

FLORA OF HIMACHAL PRADESH

ANALYSIS

H. J. CHOWDHURY

AND

B. M. WADHWA

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

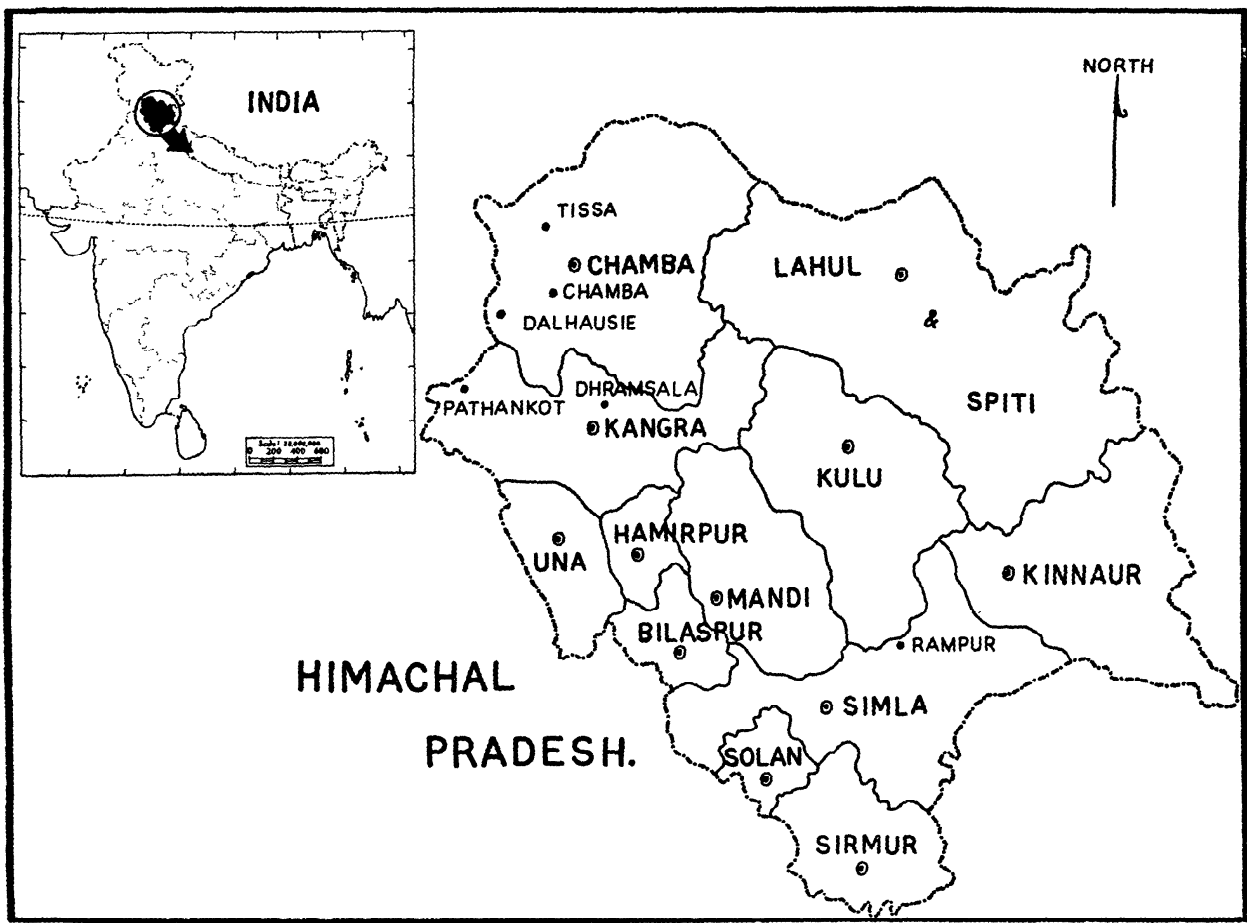
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RUBIACEAE

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 serpyllyoides 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, RRL).

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 greensish - 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. CHOWDHERY

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, Ilus. 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 cuneifolia 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 ann 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.

Arctium 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 (ESIP, 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. Petersburg. 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 Linnaea 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, involucre 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 involucratum DC. Prodr. 6 : 639. 1838. *Cnicus involucratum* (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 spatulate. 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. Antarct. 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, involucre 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) Babc. Univ. Cal. Publ. 19 : 401. 1941.

Pubescent herbs.

Fl. & Fr. : June July.

Lahul and Spiti (DD).

Himalaya.

Crepis multicaulis Ledeb. ssp. **genuina** (Regel) Babc. Univ. Cal. Publ. 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 spathulate. 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.

El. & 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.