamba (BSD, DD), Lahul and Spiti (BSD, DD, RRL).

North-Western Himalaya.

Polygonum amphibium L. Sp. Pl. 361. 1753 ; Hook. f. Fl. Brit. India 5 : 34. 1886 ; Nair, Fl. Bash. Himal. 243. 1977.

Floating herbs with woody, creeping root stocks. Leaves long petioled, floating. Flowers bright red.

Fl. & Fr. : June - September.

Kinnaur (BSD), Lahul and Spiti (BSD, DD).

Western Himalaya.

Polygonum aviculare L. Sp. Pl. 362. 1753 ; Hook. f. Fl. Brit. India 5 : 26. 1886 ; Collett, Fl. Siml. 420. 1902 ; Nair, Fl. Bash. Himal. 243. 1977.

Prostrate, leafy, finely grooved herbs. Flowers small green, tipped with white or red, in axillary clusters.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul and Spiti (BSD, DD), Simla (BSD, CDRI, DD).

Western Himalaya and Nepal.

Polygonum cognatum Meisn. Prodr. Polyg. 91. 1826 ; Hook. f. Fl. Brit. India 5 : 25. 1886.

Glabrous, stout herbs. Leaves succulent with silvery stipules.

Fl. & Fr. : April - September.

Kangra (BSIP), Kulu (BSIP), Lahul and Spiti (BSD, DD).

Western Himalaya.

Polygonum convolvulus L. Sp. Pl. 364. 1753 ; Hook. f. Fl. Brit. India 5 : 53. 1886. *Bilderdykia convolvulus* (L.) Dumort. Fl. Belg. 28, 1827.

Prostrate or twining, puberulous herbs. Leaves sagittate-cordate, puberulous beneath. Flowers greenish-white.

Fl. & Fr. : July - September.

Chamba (DD), Kulu (BSD), Lahul and Spiti (BSD).

Western Himalaya.

Polygonum dumetorum L. Sp. Pl. ed. 2. 521. 1762 ; Hook. f. Fl. Brit. India 5 : 54. 1886 ; Nair, Fl. Bash. Himal. 244. 1977.

Twining herbs with terete stem.

Fl. & Fr. : June - October.

Chamba (DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD).

Temperate North-Western Himalaya.

Polygonum glabrum Willd. Sp. Pl. 2 : 447. 1799 ; Hook. f. Fl. Brit. India 5 : 34. 1886 ; Collett, Fl. Siml. 422. 1902 ; Nair, Fl. Bash. Himal. 244. 1977.

Glabrous, erect, branched herbs. Leaves minutely glandular. Flowers pink-white in erect, slender, terminal raceme.

Fl. & Fr. : June - August.

Chamba (BSD), Simla (DD).

Throughout India.

Polygonum glabrum Willd. var. *scabrinervis* Hook. f. Fl. Brit. India 5 : 34. 1886.

Erect, glabrous herbs. Leaves glandular, midrib scabrid beneath.

Fl. & Fr. : May - August.

Lahul and Spiti (BSD).

North-Western India.

Polygonum glaciale (Meisn.) Hook. f. Fl. Brit. India 5 : 41. 1886. *P. perforatum* Aitch. var. *glaciale* Meisn. in DC. Prodr. 14(1) : 128. 1856.

Succulent, glabrous, dwarf herbs. Heads sessile, small.

Fl. & Fr. : June - August.

Chamba (BSD), Kinnaur (BSD), Lahul and Spiti (BSD, DD).

Alpine and subalpine Himalaya.

Polygonum humile Meisn. in Wall. Pl. As. Rar. 3 : 59. 1832 ; Hook. f. Fl. Brit. India 5 : 41. 1886.

Sparsely glandular, hairy herbs. Flowers pale-greenish.

Fl. & Fr. : June - August.

Kulu (BSD).

Temperate and alpine Himalaya.

Polygonum hydropiper L. Sp. Pl. 361. 1753 ; Hook. f. Fl. Brit. India 5 : 39. 1886.

Glabrous, erect herbs with tufted roots. Flowers pinkish.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD), Kulu (BSD, BSIP, RRL), Mandi (BSD), Simla (DD).

Throughout India.

Polygonum lapthifolium L. Sp. Pl. 360. 1753 ; Hook. f. Fl. Brit. India 5 : 35. 1886.

Erect, branched herbs. Racemes dense, erect or nodding. Flowers greenish-pale or white.

Fl. & Fr. : June - August.

Lahul and Spiti (DD).

Throughout India.

Polygonum mite Schrank, Bayr (Baier) 1 : 668. 1789. *P. hydropiper* L. var. *eglandulosa* Hook. f. Fl. Brit. India 5 : 39. 1886.

Glabrous, erect herbs. Racemes drooping with small, pink flowers. Perianth eglandular.

Fl. & Fr. : June - October.

Simla (DD).

Western Himalaya.

Polygonum molle D. Don, Prodr. Fl. Nepal. 72. 1825 ; Hook. f. Fl. Brit. India 5 : 50. 1886.

Stout, villous, shrubby herbs. Leaves silky pubescent or villous beneath, flowers in large, terminal, tomentose panicles, white.

Fl. & Fr. : July - October.

Kinnaur (DD).

Central and Eastern Himalaya.

Polygonum mollaeforme Boiss. Djagn. Pl. Or. Ser. 1. 7 : 84. 1846 ; Hook. f. Fl. Brit. India 5 : 27. 1886.

Very small, slender, dichotomously branched herbs. Leaves linear, setaceous. Flowers minute.

Fl. & Fr. : June - September.

Lahul and Spiti (BSD, DD).

Western Tibet and Himachal Pradesh.

Polygonum nummularifolium Meisn. in DC. Prodr. 14 : 127. 1856 ; Hook. f. Fl. Brit. India 5 : 53. 1886.

Very small, creeping, matted herbs with hairy nodes. Flowers large, white or bright-pink.

Fl. & Fr. : June - September.

Lahul and Spiti (BSD).

Alpine Himalaya.

Polygonum orientale L. Sp. Pl. 360. 1753 ; Hook. f. Fl. Brit. India 5 : 30. 1886 ; Collett, Fl. Siml. 421. 1902 ; Nair, Fl. Bash. Himal. 244. 1977.

Erect, softly hairy herbs. Leaves long stalked, pubescent. Flowers red and white in dense, erect or drooping racemes.

Fl. & Fr. : April - October.

Simla (DD).

Himalaya.

Polygonum paronychioides C.A. Mey. ex Hoben. in Bull. Soc. Nat. Mosc. 4 : 336. 1838 ; Hook. f. Fl. Brit. India 5 : 26. 1886 ; Nair, Fl. Bash. Himal. 244. 1977. *P. mucronatum* Royle ex Bab. in Trans. Linn. Soc. Bot. 18 : 115. 1841.

Tufted, fragile, white or red-brown herbs. Flowers purple.

Fl. & Fr. : June – October.

Chamba (DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, BSIP, DD, RRL).

Western Himalaya.

Polygonum perpusillum Hook. f. Icon. Pl. 15 : 1490. 1885 ; Hook. f. Fl. Brit. India 5 : 32. 1886.

Sub-caespitose, dwarf herbs. Flowers few, capitate, pendulous, white or pink.

Fl. & Fr. : May – August.

Lahul and Spiti (DD).

Alpine Himalaya.

Polygonum persicaria L. Sp. Pl. 360. 1753 ; Hook. f. Fl. Brit. India 5 : 35. 1886.

Erect or ascending herbs. Flowers red.

Fl. & Fr. : July – October.

Kinnaur (DD).

Western Himalaya.

Polygonum plebeium R. Br. Prodr. 420. 1810 ; Hook. f. Fl. Brit. India 5 : 27. 1886 ; Collett, Fl. Siml. 421. 1902 ; Nair, Fl. Bash. Himal. 244. 1977.

Terete, finely grooved, prostrate herbs. Flowers minute, white or pale-pink.

Fl. & Fr. : April – October.

Kangra (RRL), Kulu (BSD), Lahul and Spiti (BSD), Simla (BSD, DD), Una (BSD).

Throughout tropical India.

Polygonum polycnemoides J. & S. Ill. Pl. Or. 2 : 30, t. 120, 121. 1845.
P. olivieri J. & S. Ill. Pl. Or. 2 : 31. 1845.

Fl. & Fr. : July - September.

Lahul and Spiti (BSD, DD).

Himalaya.

Polygonum posumbu Buch. - Ham. ex D. Don, Prodr. Fl. Nepal. 71. 1825 ; Hook. f. Fl. Brit. India 5 : 38. 1886.

Slender, flaccid herbs with extensively creeping stems. Leaves membranous.

Fl. & Fr. : June - September.

Chamba (DD), Kulu (DD).

Temperate and subtropical Himalaya.

Polygonum recumbans Royle ex Bab. in Trans. Linn. Soc. Bot. 18 : 116. 1838 ; Hook. f. Fl. Brit. India 5 : 25. 1886 ; Collett, Fl. Siml. 420. 1902 ; Nair, Fl. Bash. Himal. 245. 1977.

Prostrate, grooved, rough herbs. Flowers small, white or pink, in axillary clusters.

Fl. & Fr. : June - November.

Kinnaur (BSD, DD), Kulu (BSD, BSIP), Simla (BSIP, DD).

Western Himalaya.

Polygonum rottboellioides Jaub. & Spach. Ill. Pl. Or. 2 : 32. 1845.
Polygonum tubulosum Boiss. Diagn. Ser. 1 : 83. 1883 ; Hook. f. Fl. Brit. India 5 : 27. 1886 ; Collett, Fl. Siml. 420. 1902 ; Nair, Fl. Bash. Himal. 245. 1977.

Prostrate, wiry herbs. Flowers very small, white or pink.

Fl. & Fr. : June - September.

Chamba (BSD, DD), Kinnaur (BSD), Kulu (BSD), Lahul and Spiti (BSD, DD).

North-Western Himalaya and Nepal.

Polygonum serrulatum Lagasca, Gen. & Sp. Nov. 14. 1816 ; Hook. f. Fl. Brit. India 5 : 38. 1886.

Prostrate herbs. Racemes slender, erect, flowers white.

Fl. & Fr. : June - October.

Chamba (DD), Kinnaur (DD), Simla (DD).

Throughout India.

Polygonum sibiricum Lam. in *Novi Comm. Acad. Sci. Petrop.* 18 : 531. Pl. 7. f. 2. 1774 ; Hook. f. *Fl. Brit. India* 5 : 52. 1886.

Glabrous, dwarf, fleshy herbs. Flowers in capitate, terminal panicles, pink.

Fl. & Fr. : June - August.

Lahul and Spiti (BSD).

Western Himalaya.

Polygonum simlense Royle ex Bab. in *Trans. Linn. Soc. Bot.* 18 : 102. 1841 ; Collett, *Fl. Siml.* 422. 1902 ; Nair, *Fl. Bash. Himal.* 245. 1977. *P. lapathifolium* var. *nodosum* (Pers.) Hook. f. and *P. lapathifolium* var. *laxum* (Reichb.) Hook. f. *Fl. Brit. India* 5 : 35. 1886.

Nearly glabrous herbs. Leaves gland dotted on narrowly winged stalk. Flowers red, in erect or half-drooping racemes.

Fl. & Fr. : June - September.

Simla (DD).

Northern India.

Polygonum sinuatum Royle ex Meisn. in *DC. Prodr.* 14 : 130. 1856 ; Hook. f. *Fl. Brit. India* 5 : 44. 1886 ; Nair, *Fl. Bash. Himal.* 245. 1977.

Glabrous, creeping herbs. Leaves short petioled with amplexicaul auricles.

Fl. & Fr. : July - September.

Kinnaur (BSD, DD), Kulu (BSD).

Western Himalaya.

Polygonum stagninum Buch. - Ham. ex Meisn. in *Wall. Pl. As. Rar.* 3 : 56. 1832 ; Hook. f. *Fl. Brit. India* 5 : 37. 1886.

Erect, glabrous herbs. Leaves strigosely pubescent on both sides. Flowers white.

Fl. & Fr. : June - September.

Kangra (DD).

Throughout India.

Polygonum tortuosum D. Don, Prodr. Fl. Nepal. 71. 1825 ; Hook. f. Fl. Brit. India 5 : 52. 1886.

Glabrous or finely pubescent, shrubby herbs. Leaves pale-green, crimson in autum.

Fl. & Fr. : June - September.

Kangra (BSIP), Kinnaur (DD), Lahul and Spiti (BSD, DD).

Western Himalaya.

Polygonum viviparum L. Sp. Pl. 360. 1753 ; Hook. f. Fl. Brit. India 5 : 31. 1886 ; Nair, Fl. Bash. Himal. 245. 1977.

Slender herbs. Leaves coriaceous, pubescent or tomentose beneath. Flowers pink, lower flowers modified into bulbils.

Fl. & Fr. : June - October.

Chamba (BSD), Kangra (BSIP), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD, RRL), Simla (CDRI).

Alpine to subalpine Himalaya.

Rheum australe D. Don, Prodr. Fl. Nepal. 75. 1825. *Rheum emodi* Wall. ex Meissn. in Wall. Pl. As. Rar. 3 : 65. 1832 ; Hook. f. Fl. Brit. India 5 : 56. 1886 ; Nair, Fl. Bash. Himal. 245. 1977.

Tall, leafy herbs with green and brown streaked stems. Leaves large, orbicular, papillose beneath. Flowers dark purple.

Fl. & Fr. : May - September.

Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (DD, RRL).

Subalpine and alpine Himalaya.

Rheum moorcroftianum Royle, Ill. Bot. Himal. Mount. 315, 318. 1839 ; Hook. f. Fl. Brit. India 5 : 56. 1886.

Stout herbs. Leaves all radical, thickly coriaceous, glabrous or stellately puberulous beneath. Racemes long, pubescent. Fruits ovoid with narrow wings.

Fl. & Fr. : June - September.

Kangra (BSIP, DD).

Western Himalaya.

Rheum spiciforme Royle, Ill. Bot. Himal. Mount. t. 78. 1834. 318. 1836 ; Hook. f. Fl. Brit. India 5 : 55. 1886.

Stout herbs. Leaves all radical, thickly coriaceous. Fruits broadly oblong, wings broad.

Fl. & Fr. : June - August.

Lahul and Spiti (BSD, DD).

Western Himalaya.

Rheum webbianum Royle, Ill. Bot. Himal. Mount. 318. t. 78. a. 1836 ; Hook. f. Fl. Brit. India 5 : 57. 1886 ; Nair, Fl. Bash. Himal. 246. 1977.

Tall, leafy herbs Flowers pale-yellowish.

Fl. & Fr. : June - August.

Chamba (BSD), Kinnaur (BSD, DD), Kulu (DD).

Central and Western alpine Himalaya.

Rumex acetosa L. Sp. Pl. 337. 1753 ; Hook. f. Fl. Brit. India 5 : 60. 1886 ; Nair, Fl. Bash. Himal. 246. 1977.

Tall, dioecious herbs with deeply grooved stems. Flowers greenish-yellow. Fruits red.

Fl. & Fr. : April - September.

Chamba (BSD, DD), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD), Simla (DD).

Western Himalaya upto Sikkim.

Rumex angulatus Rech. f. in Candollea, 12 : 51. 1949. *Rumex orientalis* Hook. f. Fl. Brit. India 5 : 58. 1886 ; Collett, Fl. Siml. 427. 1902.

Tall, stout herbs. Flowers bi-sexual, crowded on leafy racemes.

Fl. & Fr. : April - July.

Chamba (DD), Lahul and Spiti (BSD, BSIP, DD, RRL).

Western Himalaya.

Rumex dentatus L. Mant. Pl. 2 : 226. 1771 ; Hook. f. Fl. Brit. India 5 : 59. 1886 ; Nair, Fl. Bash. Himal. 246. 1977.

Herbs with purple stems. Fruiting perianth with densely reticulated wings which are irregularly toothed.

Fl. & Fr. : March – July.

Kangra (BSD, BSIP, RRL), Kinnaur (BSD), Kulu (BSIP, DD).

Himalaya, Kashmir to Sikkim.

Rumex hastatus D. Don, Prodr. Fl. Nepal. 74. 1825 ; Hook. f. Fl. Brit. India 5 : 60. 1886 ; Collett, Fl. Siml. 428. 1902 ; Parker, For. Fl. Punj. ed. 3. 419. 1956.

Erect, slender, branched herbs. Leaves triangular or 3-lobed. Flowers very small.

Fl. & Fr. : April – October.

Chamba (BSIP, DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (DD), Simla (BSD, DD).

Himalaya, Kashmir to Bhutan.

Rumex nepalensis Spreng. Syst. Veg. 2 : 159. 1825 ; Hook. f. Fl. Brit. India 5 : 60. 1886 ; Collett, Fl. Siml. 428. 1902 ; Nair, Fl. Bash. Himal. 246. 1977.

Tall, robust, spreading herbs. Flowers bisexual, in whorls on leafless racemes. Fruiting sepals are fringed with comb-like, hooked teeth.

Fl. & Fr. : April – August.

Chamba (BSD, DD), Kangra (BSD, BSIP, DD, RRL), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD), Lahul and Spiti (BSD, BSIP, DD), Simla (DD).

Temperate Himalaya.

Tovara virginiana (L.) Raffn. Fl. Tellur. 3 : 12. 1836. *Polygonum virginianum* L. Sp. Pl. 360. 1753 ; Hook. f. Fl. Brit. India 5 : 31. 1886.

Sparsely hispid, tall, hollow herbs. Racemes very long, long peduncled. Fruits ellipsoid, flattened, pale-brown.

Fl. & Fr. : June – September.

Simla (DD).

Temperate Himalaya.

ARISTOLOCHIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Aristolochia punjabensis Lace in Kew Bull. 1911: 273. 1911 ; Parker, For. Fl. Punj. ed. 3. 420. 1956 ; M. Qaiser in Fl. West Pakis. 110 : 3. 1977.

Deciduous, twining shrub. Flowers densely pubescent, perianth dull, greenish brown, densely pubescent. Capsule hexagonal, pubescent.

Fl. & Fr. : May September.

Chamba (DD), Kulu (DD).

Cultivated.

PIPERACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Peperomia tetraphylla (Forst. f.) Hook. et Arn. Bot. Beech. Voy. 97. 1832. *Piper tetraphyllum* Forst. f. Prodr. 5. 1786. *Peperomia reflexa* (L. f.) A. Dietr. Sp. Pl. 1 : 180. 1831 (non Kunth, 1815) Hook. f. Fl. Brit. India 5 : 99. 1886 ; Collett, Fl. Siml. 430. 1902. *Piper reflexum* L. f. Suppl. Pl. 91. 1781.

Small, succulent herb, rooting at the joints. Spikes terminal, stalked. Flowers green, perianth absent.

Fl. & Fr. : May November.

Simla (DD).

Subtropical Himalaya upto Sikkim.

Piper mullesua D. Don, Prodr. Fl. Nepal. 20. 1825 ; Ohashi in Hara, Fl. E. Himal. 1 : 43. 1966. *P. brachystachyum* Wall. ex Hook. f. Fl. Brit. India 5 : 87. 1886 ; Collett, Fl. Siml. 430. 1902 ; Parker, For. Fl. Punj. ed. 3. 421. 1956.

Rambling shrub with pubescent or hairy stem swollen and rooting at the joints. Flowers purple.

Fl. & Fr. : June September.

Simla (Hook. f., 1886).

Subtropical Himalaya upto Bhutan.

SAURURACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Houttuynia cordata Thunb. in Konglig. Vittens Acad. Stockholm Handling 4 : 149. t. 5. 1783 ; Hook. f. *Fl. Brit. India* 5 : 78. 1886 ; Collett, *Fl. Siml.* 429. 1902 ; Nair, *Fl. Bash. Himal.* 247. 1977.

Aromatic, pubescent, erect, angular herbs, growing in marshy and moist localities. Leaves alternate, broadly ovate cordate. Spike with large, petal like white bract.

Fl. & Fr. : May September.

Hatkoti and Jeori (BSD), Taklech (DD), Simla (DD).

Tropical Himalaya.

LAURACEAE

H. J. CHOWDHERY

Cinnamomum camphora (L.) J. Presl, *Rostlin* 2 : 36, 47. 1825 ; Hook. f. *Fl. Brit. India* 5 : 134. 1886 ; Parker, *For. Fl. Punj.* ed. 3. 425. 1956. *Laurus camphora* L. *Sp. Pl.* 369. 1753.

Evergreen trees, commonly called as the camphor tree.

Fl. & Fr. : April August.

Kangra (RRL).

Commonly cultivated.

Cinnamomum tamala (Buch. Ham.) Nees & Eberm. Handb. Med. Pharm. Bot. 2 : 426. 1831 ; Hook. f. Fl. Brit. India 5 : 128. 1886 ; Collett, Fl. Siml. 431. 1902 ; Parker, For. Fl. Punj. ed. 3. 424. 1956. *Laurus tamala* Buch. Ham. in Tr. Linn. Soc. 13 : 555. 1822.

Trees. Leaves glabrous. 3 nerved from the base, long pointed. Flowers unisexual, white, in pubescent panicles.

Fl. & Fr. : June August.

Chamba (DD), Simla (BSIP).

Tropical and subtropical Himalaya.

Dodecadenia grandiflora Nees in Wall. Pl. Asiat. Rar. 2 : 63. 1831 ; Hook. f. Fl. Brit. India 5 : 181. 1886 ; Parker, For. Fl. Punj. ed. 3. 428. 1956.

Rugged, subsilky tomentose trees. Leaves thinly coriaceous. Flowers subsolitary, greenish or pale yellow.

Fl. & Fr. : April - August.

Kinnaur (DD).

Temperate Himalaya.

Litsea elongata (Nees) Hook. f. Fl. Brit. India 5 : 165. 1886 ; Parker, For. Fl. Punj. ed. 3. 427. 1956. *Daphnidium elongatum* Nees in Wall. Pl. Asiat. Rar. 2 : 63. 1931.

Small trees. Leaves rusty - tomentose beneath. Flowers silky villous, yellowish.

Fl. & Fr. : March - August.

Chamba (DD), Kangra (DD).

Temperate and subtropical Himalaya.

Litsea monopetala (Roxb.) Pers. Syn. Pl. 2 : 4. 1807. *Tetranthera monopetala* Roxb. Pl. Corom. 2 : 26. t. 148. 1798. *Litsea polyantha* Juss. in Ann. Mus. Pairs 6 : 211. 1805 ; Hook. f. Fl. Brit. India 5 : 162. 1886 ; Collett, Fl. Siml. 433. 1902 ; Parker, For. Fl. Punj. ed. 3. 426. 1956.

Trees with pubescent or tomentose branches. Leaves tomentose beneath. Flowers white.

Fl. & Fr. : March July.

Simla (DD).

Himalaya foot hills.

Litsea salicifolia (Roxb. ex Nees) Hook. f. Fl. Brit. India 5 : 167. 1886. *Tetranthera salicifolia* Roxb. ex Nees in Wall. Pl. Asiat. Rar. 2 : 66. 1831.

Shrub or small trees. Leaves hoary beneath.

Fl. & Fr. : March - June.

Kangra (BSIP).

Northern and Eastern India.

Machilus duthiei King ex Hook. f. Fl. Brit. India 5 : 861. 1890 ; Collett, Fl. Siml. 431. 1902 ; Parker, For. Fl. Punj. ed. 3. 423. 1956 ; Nair, Fl. Bash. Himal. 247. 1977.

Trees. Leaves glabrous, leathery, coriaceous. Flowers large, perianth pubescent outside. Drupe globose.

Fl. & Fr. : May - August.

Kinnaur (DD), Simla (BSIP).

Himalaya and Khasia hills.

Machilus gamblei King ex Hook. f. Fl. Brit. India 5 : 138. 1886 ; Parker, For. Fl. Punj. ed. 3. 423. 1956.

Trees with young shoots minutely pubescent. Flowers yellowish-green in pubescent panicles. Fruits globose, black.

Fl. & Fr. : April - July.

Chamba (Parker, 1956).

Throughout India.

Machilus odoratissima Nees in Wall. Pl. As. Rar. 2 : 70. 1831 ; Hook. f. Fl. Brit. India 5 : 139. 1886 ; Collett, Fl. Siml. 431. 1902 ; Parker, For. Fl. Punj. ed. 3. 423. 1956 ; Nair, Fl. Bash. Himal. 247. 1977.

Large trees. Leaves coriaceous. Perianth glabrous. Drupe oblong.

Fl. & Fr. : May - August.

Chamba (DD), Kinnaur (DD), Kulu (DD).

Subtropical and temperate Himalaya.

Neolitsea chinensis (Lam.) Chun, Contrib. Biol. Lab. China 1 (5) : 1925. *Litsea chinensis* Lam. Encyc. Method. 3 : 574. 1789 ; Parker, For. Fl. Punj. ed. 3. 426. 1956. *L. sebifera* Pers. Syn. 2 : 4. 1882 ; Hook. f. Fl. Brit. India 5 : 157. 1886.

Trees. Leaves coriaceous. Flowers yellowish.

Fl. & Fr. : May - September.

Chamba (BSD, DD), Kangra (BSIP, DD).

Throughout the hotter parts of India and lower Himalaya.

Neolitsea lanuginosa (Nees) Gamble in Pl. Wilson 2 : 79. 1914. Nair, Fl. Bash. Himal. 248. 1977. *Tetradenia lanuginosa* Nees in Wall. Pl. As. Rar. 2 : 64. t. 576. 1831. *Litsea lanuginosa* Nees, Syst. Laur. 634. 1836 ; Hook. f. Fl. Brit. India 2 : 178. 1886 ; Collett, Fl. Siml. 433. 1902 ; Parker, For. Fl. Punj. ed. 3. 427. 1956.

Evergreen trees. Leaves tomentose on the lower surface. Flowers white.

Fl. & Fr. : March July.

Chamba (DD), Simla (DD).

Outer Himalaya.

Neolitsea umbrosa (Nees) Gamble, Pl. Wils. 2 : 79. 1914. *Tetradenia umbrosa* Nees in Wall. Pl. As. Rar. 2 : 64. 1831. *Litsea umbrosa* Nees, Syst. Laur. 623. 1836 ; Parker, For. Fl. Punj. ed. 3. 428. 1956. *L. umbrosa* Nees var. *consimilis* (Nees) Hook. f. Fl. Brit. India 5 : 179. 1886 ; Collett, Fl. Siml. 434. 1902.

Glabrous trees. Leaves alternate, lower surface covered with white bloom. Flowers pale yellow or white.

Fl. & Fr. : March October.

Chamba (BSD, DD, RRL), Kangra (DD), Kinnaur (BSD, DD), Kulu (DD), Simla (BSD, BSIP, DD).

Temperate and subtropical Himalaya.

Phoebe lanceolata (Nees) Nees, Syst. Laur. 109. 1836 ; Hook. f. Fl. Brit. India 5 : 141. 1886 ; Collett, Fl. Siml. 432. 1902 ; Parker, For. Fl. Punj. ed. 3. 424. 1956. *Ocotea lanceolata* Nees in Wall. Pl. As. Rar. 2 : 71. 1831. *Laurus lanceolata* Roxb. Fl. Ind. ed. 2. 2 : 309. 1832.

Trees with white or pale yellow branchlets. Leaves thinly coriaceous. Flowers pale yellow or white. Perianth hairy inside.

Fl. & Fr. : April July.

Sirmur (BSD, BSIP).

Subtropical Himalaya.

THYMELAEACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Daphne oleoides Schreb. *Icones Descr. Decad.* 1 : 13. t. 7. 1766 ;
Hook. f. *Fl. Brit. India* 5 : 193. 1886 ; Stewart, *Ann. Cat. Vas. Fl. W. Pak.
& Kash.* 497. 1972.

Small, much branched shrub with green brown or purple branches.
Flowers white or pink tinged. Fruit fleshy, orange to scarlet.

Fl. & Fr. : May October.

Chamba (DD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD).

Western Himalaya.

Daphne papyracea Wall. ex Steud. emend W. W. Sm. & Cave in
Rec. Bot. Surv. India 6 : 54. 1913 ; Stewart. *Ann. Cat. Vas. Pl. W. Pak.
& Kash.* 497. 1972. *D. cannabina* Wall. in *Asiatic Res.* 13 : 315. t. 7 &
8. 1820 (non Lour.) ; Hook. f. *Fl. Brit. India* 5 : 193. 1886.

Shrub. Flowers white purple to yellowish. Fruit ovoid, succulent,
red or orange.

Fl. & Fr. : April October.

Chamba (RRL), Kangra (DD, RRL), Kinnaur (DD), Simla (BSD,
DD, RRL).

Temperate Himalaya and Khasia Hills.

Wikstroemia canescens Meisn. in *Denkschr. Regensb. Bot. Ges.*
3 : 288. 1841 ; Hook. f. *Fl. Brit. India* 5 : 195. 1886 ; Stewart, *Ann. Cat.
Vas. Pl. W. Pak. & Kash.* 498. 1972.

Small shrub with silky pubescent branchlets and inflorescences.
Fruit ovoid, silky.

Fl. & Fr. : June October.

Kinnaur (DD), Kulu (BSD, DD), Simla (BSD, DD).

Temperate Himalaya, Kashmir to Nepal and Khasia hills.

ELAEAGNACEAE

H. J. CROWDHERY

Elaeagnus angustifolia L. Sp. Pl. 121. 1753. *Elaeagnus hortensis* M. Bieb. sensu Hook. f. Fl. Brit. India 5 : 201. 1886 ; Parker, For. Fl. Punj. ed. 3. 432. 1956.

Arboreous trees with dark brown branches. Leaves silvery beneath. Flowers yellow, fragrant. Fruit red, fleshy.

Fl. & Fr. : March - July.

Chamba (DD).

Western Himalaya.

Elaeagnus latifolia L. Sp. Pl. 121. 1753 ; Hook. f. Fl. Brit. India 5 : 202. 1886 (non L.) ; Parker, For. Fl. Punj. ed. 3. 434. 1956. Nair, Fl. Bash. Himal. 249. 1977.

Scandant or erect, small trees. Leaves silvery or rusty red beneath. Flowers many in a cluster. Fruits yellow or red, acid.

Fl. & Fr. : April - July.

Kangra (DD).

Subtropical and temperate Himalaya.

Elaeagnus parvifolia Wall. ex. Royle, Ill. Bot. Himal. Mount. 323. t. 81. f. 1. 1836. *Elaeagnus umbellata* (non Thunb.) Hook. f. Fl. Brit. India 5 : 201. 1886 ; Collett, Fl. Siml. 437. 1902 ; Parker, For. Fl. Punj. ed. 3. 435. 1956 ; Nair, Fl. Bash. Himal. 249. 1977.

Thorny shrubs. Leaves silvery beneath. Flowers clustered, white, fragrant. Perianth silvery.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (BSD, DD, RRL), Simla (BSD, DD).

Temperate Himalaya.

Hippophae salicifolia D. Don, Prodr. Fl. Nep. 68. 1825 ; Hook. f. Fl. Brit. India 5 : 203. 1886 ; Collett, Fl. Siml. 437. 1902 ; Parker, For. Fl. Punj. ed. 3. 435. 1956 ; Nair, Fl. Bash. Himal. 250. 1977.

Shrubs or small trees with rusty, scaly shoots. Leaves cottony pubescent above, velvety beneath with white, stellate hairs.

Fl. & Fr. : May - October.

Kinnaur (BSD, DD), Lahul and Spiti (RRL)

Temperate Himalaya.

Hippophae tibetana Schlecht. in Linnaea 32 : 296. 1863 *p.p.* *Hippophae rhamnoides* (non L.) Hook. f. Fl. Brit. India 5 : 203. 1886 ; Parker, For. Fl. Punj. ed. 3. 433. 1956 ; Nair, Fl. Bash. Himal. 250. 1977. *Hippophae rhamnoides* ssp. *tibetana* (Schlecht.) Servett. in Beih. Bot. Centralbl. 25 (2) : 18. 1909.

Thorny shrub with rigid branches and silvery twigs and leaves. Fruits oblong to globose, scarlet or orange yellow.

Fl. & Fr. : June - September.

Kinnaur (DD), Lahul and Spiti (BSIP, DD).

North Western Himalaya.

LORANTHACEAE

H. J. CHOWDHERY

Arceuthobium minutissimum Hook. f. Fl. Brit. India 5 : 227. 1886 ; Parker, For. Fl. Punj. ed. 3. 438. 1956 ; Nair, Fl. Bash. Himal. 250. 1977.

Minute, leafless parasite on *Pinus* and *Abies*. Male flowers sessile, female pedicelled.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Simla (DD).

North Western Himalaya and Nepal.

Arceuthobium oxycedra (DC.) M. Bieb. Fl. Taur. Cauc. 3 : 629. 1819 ; Parker, For. Fl. Punj, ed. 3. 438. 1956 ; Rich. f. Fl. Iran. 116 : 3. 1976. *Viscum oxycedri* DC. Fl. Franc. 4 : 274. 1805.

Small, tufted, leafless herbs. Seeds embedded in viscid, mucous and ejected with great force when the fruit is ripe.

Fl. & Fr. : May September.

Kinnaur (BSD), Lahul and Spiti (BSD, DD).

North Western Himalaya.

Dendrophthoe falcata (L. f.) Etting. in Denkschr. Akad. Wiss. Wien, Math. Naturwiss. Cl. 32 : 52, 58. 1872. *Loranthus falcatus* L. f. Suppl. Pl. 211. 1781. *Loranthus longiflorus* Desr. in Lamk. Ency. Meth. 3 : 598. 1789 ; Hook. f. Fl. Brit. India 5 : 214. 1886 ; Collett, Fl. Siml. 439. 1902 ; Parker, For. Fl. Punj, ed. 3. 436. 1956.

Glabrous parasite. Leaves opposite. Flowers red in lower part, yellow green towards the tip.

Fl. & Fr. : May October.

Chamba (LWG), Mandi (DD, LWG).

Tropical and temperate Himalaya.

Korthalsella opuntia (Thunb.) Merr. in Bot. Mag. Tokyo 30 : 68. 1916 ; Nair, Fl. Bash. Himal. 250. 1977. *Viscum opuntia* Thunb. Fl. Jap. 64. 1794. *V. japonicum* Hook. f. Fl. Brit. India 5 : 226. 1886 ; Collett, Fl. Siml. 440. 1902 (non Thunb.); Parker, For. Fl. Punj, ed. 3. 438. 1956.

Parasite on *Quercus*. Leaves absent. Branches flat. Flowers clustered in joints.

Fl. & Fr. : May October.

Chamba (DD), Kangra (DD, RRL), Kinnaur (BSD, DD), Simla (DD.), Lahul and Spiti (RRL).

Temperate Himalaya.

Scurrula cordifolia (Wall.) G. Don, Gen. Syst. 3 : 421. 1834. *Loranthus cordifolius* Wall. in Roxb. Fl. Ind. ed. Carey, 2 : 223. 1924 ; Hook. f. Fl. Brit. India 5 : 209. 1886 ; Collett, Fl. Siml. 438. 1902 ; Parker, For. Fl. Punj, ed. 3. 434. 1956.

Branches and leaves dotted with white tomentum. Leaves opposite, cordate. Flowers in axillary clusters, pink or pale yellow within and brown tomentose outside,

Fl. & Fr. : July - October.

Chamba (DD).

Temperate Himalaya.

Scurrula elata (Edgew.) Danser in Bull. Jard. Bot. Buitenz. Ser. 3. 10 : 350. 1929. *Loranthus elatus* Edgew. in Trans. Linn. Soc. 20 : 58. 1846 ; Hook. f. Fl. Brit. India 2 : 212. 1886 ; Collett, Fl. Siml. 439. 1902 ; Parker, For. Fl. Punj. ed. 3. 435. 1956.

Glabrous with rusty, pubescent buds. Leaves opposite. Flowers red in the lower part, green at the top.

Fl. & Fr. : May - September.

Kinnaur (BSD, DD), Simla (DD).

Temperate Himalaya.

Scurrula pulverulenta (Wall.) G. Don, Gen. Syst. 3 : 421. 1834 ; Nair, Fl. Bash. Himal. 251. 1977. *Loranthus pulverulentus* Wall. in Roxb. Fl. Ind. ed Carey, 2 : 221. 1824 ; Hook. f. Fl. Brit. India 5 : 211. 1886 ; Parker, For. Fl. Punj. ed. 3. 435. 1956.

Parasitic on *Pyrus*, *Prunus* and *Mallotus*. Covered with flocculent, white mealy tomentum. Flowers green to white cream.

Fl. & Fr. : May - January.

Chamba (DD), Kangra (BSD), Kinnaur (BSD, DD), Solan (DD).

Subtropical Himalaya.

Taxillus vestitus (Wall.) Danser in Bull. Jard. Bot. Buitenz. Ser. 3 : 10. 355. 1929 ; Nair, Fl. Bash. Himal. 151. 1977. *Loranthus vestitus* Wall. in Roxb. Fl. Ind. ed Carey 2 : 218. 1825 ; Hook. f. Fl. Brit. India 5 : 212. 1886 ; Collett, Fl. Siml. 439. 1902 ; Parker, For. Fl. Punj. ed. 3. 435. 1956.

Tomentose shrubs. Leaves opposite with lower tomentose surface. Flowers brown - tomentose outside, smooth and purple within.

Fl. & Fr. : May - January.

Chamba (DD), Kangra (DD), Simla (DD).

Subtropical Western Himalaya and Nepal.

Viscum album L. Sp. Pl. 1023. 1753 ; Hook. f. Fl. Brit. India 5 : 223. 1886 ; Collett, Fl. Siml. 440. 1902 ; Parker, For. Fl. Punj. ed. 3 : 437. 1956 ; Nair, Fl. Bash. Himal. 251. 1977.

Yellow green tufted, erect bush. Leaves leathery, sessile, flat. Berry globose, white, translucent.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul & Spiti (DD), Simla (BSD, DD).

Temperate Himalaya.

Viscum articulatum Burm. f. Fl. Ind. 311. 1768 ; Hook. f. Fl. Brit. India 5 : 226. 1886 ; Collett, Fl. Siml. 440. 1902 ; Parker, For. Fl. Punj. ed. 3. 437. 1956 ; Nair, Fl. Bash. Himal. 251. 1977.

Green, leafless shrubs forming pendulous tufts. Branches flat, joints grooved. Flowers minute, clustered at the tops of the joints.

Fl. & Fr. : June - October.

Simla (DD).

Subtropical Himalaya.

Viscum articulatum Burm. f. Fl. Ind. 311. 1768. var. *liquidambaricum* (Hayata) Seshagiri, Rao in Jour. Ind. Bot. Soc. 36. 133 : 1957. *V. liquidambaricum* Hayata, Icon. Pl. Formos. 5 : 104. 1915.

Fl. & Fr. : June - September.

Kulu (DD).

Himalaya - Himachal Pradesh to Assam.

Viscum nepalense Spreng. Syst. Cur. Post. 47. 1827 ; Hook. f. Fl. Brit. India 5 : 226. 1886. *V. attenuatum* DC. Prodr. 4 : 284. 1830.

Pale - green, leafless, parasitic shrubs. Flowers minute, sessile, 1 to 6 in a fascicle at the nodes, yellowish - green. Berry greenish - yellow.

Fl. & Fr. : May - August.

Simla (DD).

Throughout India.

SANTALACEAE

B. M. WADHWA AND H. J. CHOWDHERY

Osyris quadripartita Salz. ex Decne. Ann. Sci. Nat. Ser. 2, 6 : 65, t. 6. 1836. *O. arborea* Wall. ex A. DC. in DC. Prodr. 14 : 633. 1857; Hook. f. Fl. Brit. India 5 : 229. 1886. *O. wightiana* Wall. ex Wt. Icon. t. 1853. 1852 ; Collett, Fl. Siml. 442. 1902 ; Nair, Fl. Bash. Himal. 252. 1977.

Shrub with 3 angled stems. Leaves oblong ovate. Tepals yellow green.

Fl. & Fr. : June August.

Kangra (DD), Kinnaur (DD), Kulu (DD), Simla (DD).

Subtropical Himalaya, Western Ghats and Deccan peninsula.

Thesium himalense Royle ex Edgew. in Trans. Linn. Soc. 20 : 88, 1846 ; Hook. f. Fl. Brit. India 5 : 229. 1886 ; Collett, Fl. Siml. 441. 1902; Stewart, Ann. Cat. Vas. W. Pak. & Kash. 198. 1972 ; Nair, Fl. Bash. Himal. 252. 1977.

Straggling herb. Leaves linear. Tepals yellow.

Fl. & Fr. : June September.

Kinnaur (BsD, DD), Lahul and Spiti (BSD, DD).

Western Himalaya.

EUPHORBIACEAE

H. J. CHOWDHERY

Acalypha brachystachya Hornem. in Hort. Hafn. 2 : 909. 1815 ; Hook. f. Fl. Brit. India 5 : 416. 1887 ; Collett, Fl. Siml. 452. 1902 ; Nair, Fl. Bash. Himal. 252. 1977.

Small herbs. Leaves crenate with cordate base. Female flower bracts green. Capsule roughly hairy.

Fl. & Fr. : June - October.

Chamba (BSD), Kinnaur (BSD, DD) Kulu (BSD), Simla (DD).

Temperate Himalaya.

Acalypha ciliata Forssk. Fl. Aegypt Arab. 162. 1775 ; Hook. f. Fl. Brit. India 5 : 417. 1887 ; Collett, Fl. Siml. 472. 1902 ; Nair, Fl. Bash. Himal. 253. 1977.

Erect herbs. Leaves sharply toothed, long pointed. Female flower bracts pale. Capsule glabrous.

Fl. & Fr. : June - September.

Chamba (DD), Simla (DD).

Western Himalaya.

Arachne cordifolia (Decne.) Hurus. in Jour. Fac. Sci. Univ. Tokyo Bot. 6 : 339. 1954 ; Nair, Fl. Bash. Himal. 253. 1977. *Leptopus cordifolia* Decne. in Jacquem. Voy. Bot. 4 : 155. 1844. *Andrachne cordifolia* (Decne.) Muell. Arg. in DC. Prodr. 15 : 234. 1866 ; Hook. f. Fl. Brit. India 5 : 283. 1887 ; Collett, Fl. Siml. 449. 1902 ; Nair, Fl. Bash. Himal. 253. 1977.

Small shrub. Leaves alternate, long stalked, thin, ovate oblong, lower surface pale and thinly hairy. Flowers green. Capsule globose.

Fl. & Fr. : April - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (DD), Mandi (DD), Simla (DD).

Central and Western temperate Himalaya.

Baliospermum montanum (Willd.) Muell. Arg. in DC. Prodr. 15 (2) : 1125. 1866. *Jatropha montana* Willd. Sp. Pl. 4 : 563. 1805. *Baliospermum axillare* Blume, Bijdr. 604. 1826 ; Hook. f. Fl. Brit. India 5 : 461. 1887 ; Parker, For. Fl. Punj. ed. 3. 456. 1956.

Monoecious herbs. Leaves sinuate-toothed. Flowers numerous. Capsule large.

Fl. & Fr. : All the year round in flower and fruits.

Chamba (DD), Kangra (DD).

Tropical and subtropical Himalaya.

Bischoffia javanica Blume, Bijdr. 1168. 1826; Hook. f. Fl. Brit. India 5 : 345. 1887; Parker, For. Fl. Punj. ed. 3. 444. 1956.

Glabrous, deciduous trees. Flowers green, male flowers minute. Fruit blue black, fleshy.

Fl. & Fr. : April July.

Chamba (DD).

Tropical Himalaya.

Bridelia retusa (L.) Spreng. Syst. Veg. 3 : 48. 1829; Hook. f. Fl. Brit. India 5 : 268. 1887. *Clusia retusa* L. Sp. Pl. 1042. 1753.

Large, deciduous shrubs or trees. Leaves glaucous or pubescent beneath. Flowers in clusters. Fruits purple black.

Fl. & Fr. : May September.

Simla (DD), Kulu (DD).

Throughout India.

Bridelia stipularis (L.) Blume, Bijdr. 597. 1825; Hook. f. Fl. Brit. India 5 : 270. 1887. *Clusia stipularis* L. Mant. Pl. 1 : 127. 1767.

Large, scandant shrubs. Leaves subcoriaceous, elliptic ovate. Flowers monoecious, male sessile, female pedicellate. Fruit oblong, within enlarged calyx.

Fl. & Fr. : May August.

Chamba (DD), Kulu (DD).

Throughout India.

Bridelia verrucosa Haines, Journ. Bot. 59 : 193. 1921. *Bridelia montana* Hook. f. Fl. Brit. India 5 : 269. 1887. *p.p.* (non Willd.); Collett, Fl. Siml. 448. 1902.

Glabrous trees. Leaves alternate, shortly stalked. Flowers minute, pale green, sessile, in small, dense, axillary clusters, bracts pubescent. Drupe ovoid.

Fl. & Fr. : November April.

Kulu (LWG).

Himalaya.

Chrozophora hierosolymitana Spreng. Syst. Veg. 3 : 850. 1826.

Fl. & Fr. : April August.

Hamirpur (DD), Una (DD).

Chrozophora obliqua (Vahl.) Juss. ex Spreng. Syst. Bot. Veg. 3 : 850. 1826 ; Hook. f. Fl. Brit. India 5 : 409. 1887. *Croton obliquus* Vahl, Symb. 1 : 78. 1790.

Bushy, tall undershrub with thick, stellate tomentum. Capsule stellately tomentose with silvery scales.

Fl. & Fr. : May August.

Lahul and Spiti (BSD).

Throughout India.

Euphorbia clarkeana Hook. f. Fl. Brit. India 5 : 253. 1887

Prostrate, glabrous spreading herb. Leaves opposite, coriaceous.

Fl. & Fr. : June September.

Lahul and Spiti (BSD).

North-Western India.

Euphorbia edgeworthii Boiss. in DC. Prodr. 15(2) : 120. 1866 ; Hook. f. Fl. Brit. India 5 : 261. 1887.

Tall, robust, glabrous herbs. Leaves sessile, membranous, oblong. Involucres small, campanulate, villous. Capsule warted.

Fl. & Fr. : May August.

Kulu (LWG), Simla (BSIP).

Western Himalaya.

Euphorbia fusiformis Buch. Ham. ex D. Don, Prodr. Fl. Nep. 62. 1825 ; Hook. f. Fl. Brit. India 5 : 257. 1887.

Dwarf, glabrous herbs with cylindric, stout root-stock. Leaves fleshy nerveless. Involucres greenish.

Fl. & Fr. : March July.

Kulu (DD).

Tropical Himalaya.

Euphorbia heterophylla L. Sp. Pl. 453. 1753. *Poinsettia heterophylla* (L.) Klotzsch & Garcke ex Klotzsch in Monatsber. Akad. Berlin 1859 : 253. 1859. *Euphorbia geniculata* Ort. ex Boiss. in DC. Prodr. 15(2) : 72. 1866 ; Nair, Fl. Bash. Himal. 253. 1977. *E. heterophylla* var. *elliptica* O. Ktze. Rev. Gen. Pl. 506. 1891.

Herbs. Leaves oblanceolate. Glands without any appendage.

Fl. & Fr. : July September.

Kangra (DD), Kinnaur (BSD), Kulu (BSD), Simla (DD), Mandi (BSIP).

Himalaya.

Euphorbia helioscopia L. Sp. Pl. 459. 1753 ; Hook. f. Fl. Brit. India 5 : 262. 1887 ; Collett, Fl. Siml. 446. 1902 ; Nair, Fl. Bash. Himal. 254. 1977.

Erect, glabrous herbs. Leaves alternate. Involucres in umbels. Glands rounded.

Fl. & Fr. : April July.

Chamba (BSIP, CDRI), Kangra (RRL), Kulu (DD), Simla (BSIP, DD)

Western Himalaya.

Euphorbia himalayensis Boiss. in DC. Prodr. 15(2) : 113. 1866 ; Hook. f. Fl. Brit. India 5 : 258. 1887.

Succulent, sparingly branched herbs. Leaves coriaceous. Involucre hidden in the involucreal leaves.

Fl. & Fr. : March August.

Simla (BSIP).

Temperate Himalaya.

Euphorbia hirta L. Sp. Pl. 454. 1753 ; Nair, Fl. Bash. Himal. 254. 1977. *E. pilulifera* L. Sp. Pl. 454. 1753 ; Hook. f. Fl. Brit. India 5 : 250. 1887 (non L.).

Hispid herbs. Leaves obliquely lanceolate, hispidly pubescent. Cythia capitate.

Fl. & Fr. : June October.

Chamba (DD), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSIP, DD), Simla (BSD, BSIP).

Throughout the hotter parts of India.

Euphorbia hispida Boiss. Cent. Euphorb. 8. 1856 et DC. Prodr. 15(2): 27. 1866; Hook. f. Fl. Brit. India 5 : 265. 1887. *Euphorbia emodi* Hook. f. Fl. Brit. India 5 : 250. 1887; Collett, Fl. Siml. 445. 1902; Nair, Fl. Bash. Himal. 253. 1977.

Decumbent herbs with hairy, purplish stems. Leaves opposite with purple blotch on the upper surface. Glands red.

Fl. & Fr. : June - September.

Chamba (BSD, DD), Kinnaur (BSD), Kulu (BSD), Lahul and Spiti (DD), Mandi (BSIP), Simla (BSD).

Himachal Pradesh.

Euphorbia indica Lam. Dict. Bot. 2 : 423. 1786. *Euphorbia hyperticifolia* Hook. f. Fl. Brit. India 5 : 249. 1887. (non L.) ; Collett, Fl. Siml. 445. 1902.

Glabrous or sparsely pubescent herbs. Leaves opposite, serrulate, obliquely oblong, obtuse. Involucres very minute, glabrous, turbinate.

Fl. & Fr. : July - October.

Chamba (BSD), Kangra (BSD, DD, RRL), Kinnaur (BSD, DD), Kulu (CDRI), Simla (BSIP, DD).

Euphorbia jacquemontii Boiss. in DC. Prodr. 15 (2) : 113. 1866; Hook. f. Fl. Brit. India 5 : 258. 1887.

Simple or puberulous herbs. Leaves lanceolate, glabrous, often reddish. Involucres campanulate, hirsute.

Fl. & Fr. : March - August.

Kulu (DD), Lahul and Spiti (LWG).

Western Himalaya.

Euphorbia kanaonica Boiss. in DC. Prodr. 15 (2) : 154. 1866; Hook. f. Fl. Brit. India 5 : 264. 1887.

Flaccid, flexuous, glabrous herbs. Leaves alternate, coriaceous, spatulate. Involucres in the axil of 2 opposite leaves, campanulate.

Fl. & Fr. : March - July.

Lahul and Spiti (DD).

Western Himalaya.

Euphorbia maddeni Boiss. in DC. Prodr. 15 (2) : 141. 1866 ; Hook. f. Fl. Brit. India 5 : 263. 1887 ; Collett, Fl. Siml. 447. 1902 ; Nair, Fl. Bash. Himal. 254. 1977.

Erect, glabrous herbs. Leaves alternate, spatulate. Involucre solitary in the forks of the branches or some times in umbels. Glands yellow, crescent shaped.

Fl. & Fr. : May September.

Kinnaur (BSD), Kulu (CDRI), Simla (DD).

Western Himalaya and Nepal.

Euphorbia nivulia Buch. Ham. in Trans. Linn. Soc. Bot. 14 : 286. 1825 ; Hook. f. Fl. Brit. India 5 : 255. 1887 ; Parker, For. Fl. Punj. ed. 3. 443. 1956.

Erect, fleshy, glabrous trees. Leaves alternate, linear-oblong, fleshy, glabrous. Involucre 3 in a cyme with a minute serrulate bract at their base.

Fl. & Fr. : April August.

North-Western Himalaya.

Euphorbia parviflora L. Syst. ed. 2. 1047. 1759 ; Nair, Fl. Bash. Himal. 254. 1977. *Euphorbia hypericifolia* (auct. mult. non L.) Hook. f. Fl. Brit. India 5 : 250. 1887. *p.p.* ; Collett, Fl. Siml. 445. 1902.

Ascending erect herbs. Leaves opposite. Glands small, green, bordered by a conspicuous white or pinkish white rounded limb.

Fl. & Fr. : April October.

Chora (DD), Kinnaur (BSD).

Himalaya.

Euphorbia pilosa L. Sp. Pl. 460. 1753 ; Hook. f. Fl. Brit. India 5 : 260. 1887 ; Collett, Fl. Siml. 466. 1902 ; Nair, Fl. Bash. Himal. 254. 1977.

Glabrous or pubescent herbs. Leaves alternate, ovate or spatulate. Involucres in umbels, 4 toothed, glands yellow.

Fl. & Fr. : June October.

Chamba (BSD, DD, RRL), Kangra (RRL), Kinnaur (DD), Kulu (DD), Simla (DD).

Western Himalaya.

Euphorbia prostrata Ait. Hort. Kew ed. 1. 2 : 139. 1789 ; Hook. f. Fl. Brit. India 5 : 266. 1887 ; Nair, Fl. Bash. Himal. 255. 1977.

Weak, prostrate, herbs. Stem and leaves pinkish green.

Fl. & Fr. : June - August.

Kinnaur (BSD), Simla (BSD).

Western Himalaya and Nepal.

Euphorbia rivulia Buch. Ham. in Trans. Linn. Soc. Bot. 14 : 286. 1825 ; Hook. f. Fl. Brit. India 5 : 255. 1887 ; Parkar, For. Fl. Punj. ed. 3. 443. 1956.

Erect, fleshy, glabrous trees. Leaves alternate, linear-oblong, fleshy, glabrous. Involucre 3 in a cyme, with a minute, serrulate bract at their base.

Fl. & Fr. : April August.

North-Western Himalaya.

Euphorbia royleana Boiss. in DC. Prodr. 15 (2) : 83. 1866 ; Hook. f. Fl. Brit. India 5 : 257. 1887 ; Collett, Fl. Siml. 446. 1902 ; Nair, Fl. Bash. Himal. 255. 1977.

Erect, glabrous, cactus like fleshy shrubs. Leaves alternate, sessile, spatulate, with thorny, persistent stipules. Involucres yellow. Glands brown.

Fl. & Fr. : June July.

Kinnaur (BSD).

Himalaya, Himachal Pradesh to Nepal.

Euphorbia stracheyi Boiss. in DC. Prodr. 15 (2) : 114. 1866 ; Hook. f. Fl. Brit. India 5 : 259. 1887 ; Nair, Fl. Bash. Himal. 255. 1977.

Prostrate, pubescent herbs, with long, stout, woody root stocks. Involucres in umbels, yellow.

Fl. & Fr. : May August.

Kinnaur (BSD), Kulu (DD), Simla (DD).

Alpine Himalaya.

Euphorbia tibetica Boiss. in DC. Prodr. 15 (2) : 114. 1866 ; Hook. f. Fl. Brit. India 5 : 260. 1887.

Suberect or straggling, glabrous herbs. Leaves alternate, sessile, linear or spatulate-oblong. Involucres axillary. Glands large.

Fl. & Fr. : June - September.

Lahul and Spiti (BSD), Mandi (BSIP).

Western Tibet and Himachal Pradesh.

Euphorbia thymifolia L. Sp. Pl. 454. 1753 ; Hook. f. Fl. Brit. India 5 : 252. 1887 ; Collett, Fl. Siml. 446. 1902.

Pubescent, much branched herbs. Stems spreading flat on the ground. Leaves opposite, oblong. Involucres minute. Glands green, bordered with white.

Fl. & Fr. : June - September.

Kangra (RRL), Simla (DD).

Throughout India.

Euphorbia thyrsoidea Boiss. in DC. Prodr. 15 (2) : 164. 1866 ; Hook. f. Fl. Brit. India 5 : 265. 1887.

Tall, glabrous, branched herbs with grooved stems. Leaves membranous. Thyse terminal reddish in flower. Involucres hemispherical,

Fl. & Fr. : March - June.

Simla (DD, LWG).

North-Western Himalaya.

Euphorbia wallichii Hook. f. Fl. Brit. India 5 : 258. 1887.

Tall, erect, pubescent herbs. Leaves sessile, alternate, linear-oblong, membranous, hairy on the midrib.

Fl. & Fr. : June - September.

Chamba (RRL).

Western and Central Himalaya.

Flueggea virosa Roxb. ex Willd. Sp. Pl. 4 : 758. 1805. *Securinega virosa* (Roxb. ex Willd.) Pax. & Hoffm. in Engl. & Prantl, Nat. Pflam. 60. 1931. *Flueggea microcarpa* Blume, Bijdr. 580. 1825 ; Hook. f. Fl. Brit. India 5 : 328. 1887 ; Collett, Fl. Siml. 451. 1902 ; Parker, For. Fl. Punj. 3. 442. 1956.

Glabrous shrubs. Leaves alternate, in 2 rows. Flowers minute, yellow green in axillary clusters, male and female on separate plants. Fruits globose, crowned by star like stigma.

Fl. & Fr. : May August.

Kangra (BSD), Kinnaur (DD).

Throughout India.

Glochidion velutinum Wight, *Icones Pl. Ind. Or.* 5(2): 29. t. 1907. 1852; Hook. f. *Fl. Brit. India* 5 : 322. 1887; Collett, *Fl. Siml.* 451. 1902; Nair, *Fl. Bash. Himal.* 255. 1977.

Small trees, young branches softly tomentose. Leaves alternate, in 2 rows, pubescent, entire. Flowers small, yellow green in axillary clusters. Male and female flowers in the same clusters.

Fl. & Fr. : May August.

Chamba (CDRI), Kinnaur (DD), Simla (DD).

Himalaya.

Mallotus philippensis (Lam.) Muell. Arg. in *Linnaea* 34 : 196. 1865 6; Hook. f. *Fl. Brit. India* 5 : 442. 1887; Collett, *Fl. Siml.* 453; 1902; Nair, *Fl. Bash. Himal.* 255. 1977. *Croton philippense* Lam. *Encycl. Meth. Bot.* 209. 1786.

Small trees, young branches and inflorescence rusty pubescent. Leaves alternate, lower surface rusty tomentose. Flowers small, male and female on separate plants.

Fl. & Fr. : April October.

Chamba (DD, RRL), Kangra (RRL), Kinnaur (BSD, DD), Mandi (DD, LWG).

Himalaya Himachal Pradesh to Bhutan.

Phyllanthus emblica L. *Sp. Pl.* 982. 1753; Hook. f. *Fl. Brit. India* 5 : 289. 1887; Collett, *Fl. Siml.* 450. 1902. *Embliva officinalis* Gaertn. *Fruct.* 2 : 122. t. 108. 1791.

Small trees, foliage feathery. Flowers yellow green, densely clustered, male numerous, female few. Fruit succulent, globose, pale - yellow, acidic.

Fl. & Fr. : April September.

Kangra (RRL), Una (BSD).

Throughout India, often cultivated

Phyllanthus fraternus Webster in Contrib. Gray Herb. No. 176 : 53. 1955 ; Nair, Fl. Bash. Himal. 256. 1977. *P. niruri* Hook. f. Fl. Brit. India 5 : 298. 1887 (non L.).

Erect herbs. Leaves districhous. Flowers minute.

Fl. & Fr. : July September.

Chamba (DD), Kinnaur (BSD), Kulu (CDRI).

Throughout India.

Phyllanthus parvifolius Buch. Ham. in D. Don, Prodr. Fl. Nepl. 63. 1825 ; Hook. f. Fl. Brit. India 5 : 294. 1887 ; Collett, Fl. Siml. 450. 1902 ; Nair, Fl. Bash. Himal. 256. 1977.

Small shrubs, branches pendulous, minutely pubescent. Flowers minute, purple brown.

Fl. & Fr. : June October.

Kinnaur (DD).

Temperate Himalaya.

Phyllanthus urinaria L. Sp. Pl. 982. 1753 ; Hook. f. Fl. Brit. India 5 : 293. 1887 ; Nair, Fl. Bash. Himal. 256. 1977.

Glabrous herbs with angled branches. Leaves glaucous beneath, membranous. Male flowers small.

Fl. & Fr. : June September.

Kangra (DD), Kinnaur (BSD).

Throughout India.

Phyllanthus virgatus G. Forst. Fl. Ins. Austr. Prodr. 65. 1786. *Phyllanthus simplex* Retzcius, Obs. 5 : 29. 1789 ; Hook. f. Fl. Brit. India 5 : 295. 1887 ; Collett, Fl. Siml. 450. 1902.

Erect, small, glabrous shrubs. Leaves narrowly oblong, pale on the lower surface. Flowers minute, brown purple.

Fl. & Fr. : July October.

Himalaya Himachal Pradesh to Bhutan.

Ricinus communis L. Sp. Pl. 1007. 1753 ; Hook. f. Fl. Brit. India 5 : 457. 1887 ; Nair, Fl. Bash. Himal. 256. 1977.

Evergreen shrubs. Leaves peltate, large, palmately lobed, serrate. Flowers large in terminal, subpanicled racemes, monoecious.

Fl. & Fr. : May August.

Kinnaur (BSD).

Cultivated throughout India.

Sapium insigne (Royle) Benth. ex Hook. f. *Fl. Brit. India* 5 : 471, 1888 ; Collett, *Fl. Siml.* 453. 1902 ; Parker, *For. Fl. Punj.* ed. 3. 456. 1956. *Falconeria insignis* Royle, *Ill. Bot. Himal. Mount.* 354. t. 98. f. 2. 1839. *Falconeria wallichiana* Royle, *Ill. Bot. Himal. Mount.* 354. t. 98. f. 3. 1839.

Glabrous shrub or small trees. Leaves alternate, toothed. Flowers small, yellow - green, on thick, erect, terminal, solitary spikes. Male and female on the same plant but on different spikes.

Fl. & Fr. : May August.

Mandi (CDRI).

Subtropical Himalaya.

Sapium sebiferum Roxb. *Fl. Ind.* 3 : 693. 1832 ; Hook. f. *Fl. Brit. India* 5 : 470. 1888.

Small glabrous trees. Leaves long petioled, glaucous beneath.

Fl. & Fr. : June August.

Kangra (BSD, RRL), Kulu (RRL), Mandi (CDRI, LWG),

Cultivated in various parts of India.

Trewia nudiflora L. *Sp. Pl.* 1193. 1753 ; Hook. f. *Fl. Brit. India* 5 : 423. 1887.

Large, deciduous, woolly or tomentose trees. Leaves membranous. Female flowers solitary or sometimes few on long peduncles.

Fl. & Fr. : February May.

Simla (DD).

Throughout India.

BUXACEAE

H. J. CHOWDHERY

Buxus papillosa Schn. Ill. Handb. Laubholz, 2 : 139, 1907 ; Parker, For. Fl. Punj. ed. 3, 446, 1956 ; Nair, Fl. Bash. Himal. 256, 1977. *Buxus sempervirens* (non L.) Hook. f. Fl. Brit. India 5 : 267, 1887 p.p. ; Collett, Fl. Siml. 448, 1902 p. p.

Branched shrub or trees. Leaves opposite, entire, obtuse. Flowers small, yellow green, strongly scented, terminal flowers usually female and rest male. Horns of the capsule erect.

Fl. & Fr. : May - December.

Simla (DD).

Temperate Himalaya.

Buxus wallichiana Baill. Monogr. Bux. et Styloc. 63, 1859 ; Parker, For. Fl. Punj. ed. 3, 445, 1956 ; Nair, Fl. Bash. Himal. 256, 1977. *Buxus sempervirens* (non L.) Hook. f. Fl. Brit. India 5 : 267, 1887 p. p. ; Collett, Fl. Siml. 448, 1902 p. p.

Small trees with pubescent shoots. Horns of the capsule spreading.

Fl. & Fr. : April - November.

Chamba (DD), Kinnaur (BSD, DD), Kulu (DD), Simla (BSIP, DD).

Temperate Himalaya.

Sarcococca coriacea (Hook.) Sweet, a H. Br. 491, 1827 ; Hara *et al.* Enum. Fl. Pl. Nep. 3 : 202, 1982. *Pachysandra coriacea* Hook. Exot. Fl. 2 : t. 148, 1825. *Sarcococca pruniformis* Lindl. in Bot. Reg. 12 : t. 1012, 1826 ; Hook. f. Fl. Brit. India 5 : 266, 1887, p.p.

Shrubs. Racemes lax or dense, female flowers below the males. Flowers yellow.

Fl. & Fr. : June - September.

Simla (BSIP).

Himalaya - Simla to Nepal and Assam.

Sarcococca saligna (D. Don) Muell. Arg. in DC. Prodr. 16 : 11. 1869 ; Parker, For. Fl. Punj. ed. 3. 451. 1956 ; Nair, Fl. Bash. Himal. 257. 1977. *Buxus saligna* D. Don, Prodr. Fl. Nep. 63. 1825. *Sarcococca pruniformis* Lindl. Bot. Reg. t. 1012. 1926 ; Hook. f. Fl. Brit. India 5 : 266. 1887 ; Collett, Fl. Siml. 448. 1902.

Monoecious, glabrous shrubs. Flowers pale yellow, a few female towards the base and rest are male. Capsule ovoid, 3 horned.

Fl. & Fr. : May - October.

Chamba (BSD, DD), Kangra (BSD, DD, RRL), Kinnaur (BSD, BSIP, DD, LWG.), Solan (BSIP).

Temperate Himalaya.

DAPHNIPHYLLACEAE

Daphniphyllum himalayense Muell. Arg. in DC. Prodr. 16 (1) : 4 1869 ; Hook. f. Fl. Brit. India 5 : 354. 1887 ; Parker, For. Fl. Punj. ed. 3. 448. 1956.

Small trees with robust branches. Leaves glaucous beneath. Fruits ellipsoid, slightly tubercled when dry.

Fl. & Fr. : May - September.

Chamba (DD), Kangra (DD).

Temperate Himalaya.

URTICACEAE

H. J. CHOWDHERY

Boehmeria platyphylla D. Don, Prodr. Fl. Nepal. 60 : 1825 ; Hook. f. Fl. Brit. India 5 : 578. 1888 ; Collett, Fl. Siml. 466. 1902 ; Parker, For. Fl. Punj. ed. 3. 467. 1956.

Shrubs with rough or smooth pubescent. Leaves ovate, roughly pubescent or sparsely hispid. Flowers small, unisexual, white, male spikes erect, female pendulous. Achenes enclosed in dry perianth.

Chamba (DD, RRL), Kangra (DD, RRL), Kulu (BSD, LWG, RRL), Simla (BSIP, DD).

Subtropical and tropical Himalaya.

Boehmeria rugulosa Weddell in Ann. Sci. Nat. Ser. 4. 1 : 200. 1854. et in Monogr. Urtic. 378. 1856 ; Hook. f. Fl. Brit. India 5 : 577. 1888 ; Parker, For. Fl. Punj. ed. 3. 467. 1956.

Large shrubs or small trees. Leaves coriaceous, glabrous, dark-green above, pale, velvety beneath. Flowers dioecious.

Fl. & Fr. : September - January.

Chamba (DD), Simla (BSD, BSIP, LWG).

Subtropical Himalaya.

Debregeasia longifolia (Burm. f.) Weddell in DC. Prodr. 16 (1) : 235. 1869. *Urtica longifolia* Burm. f. Fl. Ind. 197. 1768. *Debregeasia velutina* Gaudich. Bot. Bonite Voy. t. 90, 1842 43 ; Hook. f. Fl. Brit. India 5 : 590. 1888.

Tall shrubs with tomentose or villous branches and petioles. Fruits yellow.

Fl. & Fr. : March - June.

Chamba (BSIP).

Subtropical Himalaya.

Debregeasia salicifolia (D. Don) Rendle in Prain, Fl. Trop. Afri. 6 (2) : 295. 1917 ; Nair, Fl. Bash. Himal. 260. 1977. *Boehmeria salicifolia* D. Don, Prodr. Fl. Nepal. 60. 1825. *D. hypoleuca* (Hochst.) Wedd. Monogr. Urt. 463. t. 15. A. f. 10, 11. 1855 1856 ; Hook. f. Fl. Brit. India 5 : 591. 1888 ; Collett, Fl. Siml. 468. 1902.

Softly pubescent shrubs. Leaves long pointed, lower white tomentose. Flowers unisexual. Drupes small, yellow, aggregated in a head.

Fl. & Fr. : May - August.

Kinnaur (BSD, DD).

Western temperate Himalaya and Nepal.

Elatostema pusillum Clarke ex Hook. f. Fl. Brit. India 5 : 568. 1888 ; Collett, Fl. Siml. 466. 1902 ; Nair, Fl. Bash. Himal. 261. 1977.

Erect, slender, weak herbs. Leaves obliquely elliptic, membranous. Flowers small. Achenes fusiform, striate.

Fl. & Fr. : August - September.

Simla (DD).

Temperate Himalaya.

Elatostema sessile J. R. & G. Forst. Char. Gen. Pl. Austr. 106. 1776 ; Hook. f. Fl. Brit. India 5 : 563. 1888 ; Nair, Fl. Bash. Himal. 261. 1977.

Prostrate or diffuse herbs. Leaves sessile, toothed. Achenes very minute.

Fl. & Fr. : June - November.

Kangra (RRL), Simla (BSIP, DD).

Temperate and subtropical Himalaya.

Elatostema surculosum Wight, Icon. Pl. Ind. Or. 6 : 35. t. 2091. f. 4. 1853 ; Hook. f. Fl. India 5 : 572. 1888 ; Collett, Fl. Siml. 465. 1902 ; Nair, Fl. Bash. Himal. 261. 1977.

Tufted, slender, erect herbs. Leaves few, lower ones entire, upper serrate, each leaf having a small one opposite to it. Achenes slender, ribbed.

Fl. & Fr. : July - October.

Kinnaur (DD), Simla (DD).

Temperate Himalaya.

Girardinia diversifolia (Link) Friis in Kew Bull. 36 : 143. 1981. *Urtica diversifolia* Link, Enum. Hort. Berol. 2 : 385. 1822. *Urtica heterophylla* (auct. non Vahl) D. Don, Prodr. Fl. Nepal. 59. 1825. *Girardinia heterophylla* Decne. in Jacquem. Voy. Bot. 4 : 151. t. 153. 1835 ; Hook. f. Fl. Brit. India 5 : 550. 1888. *Girardinia palmata* (Forssk.) Gaudich. in Freyc. Voy. Bot. 498. 1826. *Urtica palmata* Forssk. Fl. Aegypt Arab. 159. 1775 ; Hook. f. Fl. Brit. India 5 : 550. 1888.

Tufted, tall, coarse herbs with stout stinging hairs. Leaves hirsute beneath. Male cymes loosely paniculate, flowers subsessile, hispid. Fruiting cymes elongate, lobulate.

Fl. & Fr. : April - October.

Chamba (BSD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (RRL), Simla (DD).

Temperate and subtropical Himalaya.

Gonostegia hirta (Blume) Miq. in Ann. Mus. Bot. Lugd. Bat. 4 : 303. t. 10 f. 2. 1869 ; Nair, Fl. Bash. Himal. 261. 1977. *Urtica hirta* Blume, Bijdr. 495. 1826, *Pouzolzia hirta* (Blume) Hassk. Cat. Hort. Bogor. 80. 1858 p. p. ; Hook. f. Fl. Brit. India 5 : 586. 1888 p. p. ; Collett, Fl. Siml. 468. 1902 p. p.

Decumbent herbs. Leaves opposite, entire, pointed. Flowers in small, rounded dense clusters. Fruits strongly ribbed, winged.

Fl. & Fr. : June September.

Kinnaur (BSD).

Tropical Himalaya.

Lecanthus peduncularis (Royle) Wedd. in DC. Prodr. 16 (1) : 164. 1869 ; Nair, Fl. Bash. Himal. 261. 1977. *Procris peduncularis* Royle, Ill. Bot. Himal. Mount. t. 83. f. 3. 1836. *Lecanthus wallichii* Wedd. in Ann. Sci. Nat. Ser. 4. 1 : 187. 1854 ; Collett, Fl. Siml. 465. 1902. *L. wightii* Wedd. in Ann. Sci. Nat. Ser. 4. 1 : 187. 1854 ; Hook. f. Fl. Brit. India 5 : 559. 1888.

Succulent, pubescent herbs. Leaves opposite, toothed with long tail like tip. Flowers pink. Achenes rough, perianth purple red.

Fl. & Fr. : July October.

Chamba (BSD, RRL), Kinnaur (BSD, DD), Kulu (BSD, DD), Simla (BSD, DD).

Temperate and subtropical Himalaya.

Maoutia puya (Hook. f.) Weddell in Ann. Sci. Nat. Ser. 4. 1 : 193. 1854 ; Hook. f. Fl. Brit. India 5 : 592. 1888 ; Parker, For. Fl. Punj. ed. 3. 468. 1956. *Boehmeria puya* Hook. in Lond. Journ. Bot. 3 : 316. t. 7. 1851.

Shrubs with hairy branches. Leaves membranous, scabrid above, white tomentose beneath. Flowers monoecious or dioecious. Achenes minute, ovoid, hispid.

Fl. & Fr. : March September.

Chamba (DD).

Tropical Himalaya.

Oreocnide frutescens (Thunb.) Miq. in Ann. Mus. Bot. Lugd. 3 : 131. 1867. *Urtica frutescens* Thunb. Fl. Jap. 70. 1784. *Villebrunea frutescens* (Thunb.) Blume in Mus. Bot. 2 : 168. 1856 ; Hook. f. Fl. Brit. India 5 : 590. 1888.

Small tree with slender branches. Leaves membranous, sparsely pilose above. Male flowers in subsessile clusters, female in short cymes.

Fl. & Fr. : April - October.

Chamba (BSD), Kangra (DD).

Tropical Himalaya.

Parietaria micrantha Ledeb. Ic. Pl. Alt. 1 : 7, t. 22. 1829. *Parietaria debilis* Forst. Prodr. 387. 1786 ; Hook. f. Fl. Brit. India 5 : 593. 1888 ; Collett, Fl. Siml. 469. 1902 ; Nair, Fl. Bash. Himal. 262. 1977.

Diffuse, flaccid, pubescent herbs. Leaves thin, entire, long stalked. Flowers minute, polygamous in axillary clusters. Achenes enclosed in the ovoid, persistent perianth.

Fl. & Fr. : July - October.

Chamba (DD), Kinnaur (BSD, DD), Kulu (BSD), Lahul and Spiti (BSD, DD), Simla (DD).

Temperate Himalaya.

Pilea racemosa (Royle) Tuyama in Hara Fl. East. Himal. 61. 1966 ; Nair, Fl. Bash. Himal. 262. 1977. *Procris racemosa* Royle, Bot. Himal. Mount. t. 83. f. 1. 1836. *P. wightii* Wedd. var. *roylei* Hook. f. Fl. Brit. India 5 : 555. 1888.

Very small, slender herbs.

Fl. & Fr. : June - September.

Kulu (BSD).

Temperate Himalaya.

Pilea scripta (Buch. - Ham.) Wedd. Monogr. Urt. 222. 1856 ; Hook. f. Fl. Brit. India 5 : 556. 1888 ; Collett, Fl. Siml. 464. 1902. *Urtica scripta* Buch. - Ham. in D. Don, Prodr. Fl. Nepal. 59. 1825.

Glabrous, tall herbs. Leaves lanceolate, tapering at both the ends, long pointed. Achenes rough.

Fl. & Fr. : May - October.

Chamba (BSD, DD, RRL), Kangra (BSD), Kinnaur (DD), Kulu (DD), Mandi (LWG), Simla (DD).

Temperate Himalaya.

Pilea symmeria Wedd. Monogr. Urt. 246. 1856 ; Hook. f. Fl. Brit. India 5 : 554. 1888.

Erect, slender herbs. Leaves membranous. Flowers in cymes, monoecious or dioecious.

Fl. & Fr. : June - September.

Kinnaur (DD).

Temperate Himalaya.

Pilea umbrosa (Wedd. in Ann. Sci. Nat. Ser. 4. 1 : 187. 1854 nom. nud.) Blume, Mus. Bot. Lugd. Bat. 2 : 56. 1856. ; Hook. f. Fl. Brit. India 5 : 556. 1888 ; Collett, Fl. Siml. 464. 1902 ; Nair, Fl. Bash. Himal. 262. 1977.

Tall, robust herbs, densely clothed with flexuous hairs. Leaves ovate with a tail like tip. Achenes pale, straight.

Fl. & Fr. : June - October.

Chamba (BSD, CDRI, DD, RRL), Kinnaur (BSD, DD), Kangra (DD), Kulu (DD), Simla (DD, LWG).

Temperate Himalaya.

Pouzolzia pentandra Benn. et Br. Pl. Jav. Rar. 64. t. 14. 1834 ; Hook. f. Fl. Brit. India 5 : 583. 1888 ; Collett, Fl. Siml. 468. 1902 ; Nair, Fl. Bash. Himal. 263. 1977.

Erect, nearly glabrous herbs with long slender branches. Flowers in small clusters. Fruits 3 winged.

Fl. & Fr. : June - September.

Kangra (DD), Simla (DD).

Tropical Himalaya.

Pouzolzia quinquenervis Benn. et Br. Pl. Jav. Rar. 67. 1838 ; Nair, Fl. Bash. Himal. 263. 1977. *Pouzolzia hirta* (Blume) Hassk. Cat. Hort.

Bogor. 80. 1844 *p. p.* ; Hook. f. Fl. Brit. India 5 : 586. 1888 *p. p.* ; Collett, Fl. Siml. 468. 1902 *p. p.*

Decumbent or suberect herbs. Leaves opposite, almost sessile. Flowers in small rounded, dense clusters. Fruits strongly ribbed, sometimes winged.

Fl. & Fr. : August October.

Chamba (BSD, DD), Kangra (BSD), Kinnaur (BSD, DD), Simla (DD).

Tropical Himalaya.

Pouzolzia sanguinea (Blume) Merr. in J. Str. Branch As. S. Spec. No. 84 : 233. 1921. *Urtica sanguinea* Blume, Bijdr. 500. 1826. *Pouzolzia viminea* Weddell in DC. Prodr. 16. 1 : 228. 1869 ; Hook. f. Fl. Brit. India 5 : 581. 1888 ; Collett, Fl. Siml. 457. 1902 ; Parker, For. Fl. Punj. ed. 3. 468. 1956.

Erect shrubs with straight, slender branches. Leaves long petioled, lower surface usually pale or white tomentose. Flowers in small, dense, rounded clusters.

Fl. & Fr. : June September.

Kulu (DD), Mandi (DD).

Tropical and subtropical Himalaya.

Pouzolzia zeylanica (L.) Benn. et Br. Pl. Jav. Rar. 67. 1837 ; Nair, Fl. Bash. Himal. 263. 1977. *Parietaria zeylanica* L. Sp. Pl. 1052. 1753. *Pouzolzia indica* (L.) Gaudich. in Freyc. Voy. Bot. 503. 1830 ; Hook. f. Fl. Brit. India 5 : 581. 1888 ; Collett, Fl. Siml. 467. 1902.

Small herbs with somewhat prostrate stems and slender, spreading branches. Leaves opposite. Flowers in small clusters. Fruits ribbed, sometimes winged.

Fl. & Fr. : August October.

Chamba (DD), Kinnaur (BSD, DD), Simla (DD).

Throughout tropical and subtropical Himalaya.

Urtica dioica L. Sp. Pl. 984. 1753 ; Hook. f. Fl. Brit. India 5 : 548. 1888 ; Collett, Fl. Siml. 462. 1902 ; Nair, Fl. Bash. Himal. 263. 1977.

Robust, grooved herbs. Leaves cordate, large, toothed, long pointed. Male and female flowers on separate plants.

Fl. & Fr. : May - October.

Chamba (BSD), Kangra (DD, RRL), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD, RRL).

North - Western Himalaya and Nepal.

Urtica hyperborea Jacq. ex Wedd. in Ann. Sci. Nat. Ser. 4, 1 : 180. 1854 ; Hook. f. Fl. Brit. India 5 : 548. 1888.

Low, densely tufted, pubescent undershrubs. Leaves glandular pubescent beneath.

Fl. & Fr. : June - September.

Lahul and Spiti (DD).

Tibet and Himalaya - Kashmir to Bhutan.

Urtica mairei H. Lev. in Fedde Repert. 12 : 183. 1913. *Urtica parviflora* Roxb. Fl. Ind. 3 : 581. 1832 ; Hook. f. Fl. Brit. India 5 : 548. 1888 ; Collett, Fl. Siml. 462. 1902 ; Nair, Fl. Bash. Himal. 274. 1977.

Slender, erect herbs. Leaves small, toothed. Male and female flowers on the same plant.

Fl. & Fr. : May - October.

Kinnaur (BSD), Kulu (BSD).

Temperate Himalaya.

ULMACEAE

H. J. CHOWDHERY

Celtis australis L. Sp. Pl. 1043. 1753 ; Hook. f. Fl. Brit. India 5 : 482. 1888 ; Collett, Fl. Siml. 455. 1902 ; Parker, For. Fl. Punj. ed. 3. 464. 1956 ; Nair, Fl. Bash. Himal. 257. 1977.

Trees with slender, pendulous branches. Leaves long pointed, sharply toothed. Flowers pale-yellow, males in clusters or short racemes towards the base of the shoots, female and bisexual in the axil of upper leaves. Fruit, a long stalked drupe with a wrinkled stone.

Fl. & Fr. : April October.

Chamba (DD), Kinnaur (DD), Simla (BSIP).

Temperate Himalaya.

Celtis australis L. var. *eriocarpa* (Decne.) Hook. f. *Fl. Brit. India* 5 : 482. 1888 ; Nair, *Fl. Bash. Himal.* 257. 1977. *Celtis eriocarpa* Decne. in Jacquem. *Voy. Bot.* 150. t. 152. 1844 ; Parker, *For. Fl. Punj.* ed. 3. 465. 1956.

Trees. Drupe pubescent, tomentose or woolly. Flowers small, greenish.

Fl. & Fr. : August October.

Chamba (DD), Kinnaur (DD).

Temperate Himalaya.

Celtis caucasica Willd. in L. *Sp. Pl.* ed. 4. 994. 1805 ; Parker, *For. Fl. Punj.* ed. 3. 465. 1956.

Small, deciduous trees with smooth-grey bark. Flowers small, greenish. Drupe deep reddish-brown when ripe.

Fl. & Fr. : May October.

Chamba (DD), Kangra (BSD), Kinnaur (BSD).

North - Western Himalaya.

Celtis tetrandra Roxb. *Fl. Ind.* ed. Carey 2. 2 : 63. 1832 ; Hook. f. *Fl. Brit. India* 5 : 482. 1888 ; Parker, *For. Fl. Punj.* ed. 3. 464. 1956 ; Nair, *Fl. Bash. Himal.* 257. 1977.

Large trees with smooth, grey bark. Leaves are generally subentire. Flowers small, pale-yellowish-green. Drupe orange-red when ripe.

Fl. & Fr. : March November.

Chamba (BSD, DD), Kangra (DD), Mandi (LWG), Simla (DD),

Lower, outer Himalaya.

Trema cannabina Lour., Fl. Cochinch. 2 : 563. 1790 ; *Trema amb-oinensis* (Willd.) Blume, Mus. Bot. Lugd. Bat. 2 : 61. 1856 ; Hook. f. Fl. Brit. India 5 : 484. 1888.

Trees with villous or tomentose branchlets and pubescent, silky-to-mentose leaves. Cymes compact, large.

Fl. & Fr. : June September.

Kulu (BSIP).

Sikkim Himalaya and Himachal Pradesh.

Trema orientalis (L.) Blume in Mus. Bot. Lugd. Bat. 2 : 62. 1856 ; Parker, For. Fl. Punj. ed. 3. 466. 1956. *Celtis orientalis* L. Sp. Pl. 1044. 1753.

Small trees with pubescent branchlets. Leaves white or silky-tomentose beneath.

Fl. & Fr. : April July.

Kangra (Parker, 1956).

Himalaya, Himachal Pradesh to Bhutan.

Trema politoria (Planch.) Blume in Mus. Bot. Lugd. Bat. 2 : 58. 1856 ; Hook. f. Fl. Brit. India 5 : 484. 1888 ; Collett, Fl. Siml. 456. 1902 ; Parker, For. Fl. Punj. ed. 3. 466. 1956. *Sponia politoria* Planch. in Ann. Sci. Nat. Ser. 3. 10 : 326. 1848.

Small trees with roughly hairy branchlets. Flowers unisexual, in small axillary cymes, male and female on the same plant. Fruit a small, globose drupe.

Fl. & Fr. : August November.

Bilaspur (DD), Chamba (DD).

Subtropical Himalaya.

Ulmus brandisiana Melville & Heybroek in Kew Bull. 26 : 19. 1971. *U. chumlia* Melville & Heybroek x *U. wallichiana* Planch. *U. brandisiana* C. K. Schneid in Oest. Bot. Zeit. 66 : 30. 1916.

Himachal Pradesh Manali and Lahul and Spiti.

Ulmus chumlia Melville & Heybroek in Bull. 26 : 14. t. 4. 1971 ; Nair, Fl. Bash. Himal. 258. 1977.

Deciduous, small trees with densely, white to grey puberulent first, finally glabrous and yellowish - grey to pale yellowish brown. Flowers in fascicles. Samara orbicular, glabrous.

Fl. & Fr. : March - June.

Kulu (DD).

Western Himalaya and Nepal.

Ulmus villosa Brandis ex Gamble, *Man. Ind. Timbers* ed. 2 : 628. 1902 ; Melville & Heybroek in *Kew Bull.* 26 : 21. 1971 ; Nair, *Fl. Bash. Himal.* 258. 1977. *U. laevigata* Royle, *Ill. Bot. Himal. Mount.* 341. 1839 (nom. nud.) ; Parker, *For. Fl. Punj.* ed. 3. 462. 1956.

Trees with somewhat pendulous branches.

Fl. & Fr. : May - August.

Kinnaur (DD), Kulu.

North - Western Himalaya.

Ulmus wallichiana Planch. in *Ann. Sci. Nat. Ser.* 3. 10 : 277. 1848 ; Hook. f. *Fl. Brit. India* 5 : 480. 1888 ; Collett, *Fl. Siml.* 455. 1902 ; Parker, *For. Fl. Punj.* ed. 3. 462. 1956 ; Nair, *Fl. Bash. Himal.* 258. 1977.

Deciduous trees with pubescent or tomentose branches. Flowers red brown, clustered in short racemes. Fruit a winged nut or samara.

Fl. & Fr. : March - July.

Kinnaur (DD), Kulu (CDRI, DD).

Western Himalaya and Nepal.

Ulmus wallichiana Planch. ssp. *xanthoderma* Melville & Heybroek. in *Kew Bull.* 26 : 10. 1971.

Trees with branchlets at first with minute, glandular hairs, becoming smooth and orange brown to yellow brown. Samara orbicular to obovate, with scattered, minute, glandular hairs over the seed.

Fl. & Fr. : May - August.

Chamba (DD).

Western Himalaya.

CANNABACEAE

H. J. CHOWDHERY

Cannabis sativa L. Sp. Pl. 1027. 1753 ; Hook. f. Fl. Brit. India 5 : 487. 1888 ; Collett, Fl. Siml. 456. 1902 ; Parker, For. Fl. Punj. ed. 3. 483. 1956 ; Nair, Fl. Bash. Himal. 258. 1977.

Erect, branched, finely tomentose, aromatic herbs. Leaves palmate (5-7 foliate or partite), upper ones simple. Flowers pale-green, unisexual, male and female on separate plants. Fruit an achene, enclosed in a persistent perianth.

Fl. & Fr. : June - October.

Chamba (BSD, DD), Kangra (BSD, RRL), Kinnaur (BSD), Lahul and Spiti (BSD, DD, RRL), Simla (BSD, BSIP).

Throughout India.

MORACEAE

H. J. CHOWDHERY

Ficus auriculata Lour. Fl. Cochinch. 666. 1790 ; Nair, Fl. Bash. Himal. 258. 1977. *F. roxburghii* Wall. ex Miq. in Ann. Mus. Lugd. Bat. 3 : 296. 1867 ; Hook. f. Fl. Brit. India 5 : 534. 1888 ; Collett, Fl. Siml. 456. 1902.

Spreading, medium sized trees with pubescent young branches. Figs stalked, clustered on short, thick, leafless, branches, strongly ridged.

Fl. & Fr. : April - August.

Kinnaur (BSD), Mandi (LWG).

Outer Himalaya.

Ficus bengalensis L. Sp. Pl. 1059. 1753 ; Hook. f. Fl. Brit. India 5 : 499. 1888 ; Collett, Fl. Siml. 459. 1902 ; Parker, For. Fl. Punj. ed. 3. 475. 1956.

Large, spreading trees with numerous aerial roots and pubescent young parts. Leaves leathery, ovate, obtuse, entire. Figs pubescent, sessile, axillary.

Fl. & Fr. : February - June.

Kangra (RRL), Simla (DD).

Throughout India.

Ficus carica L. Sp. Pl. 1059. 1753 ; Parker, For. Fl. Punj. ed. 3. 481. 1956.

The cultivated fig, "*Anjir*".

Fl. & Fr. : March - August.

Chamba (BSIP), Kulu (BSD).

Ficus clavata Wall. ex Miq. in Lond. Jour. Bot. 7 : 431. 1848 ; Hook. f. Fl. Brit. India 5 : 520. 1888 ; Collett, Fl. Siml. 459. 1902 ; Parker, For. Fl. Punj. ed. 3. 477. 1956 ; Nair, Fl. Bash. Himal. 259. 1977.

Erect shrubs. Leaves with a narrow, long point. Figs axillary, shortly stalked.

Fl. & Fr. : June - September.

Chamba (DD), Kinnaur (DD).

Lower hills of Himalaya.

Ficus cunia Buch. Ham. ex Roxb. Hort. Beng. 66. 1814 ; Hook. f. Fl. Brit. India 5 : 523. 1888 ; Collett, Fl. Siml. 460. 1902 ; Parker, For. Fl. Punj. ed. 3. 478. 1956.

Small trees. Leaves rough. Figs globose, rough and wrinkled.

Fl. & Fr. : June - September.

Simla (DD).

Throughout India.

Ficus hederacea Roxb. Fl. Ind. ed. Carey, 2. 3 : 538. 1832 ; Nair, Fl. Bash. Himal. 259. 1977. *F. scandens* Roxb. Fl. Ind. ed. Carey, 2. 3 : 536. 1832 ; Hook. f. Fl. Brit. India 5 : 526. 1888 ; Parker, For. Fl. Punj. ed. 3. 478. 1956.

Scandent, climbing shrubs. Leaves hispid above. Figs in axillary pairs.

Fl. & Fr. : January May.

Chamba (DD), Kangra (DD), Kinnaur (BSD).

Tropical Himalaya.

Ficus heterophylla L. f. Suppl. Pl. 442. 1781 ; Hook. f. Fl. Brit. India 5 : 518. 1888.

Creeping, pubescent shrubs. Leaves membranous. Figs solitary, axillary.

Fl. & Fr. : June August.

Mandi (BSIP).

Throughout India.

Ficus hispida L. f. Suppl. Pl. 442. 1781 ; Hook. f. Fl. Brit. India 5 : 522. 1888 ; Parker, For. Fl. Punj. ed. 3. 478. 1956.

Shrubs or small trees with hollow twigs. Leaves with rounded, cuneate base, hispid beneath.

Fl. & Fr. : June August.

Kangra (DD).

Throughout India.

Ficus nerifolia J. E. Sm. var. **nemoralis** (Wall. ex Miq.) Corner in Gard. Bull. Singap. 17 : 426. 1960 ; Nair, Fl. Bash. Himal. 259. 1977. *Ficus nemoralis* Wall. ex Miq. in Hook. f. Jour. Bot. 7 : 453. 1848 ; Hook. f. Fl. Brit. India 5 : 534. 1881 ; Collett, Fl. Siml. 461. 1902 ; Parker, For. Fl. Punj. ed. 3. 480. 1956.

Small, glabrous trees or shrubs. Leaves with wedge shaped base, tip narrowed into a long point. Figs axillary, glabrous.

Fl. & Fr. : May October.

Kinnaur (BSD, DD), Simla (DD), Solan (DD).

Himalaya.

Ficus palmata Forssk. Fl. Aeg. Arab. 179. 1775 ; Hook. f. Fl. Brit. India 5 : 530. 1888 ; Collett, Fl. Siml. 460. 1902 ; Parker, For. Fl. Punj. ed. 3. 479. 1956 ; Nair, Fl. Bash. Himal. 259. 1977.

Shrubs or small trees. Leaves thick, pubescent beneath. Figs axillary, tomentose.

Fl. & Fr. : May September.

Chamba (BSD, CDRI, DD), Kangra (BSD, RRL), Kinnaur (BSD, DD), Kulu (BSD, DD, LWG), Mandi (BSD), Simla (DD).

North Western India.

Ficus pumila L. Sp. Pl. 1060. 1753 ; Parker, For. Fl. Punj. ed. 3. 481. 1956.

Climbing shrubs with very dimorphous foliage. Figs pyriform.

Fl. & Fr. : June October.

Chamba (LWG), Simla (LWG).

North - Western India.

Ficus religiosa L. Sp. Pl. 1059. 1753 ; Hook. f. Fl. Brit. India 5 : 513. 1888 ; Collett, Fl. Siml. 459. 1902 ; Parker, For. Fl. Punj. ed. 3. 476. 1956.

Large trees. Leaves long petioled, tip narrowed into a linear, tail-like point, young foliage pinkish. Figs axillary, slightly vertically flattened.

Fl. & Fr. : March June.

Simla (DD).

Throughout India.

Ficus rumphii Blume, Bijdr. 437. 1825 ; Hook. f. Fl. Brit. India 5 : 512. 1888 ; Collett, Fl. Siml. 459. 1902 ; Parker, For. Fl. Punj. ed. 3. 476. 1956.

Large, glabrous trees. Leaves long petioled, subcoriaceous, leathery, tip narrowed into a tail like point. Figs axillary.

Fl. & Fr. : April July.

Kangra (DD).

Throughout India.

Ficus sarmentosa Buch. Ham. ex J. E. Sm. in Rees. Cyclop. 14 : Ficus n. 45. 1810 ; Nair, Fl. Bash. Himal. 260. 1977. *F. foveolata* Wall. ex Miq. Ann. Mus. Bot. Lugd. Bat. 3 : 294. 1867 ; Hook. f. Fl. Brit. India 5 : 528. 1888 ; Collett, Fl. Siml. 460. 1902 ; Parker For. Fl. Punj. ed. 3. 479. 1956.

Pubescent, climbing or creeping shrubs without adventitious roots. Figs axillary, solitary, warty and wrinkled.

Fl. & Fr. : May October.

Chamba (BSD, DD), Kangra (RRL), Kinnaur (BSD, DD), Kulu (LWG), Simla (DD).

Outer Himalaya.

Ficus virens Dryand. in Ait. Hort. Kew 3 : 451. 1789. *F. infectoria* Roxb. var. *lambertiana* (Miq.) Hook. f. Fl. Brit. India 5 : 516. 1888 ; Parker, For. Fl. Punj. ed. 3. 477. 1956.

Deciduous, small trees. Leaves coriaceous. Figs stalked.

Fl. & Fr. : March August.

Kangra (BSD).

Throughout India.

Ficus virens Dryand. var. *sublanceolata* (Miq.) Corner in Gard. Bull. Singapore 17 : 377. 1960 ; Nair, Fl. Bash. Himal. 260. 1977. *F. saxophila* Bl. var. *sublanceolata* Miq. Ann. Mus. Bot. Lugd. Bat. 3 : 260. 1867.

Small trees. Figs sessile.

Fl. & Fr. : June September.

Kinnaur (DD).

Throughout India.

Morus alba L. Sp. Pl. 986. 1753 ; Hook. f. Fl. Brit. India 5 : 492. 1888 ; Collett, Fl. Siml. 457. 1902 ; Parker, For. Fl. Punj. ed. 3. 472. 1756.

Medium sized trees. Male and female flowers on the same tree. Fruits black when ripe.

Fl. & Fr. : March May.

Kangra (RRL).

Throughout Northern India.

Morus australis Poir. in Lam. Encycl. Meth. Bot. 4 : 380. 1797.
Morus indica L. Sp. Pl. 986. 1763 ; Hook. f. Fl. Brit. India 5 : 492. 1888 ;
Collett, Fl. Siml. 457. 1902.

Shrubs or small trees. Fruit black when ripe. (Cultivated for silkworms).

Fl. & Fr. : February April.

Simla (DD).

Temperate and subtropical Himalaya and various parts of India.

Morus macroura Miq. Pl. Jungh. 42. 1851. *Morus laevigata* Wall. ex Brandis, For. Fl. 409. 1875 ; Hook. f. Fl. Brit. India 5 : 492. 1888 ; Parker, For. Fl. Punj. ed. 3. 473. 1956.

Medium sized, softly hairy trees. Fruits long, cylindric yellowish white, sweet.

Fl. & Fr. : March May.

Simla (BSIP).

Tropical and subtropical Himalaya.

Morus serrata Roxb. Fl. Ind. 3 : 596. 1832 ; Hook. f. Fl. Brit. India 5 : 492. 1888 ; Collett, Fl. Siml. 457. 1902 ; Parker, For. Fl. Punj. ed. 3. 472. 1956 ; Nair, Fl. Bash. Himal. 260. 1977.

Trees. Male and female flowers generally on different plants. Fruits purple.

Fl. & Fr. : April - June.

Chamba (BSD, CDRI, DD), Kinnaur (BSD, DD), Kulu (DD), Simla (DD).

Temperate Himalaya.

PLATANACEAE

H. J. CHOWDHERY AND B. M. WADHWA

Platanus orientalis L. Sp. Pl. 999. 1753 ; Hook. f. Fl. Brit. India 5 : 594. 1888 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 345. 1972.

Lofty trees. Leaves 5-22 cm in diameter, broader than long, with cuneate base.

Chamba (BSD, DD), Kangra (BSD), Kulu (DD), Simla (DD).

North Western Himalaya. Commonly planted.

JUGLANDACEAE

H. J. CHOWDHERY

Engelhardia spicata Leshen. ex Blume, Bijdr. 528. 1826 ; Hook. f. Fl. Brit. India 5 : 595. 1888. *E. roxburghiana* Lindl. ex Wall. Pl. Asiat. Rar. 2 : 85. t. 199. f. 7. (fruit only) 1831 (*p. p.*). var. **spicata**.

Large, subdeciduous tree. Spikes slender, pendulous, flexuous, hispidly pubescent. Nut globose, villously hispid.

Fl. & Fr. : April - July.

Chamba (DD), Kinnaur (DD).

Subtropical Himalaya.

Engelhardia spicata Lechen. ex Blume var. **colebrookeana** (Lindl. ex Wall.) Koord. & Valet. Bijdr. 5 (Meded. Lands Plantent 33) : 169. 1900 ; Murata in Acta Phyt. Geobot. 27 : 33. 1975. *E. colebrookeana* Lindl. ex Wall. in Pl. Asiat. Rar. 3 : 4. t. 208. 1832 excl. descr. "glabris" ; Hook. f. Fl. Brit. India 5 : 596. 1888 ; Parker, For. Fl. Punj. ed. 3. 486. 1956.

Small, deciduous trees. Male and female flowers on separate spikes. Fruit globose, coriaceous, one seeded nut.

Fl. & Fr. : March June.

Chamba (DD), Kinnaur (DD).

Western Himalaya upto Sikkim and Assam.

Juglans regia L. Sp. Pl. 997. 1753 ; Hook. f. Fl. Brit. India 5 : 595. 1888 ; Collett, Fl. Siml. 469. 1902 ; Parker, For. Fl. Punj. ed. 3. 485. 1956 ; Nair, Fl. Bash. Himal. 264. 1977.

Deciduous trees. Leaves imparipinnate, aromatic. Female flowers in terminal spikes. Fruits large with fleshy pericarps.

Fl. & Fr. : April August.

Chamba (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, RRL), Mandi (LWG), Simla (BSIP).

Temperate Himalaya and Western Tibet.

MYRICACEAE

H. J. CHOWDHERY

Myrica esculenta Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 56. 1825 ; Nair, Fl. Bash. Himal. 264. 1977. *Myricaria nagi* Hook. f. Fl. Brit. India 5 : 597. 1888 (non Thunb.) ; Collett, Fl. Siml. 470. 1902 ; Parker, For. Fl. Punj. ed. 3. 487. 1956.

Small trees. Leaves crowded towards the end of the branches, aromatic, lower surface pale to rust coloured. Flowers minute, unisexual.

Fl. & Fr. : August - December.

Chamba (DD), Mandi (LWG), Simla (DD, LWG).

Subtropical Himalaya.

BETULACEAE

H. J. CHOWDHERY

Alnus nepalensis D. Don, Prodr. Fl. Nep. 58. 1825 ; Hook. f. Fl. Brit. India 5 : 600 1888 ; Collett, Fl. Siml. 473. 1902 ; Parker, For. Fl. Punj. ed. 3. 491. 1956 ; Nair, Fl. Bash. Himal. 264. 1977.

Deciduous trees. Wings of nutlet thin, membranous.

Fl. & Fr. : May - December.

Chamba (DD), Kinnaur (DD), Kulu (DD, LWG), Mandi (LWG).

Temperate Himalaya.

Alnus nitida (Spach) Endl. Gen. Pl. Suppl. 4 : 20. 1847 ; Hook. f. Fl. Brit. India 5 : 600. 1888 ; Collett, Fl. Siml. 473. 1902 ; Parker, For. Fl. Punj. ed. 3. 489. 1956 ; Nair, Fl. Bash. Himal. 265. 1977. *Clethropsis nitida* Spach in Ann. Sci. Nat. Ser. 2. 15 : 202. 1841.

Large trees. Flowers monoecious. Nut with a narrow coriaceous margin.

Fl. & Fr. : August - October.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (BSD, BSIP, DD), Simla (BSD).

Western temperate Himalaya.

Betula alnoides Buch Ham. ex D. Don, Prodr. Fl. Nep. 58. 1825 ; Hook. f. Fl. Brit. India 5 : 599. 1888 ; Collett, Fl. Siml. 472. 1902 ; Parker, For. Fl. Punj. ed. 3. 491. 1956 ; Nair, Fl. Bash. Himal. 265. 1977.

Deciduous trees. Bark greyish - brown. Female spikes in clusters. Fruiting bracts unequally 3 lobed.

Fl. : & *Fr.* : April - September.

Kinnaur (DD).

Temperate and subtropical Himalaya.

Betula pendula Roth, Tent. Fl. Germ. 1 : 405. 1788. *B. verrucosa* Ehrh. Beitr. Naturk. 6 : 98. 1791.

Small, deciduous trees.

Fl. & Fr. : May - August.

Simla (DD).

Himalaya.

Betula utilis D. Don, Prodr. Fl. Nep. 58. 1825 ; Hook. f. Fl. Brit. India 5 : 599. 1888 ; Collett, Fl. Siml. 472. 1902 ; Parker, For. Fl. Punj. ed. 3. 491. 1956. *B. Jacquemontii* Spach in Ann. Sci. Nat. Bot. Ser. 2 : 15. 1841 ; Nair, Fl. Bash. Himal. 265. 1977.

Small, deciduous trees. Bark white. Female spikes solitary. Fruiting bracts equally 3 lobed.

Fl. & Fr. : May September.

Chamba (DD), Kinnaur, (BSD, DD), Kulu (DD), Lahul & Spiti (BSD, DD, RRL), Simla (DD).

Temperate Himalaya.

Carpinus faginea Lindl. in Wall. Pl. As. Rar. 2 : 5. 1831 ; Hook. f. Fl. Brit. India 5 : 626. 1888 ; Collett, Fl. Siml. 477. 1902 ; Nair, Fl. Bash. Himal. 365. 1977.

Moderate sized tree with shoots and petiole tomentose. Leaves falcate with pubescent petiole.

Fl. & Fr. : April July.

Kinnaur (DD).

Temperate Himalaya

Carpinus viminea Lindl. in Wall. Pl. As. Rar. 2 : 4. t. 106. 1831 ; Hook. f. Fl. Brit. India 5 : 626. 1888 ; Collett, Fl. Siml. 476. 1902 ; Parker, For. Fl. Punj. ed. 3. 492. 1956 ; Nair, Fl. Bash. Himal. 266. 1977.

Small tree with glabrous, pendulous drooping branches. Leaves with a long tail like tip.

Fl. & Fr. : April August.

Chamba (DD), Kinnaur (DD, LWG), Simla (DD).

Temperate Himalaya.

Corylus jacquemontii Decne. in Jacquem. Voy. Bot. 4 : 160. t. 160. 1836. *Corylus colurna* Hook. f. Fl. Brit. India 5 : 625. 1888. (non. L.) ; Collett, Fl. Siml. 476. 1902 ; Parker, For. Fl. Punj. ed. 3. 493. 1956 ; Nair, Fl. Bash. Himal. 266. 1977.

Shrubs. Leaves membranous, irregularly lobed and toothed, long-pointed. Nuts large, enclosed in a sheathing bracteole.

Fl. & Fr. : April August.

Chamba (BSD, DD), Kinnaur (DD), Kulu (DD), Simla (DD).

Western temperate Himalaya and Nepal.

FAGACEAE

H. J. CHOWDHERY

Castanea sativa Mill. Gard. Dict. ed. 3. 1. 1768 ; Parker, For. Fl. Punj. ed. 3. 498. 1956 ; Nair, Fl. Bash. Himal. 266. 1977.

Cultivated for edible fruits. Fruits contain 3 chestnuts and are covered by densely spiny involucre.

Fl. & Fr. : May - October.

Kinnaur (BSD, DD), Kulu (BSD, DD, RRL, LWG).

North Western Himalaya.

Fagus sylvatica L. Sp. Pl. 998. 1753 ; Parker, For. Fl. Punj. ed. 3. 497. 1956.

Fl. & Fr. : May - July.

Kulu (BSD, CDRI, DD), Simla (DD).

Cultivated.

Quercus dilatata Lindl. ex Royle, Ill. Bot. Himal. Mount. 356. 1839 ; Hook. f. Fl. Brit. India 5 : 602. 1888 ; Collett, Fl. Siml. 474. 1902 ; Parker, For. Fl. Punj. ed. 3. 496. 1956 ; Nair, Fl. Bash. Himal. 266. 1977.

Large trees. Leaves usually entire, glabrous on both sides. Acorns half immersed in the hard cup, scales imbricate.

Fl. & Fr. : April - October.

Chamba (BSD, DD, LWG), Kinnaur (DD), Kulu (BSD, DD), Simla (DD), Mandi (LWG).

Western temperate Himalaya.

Quercus ilex L. Sp. Pl. 995. 1753 ; Hook. f. Fl. Brit. India 5 : 602. 1888 ; Parker, For. Fl. Punj. ed. 3. 496. 1956 ; Nair, Fl. Bash. Himal. 267. 1977.

Small trees, young shoots grey with stellate pubescence. Acorns 2-3, on a common peduncle, one third or one quarter sunk in a thick woody cup.

Fl. & Fr. : May October.

Kinnaur (BSD, DD), Simla (DD).

Western temperate Himalaya.

Quercus glauca Thunb. Fl. Jap. 175. 1784 ; Hook. f. Fl. Brit. India 5 : 604. 1888 ; Collett, Fl. Siml. 475. 1902 ; Nair, Fl. Bash. Himal. 267. 1977.

Small or medium sized trees with smooth, grey bark. Leaves coriaceous, silky pubescent beneath. Cups with tomentose scales arranged in few annular belts.

Fl. & Fr. : March July.

Chamba (DD), Kangra (BSIP, DD), Kulu (RRL), Mandi (BSD), Simla (DD).

Subtropical Himalaya.

Quercus leucotrichophora A. Camus in Riviera Sci. 22 : 66. 1935. *Quercus incana* Roxb. Fl. Ind. 3 : 642. 1832 ; Hook. f. Fl. Brit. India 5 : 603. 1888 ; Collett, Fl. Siml. 474. 1902 ; Parker, For. Fl. Punj. ed. 3. 494. 1956 ; Nair, Fl. Bash. Himal. 267. 1977.

Trees with dark grey bark and tomentose young shoots. Leaves coriaceous, densely white tomentose beneath. Scales of acorn imbricate.

Fl. & Fr. : April October.

Chamba (DD, LWG), Kangra (DD, RRL), Kinnaur (BSD, DD), Mandi (DD), Simla (BSIP, DD).

Temperate Himalaya.

Quercus prinus L. Sp. Pl. 995. 1753.

Trees.

Fl. & Fr. : May August.

Simla (DD, LWG).

Temperate Himalaya.

Quercus robur L. Sp. Pl. 996. 1753.

Trees.

Fl. & Fr. : April September.

Kulu (BSD, DD).

Himalaya.

Quercus rubra L. Sp. Pl. 996. 1756.

Trees.

Fl. & Fr. : May July.

Kulu (DD).

Temperate Himalaya.

Quercus semecarpifolia Sm. in Rees. Cyclop. 29. 20. 1814 ; Hook. f. Fl. Brit. India 5 : 601. 1888 ; Collett, Fl. Siml. 474. 1902 ; Parker, For. Fl. Punj. ed. 3. 495. 1956 ; Nair, Fl. Bash. Himal. 267. 1902.

Large trees with tomentose young shoots. Leaves rusty brown, tomentose beneath.

Fl. & Fr. : May August.

Chamba (BSD, DD), Kangra (BSD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (RRL), Simla (DD, LWG).

Temperate Himalaya.

Quercus undulata Torr. in Ann. Lyc. N. York. 2 : 248. t. 4. 1828.

Trees.

Fl. & Fr. : April July.

Kulu (RRL).

Himalaya.

SALICACEAE

H. J. CROWDHERY

Populus alba L. Sp. Pl. 1034. 1753 ; Hook. f. Fl. Brit. India 5 : 638. 1888 ; Parker, For. Fl. Punj. ed. 3. 509. 1956.

Trees with white, cottony tomentum. Catkins hairy.

Fl. & Fr. : April June.

Chamba (DD), Kinnaur (DD).

North Western Himalaya.

Populus ciliata Wall. ex Royle, Ill. Bot. Himal. Mount. 346. t. 98. f. 1. 1839 ; Hook. f. Fl. Brit. India 5 : 638. 1888 ; Collett, Fl. Siml. 481. 1902 ; Parker, For. Fl. Punj. ed. 3. 509. 1956.

Tree with viscidly resinous leaf buds. Leaves cordate, minutely pubescent along the edges. Flowers in drooping raceme like catkins. Seeds enveloped in long silky hairs.

Fl. & Fr. : April July.

Chamba (BSD, DD, LWG), Kinnaur (BSD, DD), Kulu (CDRI, DD, LWG), Lahul and Spiti (BSD, DD), Simla (BSIP, DD, LWG), Solan (BSIP).

Temperate Himalaya.

Populus nigra L. var. *italica* (Munchn) Koechne, Deutsche Dendr. 81. 1893.

Large trees forming a narrow cylindric crown.

Fl. & Fr. : April July.

Chamba (DD), Simla (LWG), Sirmur (DD).

Cultivated.

Populus pamirica Komar. in Journ. Bot. URSS. 19 : 510. 1934. *P. balsamifera* Hook. f. Fl. Brit. India 5 : 638. 1888 (non L.) ; Parker, For. Fl. Punj. ed. 3. 510. 1956.

Large trees with long, flexuose, yellowish brown or grey branches, strongly balsamic. Leaves coriaceous, pale. Catkins drooping, male sessile, female peduncled.

Fl. & Fr. : March July.

Kinnaur (DD), Lahul and Spiti (DD).

North Western Himalaya.

Salix acmophylla Boiss. Diag. Pl. Or. Ser. 1. 7 : 98. 1846 ; Hook. f. Fl. Brit. India 5 : 628. 1888 ; Parker, For. Fl. Punj. ed. 3. 501. 1956 ; Nair, Fl. Bash. Himal 268. 1977.

Small tree with rough bark, hairy young branches and leaves.

Fl. & Fr. : February July.

Chamba (DD), Hamirpur (DD), Lahul & Spiti (DD).

North Western India.

Salix alba L. Sp. Pl. 1021. 1753 ; Hook. f. Fl. Brit. India 5 : 629. 1888 ; Collett, Fl. Siml. 478. 1902 ; Parker, For. Fl. Punj. ed. 3. 507. 1956.

Large trees with olive green, yellow purple branches. Leaves narrowly lanceolate, silky on the lower side.

Fl. & Fr. : May July.

Kulu (CDRI), Lahul and Spiti (DD), Simla (BSIP, CDRI, DD), Solan (BSIP).

North Western Himalaya.

Salix acutifolia Willd. Sp. Pl. 4. 2 : 668. 1805. *Salix daphnoides* (non Villars) Hist. Pl. Dauph. 3 : 765. 1719 ; Hook. f. Fl. Brit. India 5 : 631. 1888 ; Collett, Fl. Siml. 480. 1902 ; Parker, For. Fl. Punj. ed. 3. 503. 1956.

Tree with young shoot pubescent and yellowish or reddish branches.

Fl. & Fr. : April June.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul & Spiti (DD).

Temperate Himalaya.

Salix babylonica L. Sp. Pl. 1017. 1753 ; Hook. f. Fl. Brit. India 5 : 629. 1888 ; Collett, Fl. Siml. 479. 1902 ; Parker, For. Fl. Punj. ed. 3. 507. 1956 ; Nair, Fl. Bash. Himal. 268. 1977.

Tree with drooping branches. Leaves narrowly lanceolate, finely toothed, glabrous.

Fl. & Fr. : February May.

Chamba (BSIP), Simla (DD).

Cultivated (weeping willows).

Salix denticulata Anderss. in Svensk. Vet. Akad. Handl. 1850 : 481. 1851 ; Parker, For. Fl. Punj. ed. 3. 503. 1956. *Salix elegans* Wall. ex Anderss. in J. Linn. Soc. Bot. 4 : 51. 1860 ; Hook. f. Fl. Brit. India 5 : 630. 1888 ; Collett, Fl. Siml. 479. 1902 ; Nair, Fl. Bash. Himal. 269. 1977.

Shrub or small trees with pubescent young branches. Leaves ovate oblong, lower surface is covered with pale or white bloom.

Fl. & Fr. : April July.

Chamba (BSD, DD), Kangra (BSD), Kinnaur (BSD, DD), Lahul and Spiti (BSD, DD, RRL).

Western Himalaya.

Salix divergens Anderss. in DC. Prodr. 16 (2) : 316. 1868 ; Hook. f. Fl. Brit. India 5 : 637. 1888. *Salix myricaefolia* Anders. in Act. Holm. 1850 ; Parker, For. Fl. Punj. ed. 3. 507. 1956.

Shrubs with widely divaricate, stout branches.

Fl. & Fr. : April July.

Lahul and Spiti (BSD, DD).

North Western Himalaya.

Salix flabellaris Anderss. in Act. Holm. 497. 1850 ; Hook. f. Fl. Brit. India 5 : 634. 1888 ; Parker, For. Fl. Punj. ed. 3. 305. 1956 ; Nair, Fl. Bash. Himal. 269. 1977.

Procumbent shrubs. Leaves obovate or orbicular. Rachis of the catkins hairy.

Fl. & Fr. : April September.

Chamba (BSD, DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD).

Western Himalaya.

Salix fragilis L. Sp. Pl. 1017. 1753 ; Hook, f. Fl. Brit. India 5 : 630. 1888 ; Parker, For. Fl. Punj. ed. 3. 507. 1956.

Tree with glabrous, fragile branches. Leaves glandular serrate, silky.

Fl. & Fr. : April July.

Chamba (DD), Lahul and Spiti (DD).

Cultivated in Himachal Pradesh and Western Tibet.

Salix fruticulosa Anderss. in Journ. Linn. Soc. Bot. 4 : 53. 1860 ; Hook. f. Fl. Brit. India 5 : 637. 1888 ; Parker, For. Fl. Punj. ed. 3. 507. 1956 ; Nair, Fl. Bash. Himal. 269. 1977.

Ascending, dwarf shrubs. Leaves lanceolate or oblanceolate. Rachis of catkins hairy.

Fl. & Fr. : April July.

Kulu (RRL), Kinnaur (DD), Lahul and Spiti (DD, RRL).

Western Himalaya.

Salix furcata Anderss. in DC. Prodr. 16. 2 : 291. 1868 ; Parker, For. Fl. Punj. ed. 3. 504. 1956.

Dwarf shrubs. Male and female catkins with densely hairy rachis.

Fl. & Fr. : April July.

Kinnaur (BSD).

Alpine Himalaya.

Salix karelinii Tutcz' ex Stschegleew in Bull. Soc. Nat. Moscou 27 (1) : 196. 1854. *Salix hastata* (non L.) Hook. f. Fl. Brit. India 5 : 630. 1888 ; Collett, Fl. Siml. 480. 1902 ; Parker, For. Fl. Punj. ed. 3. 502. 1956 ; Nair, Fl. Bash. Himal. 269. 1977.

Shrub with silky young shoots and leaves. Catkins densely silky.

Fl. & Fr. : June September.

Chamba (DD), Kinnaur (DD), Lahul and Spiti (DD), Simla (DD).

North Western Himalaya.

Salix lindleyana Wall. ex Anderss. in Svensk. Vet. Akad. Handl. 1850 : 409. 1851 ; Hook. f. Fl. Brit. India 5 : 634. 1888 ; Parker, For. Fl. Punj. ed. 3. 595. 1956 ; Nair, Fl. Bash. Himal. 269. 1956.

Prostrate, creeping shrubs. Leaves oblong - lanceolate, glabrous.

Fl. & Fr. : May July.

Kulu (DD), Lahul and Spiti (BSD, DD), Simla (BSD).

Alpine Himalaya,

Salix obscura Anderss. in DC. Prodr. 16 (2) : 269. 1868 ; Hook. f. Fl. Brit. India 5 : 632. 1888.

Diffuse shrub with tomentose shoots and black bark. Young leaves villous. Female catkins sessile.

Fl. & Fr. : April July.

Lahul and Spiti (DD).

Himalaya.

Salix oxycarpa Anderss. in Journ. Linn. Soc. Bot. 4 : 45. 1860 ; Hook. f. Fl. Brit. India 5 : 636. 1888 ; Collett, Fl. Siml. 480. 1902 ; Parker, For. Fl. Punj. ed. 3. 505. 1956 ; Nair, Fl. Bash. Himal. 270. 1977.

Shrub or small tree with pubescent, young shoots. Leaves laceolate, entire or subserrate, lower surface covered with pale or white bloom. Male catkins erect, densely hairy, female drooping.

Fl. & Fr. : April July.

Chamba (DD), Kinnaur (BSD, DD), Kulu (DD), Lahul and Spiti (BSD, DD),

Western Himalaya.

Salix oxycarpa Anderss. var. *serrata* Anderss. in Journ. Linn. Soc. Bot. 4 : 45. 1860 ; Hook. f. Fl. Brit. India 5 : 636. 1888.

Shrub or small trees. Leaves lanceolate, acutely glandular serrate, midrib and nerves yellowish. Catkins sessile, lax.

Fl. & Fr. : April July.

Kinnaur (DD), Simla (DD).

North - Western Himalaya.

Salix pycnostachya Anderss. in Journ. Linn. Soc. Bot. 4 : 44. 1860 ; Hook. f. Fl. Brit. India 5 : 636. 1888 ; Parker, For. Fl. Punj. ed. 3. 506. 1956.

Shrub or small trees with violet brown or blackish branches. Catkins nodding.

Fl. & Fr. : April July.

Lahul and Spiti (BSD, DD).

Western Himalaya.

Salix sericocarpa Anderss. in Journ. Linn. Soc. Bot. 4 : 43. 1860 ; Hook. f. Fl. Brit. India 5 : 537. 1888 ; Parker, For. Fl. Punj. ed. 3. 567. 1956.

Trees. Carpels densely silky.

Fl. & Fr. : April July.

Chamba (DD).

North - Western Himalaya.

Salix tetrasperma Roxb. Pl. Cor. 1 : 66. t. 97. 1795 ; Hook. f. Fl. Brit. India 5 : 626. 1888 ; Collett, Fl. Siml. 478. 1902 ; Parker, For. Fl. Punj. ed. 3. 500. 1956 ; Nair, Fl. Bash. Himal. 270. 1977.

Small trees with young silky branches. Leaves lanceolate, pale beneath. Male catkins sweet scented.

Fl. & Fr. : April July.

Lahul and Spiti (DD), Simla (BSIP), Solan (BSIP).

Throughout tropical and subtropical India.

Salix wallichiana Anderss. in Svensk. Vet. Akad. Handl. 18 50 : 447. 1851 ; Hook. f. Fl. Brit. India 5 : 628. 1888 ; Collett, Fl. Siml. 478. 1902 ; Parker, For. Fl. Punj. ed. 3. 501. 1956 ; Nair, Fl. Bash. Himal. 270. 1977.

Shrub or small trees with tomentose young branches. Leaves ovate lanceolate, lower surface covered with white, silky pubescence. Male catkins densely silky, erect, females drooping.

Fl. & Fr. : March - July.

Chamba (DD), Kangra (RRL), Kinnaur (DD), Kulu (DD), Lahul and Spiti (RRL), Simla (DD).

Temperate Himalaya.

Salix wallichiana Anderss. var. **sericea** Anderss. in Vet. Akad. Handl. n.s. 5 : 81. 1865 ; Hook. f. Fl. Brit. India 5 : 629. 1888.

Shrubs or small trees. Leaves silky on both the sides.

Fl. & Fr. : April - July.

Chamba (DD).

North Western Himalaya.