

**FLORA  
OF  
HIMACHAL PRADESH**

**Volume 1**

**H. J. CHOWDHERY  
&  
B. M. WADHWA**

**BOTANICAL SURVEY OF INDIA**

**FLORA OF  
HIMACHAL PRADESH  
Analysis**

**H. J. Chowdhery  
&  
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**Analysis**

# **FLORA OF INDIA**

**Series 2**

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**Analysis**

**Volume 1**

**H. J. Chowdhery & B. M. Wadhwa**



सत्यमेव जयते

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## FOREWORD

The Botanical Survey of India is presently engaged in the preparation of the Flora of India which is regularly appearing under various series like the '*Fascicles of Flora of India*' dealing with the revisionary studies of the families of flowering plants on all India basis, district floras and certain regional floras. It has also undertaken the task to prepare '*State Flora Analysis*', which deals with the annotated enumerations of the flowering plants of certain selected States which have either, so far remained unexplored or have rich or otherwise interesting flora.

The '*State Flora Analysis of Himachal Pradesh*' is one such work. The work covers a large portion of North-western and Western Himalayas having a variety of climatic conditions ranging from tropical, sub-tropical, and temperate to alpine.

The study of the flora of this region presents many interesting aspects related to phyto-geography. The occurrence of close relatives of some plants of this area in parts of the Pamir, Europe and certain other regions of the world makes analysis of flora fascinating. In spite of these features, we did not have any complete account of the flora or even an exhaustive enumeration of plants for this State so far.

The present work is an outcome of a comprehensive survey of the flora of Himachal Pradesh by botanists of the Botanical Survey of India, and on evaluation of previous collections by a number of eminent plant explorers. Since no concise account of the plants of this whole region is available, this work should prove as a handy reference manual for understanding the diversity in plant wealth of this region.

The work will also be a useful precursor to the preparation of a more detailed and elaborate flora of this region.

Botanical Survey of India  
Botanic Garden  
Howrah-711103

S. K. Jain  
DIRECTOR

## PREFACE

In the late nineteen seventies it was felt that the vast collections made from Himachal Pradesh by various plant explorers since 1821 and the botanists of the Botanical Survey of India, Northern Circle, Dehra Dun, should be identified critically and published in the form of a state flora analysis as there was no complete account of the plants of this region.

The present book is an outcome of a critical study of the plants deposited in the Northern Circle of the Botanical Survey of India (BSD), Central National Herbarium (CAL) and other herbaria like National Botanical Research Institute, Lucknow (LWG), Central Drug Research Institute, Lucknow (CDRI), Birbal Sahni Institute of Paleobotany, Lucknow (BSIP), Forest Research Institute, Dehra Dun (DD) and Regional Research Laboratory, Jammu, (RRL).

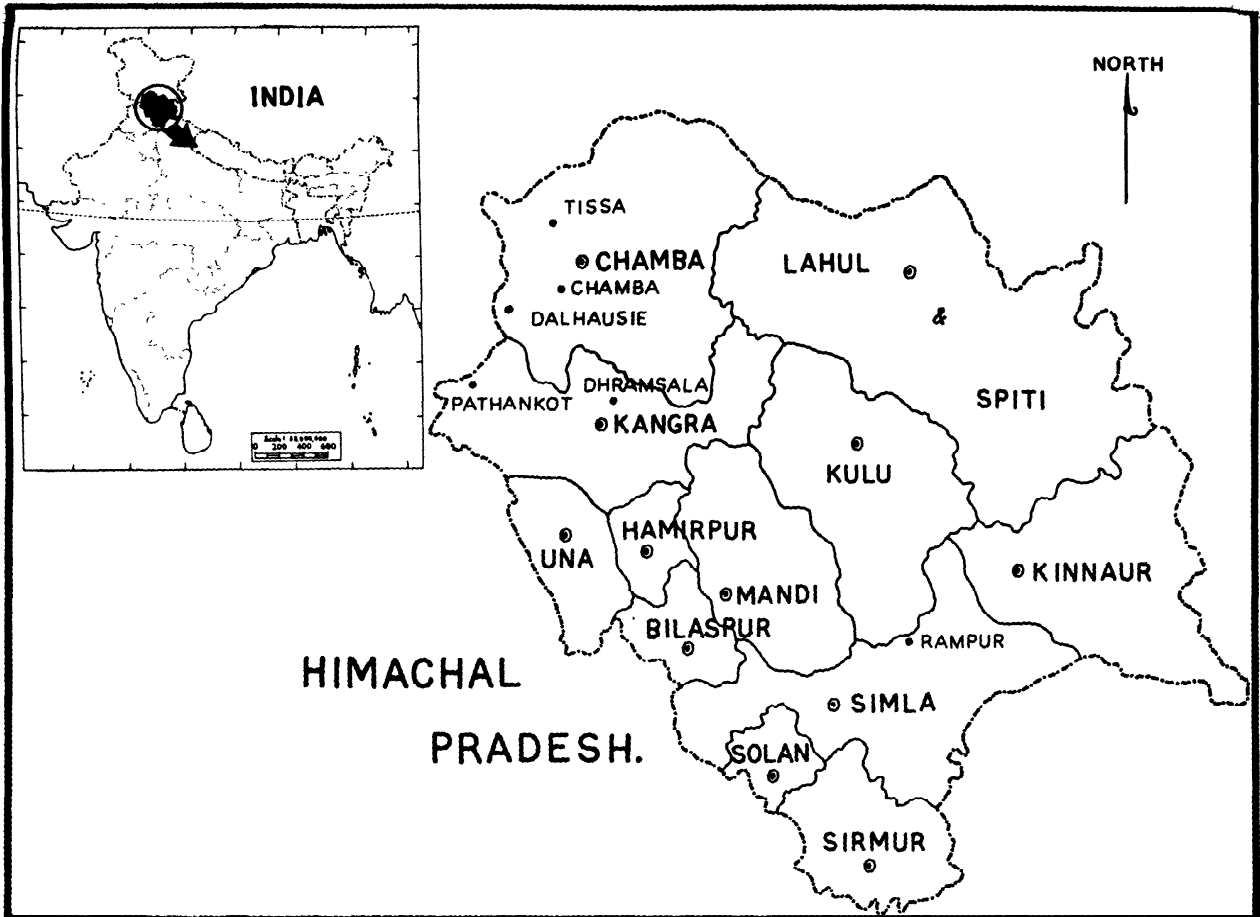
Every attempt has been made to check the correct identity and nomenclature of the plants. It is proposed to bring out the analysis of state flora of Himachal Pradesh in three (3) volumes. In the present volume 1202 species of flowering plants belonging to 85 families have been enumerated (Ranunculaceae to Caprifoliaceae).

It is hoped that the flora will be helpful to the botanists, foresters and to all others interested in plant exploration and research as a reference in several of their research and management programmes in the area and also in the preparation of the District Floras and revisionary works.

We are indebted to Dr. S.K. Jain, F.N.A., Director, Botanical Survey of India for his keen interest in the publication of the present work and constant encouragement throughout the project. We are also indebted to Dr. U.C. Bhattacharyya, Deputy Director, Botanical Survey of India, Northern Circle, Dehra Dun for his constant guidance and suggestions and every possible help in the completion of this book as without his massive contribution to the recent plant collections from Himachal Pradesh it would have been an up-hill task for us. Our appreciation and gratitude goes to Dr. P.K. Hajra for his help and co-operation which was available to us throughout the tenure of this work.

It is our pleasant duty to acknowledge the co-operation received from the Officer-in-charge of the afore mentioned herbaria. We are also thankful to all the officers and staff of the Botanical Survey of India, Northern Circle, Dehra Dun of whom particular mention can be made of Sri S.K. Murthy, M.V. Vishwanathan, B.P. Uniyal, Pritam Lal, R. Prasad and J.P. Sharma.

H.J. CHOWDHERY  
and  
B.M. WADHWA



## INTRODUCTION

It was on November 1, 1966 when different hilly areas of Punjab — the districts of Kulu, Kangra, Simla, Lahul and Spiti, Nalagarh area of Ambala district, parts of Una Tehsil of Hoshiarpur district, Pathankot Tehsil of Gurdaspur district were merged to form the state of Himachal Pradesh. The region was given the full status of an autonomous State in January, 1971, by the then Prime Minister of India as the eighteenth State of the Republic of India.

Himachal Pradesh spreads over an area of 55673 sq. km. comprising of 595 km. of mountain ranges spreading along the Indus-Sutlej river system, their height varying from 244 m to 6750 m. It is bounded on the north by Jammu & Kashmir, on the east by the Chinese territory and Tehri Garhwal, on the south by the different districts of U.P. and Haryana and on the West by the different districts of Punjab.

The area of Himachal Pradesh may be classified broadly under the following altitudinal zones ;

1. Up to 1550 m — it includes the Siwaliks and the foot hills of the outer Himalayas. The rock formation is clay-slate or sometimes micaceous to coarse sand stone with occasional interstratified lime-stone. The rocks are highly metamorphosed. The climate on the whole is subtropical except on the tops of upper hill ranges. The average annual rainfall is about 1020-1275 mm.

2. 1550 to 3050 m — This region is a mountainous tract which again consists of 2 distinct zones — wet zone and dry zone.

a) Wet zone ; Occupies the outer Himalayas ; the main underlying rocks are slates, schists, shales along with limestone and a little quartzite. Highest rainfall is recorded during June to September ; the average annual rainfall is about 1275 mm ; snow falls between the months of December to March.

b) Dry zone : Occupies the inner valleys of Himalayas and Zanskar where monsoon rarely penetrates and is more or less like a semi-arid zone. Rocks are mainly of gneiss and mica schists frequently veined with quartz ; surface soil is dry and fragile.

3. The alpine pastures are above the tree limits and below the snow-lines.

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### **EARLY BOTANICAL HISTORY (1821-1900)**

The earliest attempt to collect plants from Himachal Pradesh was made by William Moorcroft (1765-1825) who collected plants from Kangra, Kulu, Lahul and Spiti in 1821. The collections he made were sent to Wallich. George Govan, a civil surgeon at Saharanpur and in-charge of the Botanical Garden also collected plants from the state in 1828. He started a nursery at Nahan in Sirmur district of Himachal Pradesh, for growing plants of the hill. He also sent his collections to Wallich.

The countess of Dalhousie was the first to collect plants from Simla in 1829. She collected about 600 species between April and October, which were sent to Sir W. J. Hooker. Dr. J.F. Royal (1800-1858) who succeeded Govan at Saharanpur, trained collectors to collect plants from the Himalaya. He made extensive collections in Bashahr, Kinnaur and Simla around 1830 and sets of his collections are housed at herbaria all over the world which includes the herbarium of the Forest Research Institute, Dehra Dun (DD) and National Academy of Science, Philadelphia (ANSPHILA).

Victor Jacquemont (1801-1832), a French botanist visited the regions of Kinnaur and Spiti on the borders of Tibet and Simla in 1830 and passed through Saharanpur when he first entered the Himalayas.

Mr. R. Inglis of Canton and a member of the Asiatic Society of Bengal also collected plants from Himachal Pradesh during the same year. James Gilbert (1833) who was in the medical service wrote about the plants of Spiti valley and the adjacent area. In 1844 General Walker and his wife made collections from Simla and sent their collections to Sir W.J. Hooker.

Others who collected in and around Simla and contributed to Sir William Hooker's herbarium were Colonel (Lieut. Gen.) Munro (1818-1880), Lt. Colonel Edward Madden (1805-1856), J.E. Winterbottom (1803-54), Richard Strachey (1817-1908), Michael Pakenham Edgeworth (1812-1851), the first ecologist of India, collected plants from Himachal Pradesh while stationed at Ambala. Lord William Hay and Lance collected plants from different places of Himachal Pradesh and sent their collections to Edgeworth. R.S. Simpson made collections from Simla in 1847. William Hawtayne Parish made collections from Mandi and Kulu during the same year.

James William Grant made collections from Kinnaur in 1850 and sent his collections to Sir J.D. Hooker. In the last part of the 19th century J.R. Drumond (1851-1921), employed trained men for plant collection.

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Sir Henry Collett collected plants from Simla and adjacent areas in 1885. J.S. Gamble made vast collection from Simla and its neighbouring areas in 1877. D. Brandis made collections from Bashahr and other areas in 1881. J.F. Duthie (1845-1922), Superintendent of the Saharanpur Botanical Garden and then botanist at Dehra Dun, when the herbarium was transferred there, made collection trips to different places in 1892 and 1893. J.H. Lace made collections from Chamba and adjacent area from 1891-1896. G.A. Gammie made collections from Chamba and other areas in 1891-1896.

#### **HISTORY OF MIDDLE PERIOD (1900 1950)**

R.N. Parker made extensive collections from Kulu, Bashahr from 1919-1936. In 1934, Parkinson made collections from Parbatti valley and other areas of Himachal Pradesh. During the same period Walter Koelz and Rupchand Thakur also made collections from different places of Himachal Pradesh. N.L. Bor made extensive collections from Lahul and adjacent areas in 1941. Among the other collectors of this century S.P. Sethi, M.V. Laurie, C.R. Brown, G.S. Puri and M.B. Raizada's collections are worthy of mention.

S.K. Jain made collection from Parbatti valley in 1950. All these collections are preserved in the herbarium of the Forest Research Institute, Dehra Dun (DD).

#### **RECENT BOTANICAL STUDIES**

In 1956, with the reorganisation of the Botanical Survey of India, the Northern Circle station was set up at Dehra Dun. Since then various officers of the Botanical Survey of India, Northern Circle, M.A. Rau, N.C. Nair, U.C. Bhattacharyya and others have periodically visited different areas of Himachal Pradesh, and collected considerable material which are preserved in the herbarium of Botanical Survey of India, Northern Circle, Dehra Dun (BSD).

Recently scientists of the Regional Research Laboratory, National Botanical Research Institute, Central Drug Research Institute, and teachers from some of the universities also have made collections from different localities of the state.

#### **WILD LIFE SANCTUARIES AND NATIONAL PARKS**

Wild life sanctuaries and national parks are created under the Wildlife Protection Act 1972 to protect the rare and endangered species of plants and animals. In Himachal Pradesh there are about 26 such sanctuaries (Saharia, 1981). They are :

(a) Sechutun Nallah, Gamgul—Siya Behli,  
Tundah, Kugti and Kelatop & Khajjar in Chamba district.

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(b) Nergu & Winch Shikari Devi and Bandi in Mandi district. Gobindsagar and Shri Naina Devi in Bilaspur district.

(c) Majathal Harseng, Shilli, Darlaghat and Chail in Solan district.

(d) Daranghati, Raksham and Chitkul and Lipa Asrang in Kinnaur district.

(e) Talra and water supply catchment area in Simla district.

(f) Renuka and Simbalbara in Sirmur district.

(g) Manali, Kias, Khokhan, Kanswar and Tirtan in Kulu district.

### AGRICULTURAL CROPS

Paddy, wheat, maize, potato, barley, millets, field peas, coriander, buck-wheat and *Amaranthus* are the principal crops of this state. Apple, pear, peach, apricot, plum and grapes are also cultivated for their fruits. *Prunus armenica* L. is another extensively grown fruit tree.

A number of Cucurbits are grown for vegetables which includes *Lagenaria siceraria*, *Luffa acutangula*, *Luffa cylindrica*, *Momordica charantia* var. *charantia*, *Momordica dioica*, *Sechium edule*, *Trichosanthes anguina*, *Trichosanthes dioica* etc.

### FORESTS AND FOREST PRODUCTS

Out of the total area of 55650 sq. km. of Himachal Pradesh, it is covered with forests. This places the state among the most heavily forested Indian states with 38.9% of the area as forest land but this is no reason for complacency as the growth of apple orchards and potato farms, the building of roads and the felling of trees are all taking its toll on the forested land.

Resins (from *Pinus* spp.), timber (from *Cedrus*, *Pinus*, *Betula*) and firewood are some of the major products obtained from the forests of the state.

The area is also rich in medicinal plants like *Artemisia*, *Dioscorea*, *Ephedra*, *Gentiana*, *Podophyllum*, *Berberis*, *Aconitum*, *Arnebia* etc. *Saussurea lappa* which is cultivated in Lahul valley is another such endangered medicinal plant.

The seeds of *Pinus gerardiana* (Chilgoza) which are considered a delicacy is gathered from the forest.

### VEGETATION

The vegetation of Himachal Pradesh is very varied and its geographical location, climate and topography have all contributed to the characteristic vegetation and flora. As the topography is irregular and disturbed

by valleys and plateaus of various extent, the stratification is not clear. The vegetation of the state is broadly known through the accounts of Collett (1902), Puri (1960), Champion and Seth (1968), M.A. Rau (1975), N.C. Nair (1977). S.K. Jain and A.R.K. Sastry (1978) and A.S. Rao (1978). The vegetation under each category dealt here is mostly according to Champion and Seth (1968) who has given detailed accounts of vegetation types of whole of Himachal Pradesh with necessary modifications. Broadly, the following main vegetational types can be indicated :

- (i) Thorny scrub of *Acacia* and *Ziziphus*.
- (ii) Sub-tropical Pine forests.
- (iii) Sub-tropical dry evergreen forests.
- (iv) Himalayan moist temperate regions.
- (v) Himalayan dry temperate regions.
- (vi) Sub-alpine forests.
- (vii) Moist alpine scrub and
- (viii) Dry alpine scrub.

(i) Thorny scrub of *Acacia* and *Ziziphus* : This type of association is generally found at the foot hills near Punjab border.

(ii) Sub-tropical Pine forests: This type occupies the lower areas of all ranges from an altitude of 600 m to ca 1700 m and are dominated by *Pinus roxburghii*, the Chir pine. The undergrowth consists of scattered bushes of *Berberis*, *Rubus*, *Carissa* etc. On exposed slopes in Chir pine belt *Euphorbia royleana* association with *Carissa* sp. are common.

- (iii) Sub-tropical dry evergreen forests.

*Olea cuspidata*, *Acacia modesta*, *Pistacia* sp. and different species of grasses like *Themeda*, *Eulaliopsis*, *Heteropogon*, *Cymbopogon*, *Saccharum* etc. are common. The other associates are *Pyrus pashia*, *Coriaria nepalensis*, *Rhus cotinus*, *R. semialata* etc. The shrubby layer is composed of *Indigofera gerardiana*, *Desmodium tiliaefolium*, *Rubus ellipticus*, *Prinsepia utilis*, *Zanthoxylum alatum* etc.

- (iv) Himalayan moist temperate forests :

*Cedrus deodara*, *Pinus wallichiana*, *Quercus ilex*, *Rhododendron arboreum*, *Juglans regia* etc. are the common tree species in this type of forest. Species of *Symplocos*, *Berberis*, *Spiraea*, *Artemisia*, *Indigofera*, *Daphne*, *Polygonum Cynoglossum* and *Iris kumaonensis* etc. are some of the common shrubby and herbaceous plants in this type of forest.

- (v) Himalayan dry temperate forest :



(vi)

*Pinus gerardiana*, *Cedrus deodara*, species of *Prunus*, *Fraxinus*, *Lonicera*, *Artemisia*, *Daphne*, *Caragana* and *Picea smithiana*, *Acer pictum*, *Aesculus* sp., *Rhododendron arboreum*, *Celtis australis*, *Salix* sp., *Morus serrata*, *Cornus macrophylla* etc. are generally found here.

(vi) Sub alpine forests :

This type of forest is characterised by *Rhododendron campanulatum*, *Betula utilis*, *Abies spectabilis*, *A. pindrow* etc. and occurs between altitudes 2400 m and 3600 m i.e. near tree limit. *Ephedra gernardiana*, *Morina coulteriana*, *Eremurus himalaicus*, *Saxifraga saginoides* are some of the herbaceous plant on the dry rocky edges.

(vii) Moist Alpine scrub ;

Occurs above 3600 m. Species of *Rhododendron*, *Berberis*, *Salix*, *Lonicera*, *Cotoneaster*, *Aconitum*, *Astragalus*, *Cassiope*, *Rheum*, *Potentilla*, *Iris*, *Allium*, *Pedicularis* etc. are common.

(viii) Dry Alpine scrub :

*Juniperus* sp. is the dominant shrub in this type with many herbaceous plants like species of *Primula*, *Sedum*, *Draba*, *Saussurea*, *Caltha*, *Corydalis*, *Leontopodium*, *Anaphalis*, *Anemone*, *Gentiana*, *Saxifraga*, *Thalictrum*, *Taraxacum*, *Carex*, *Kobresia*, and grasses like *Festuca* *Poa* spp. etc. are found in the dry alpine regions.

In the present enumeration families are arranged according to Bentham and Hooker's system of classification. The first volume deals with Dicots, from Ranunculaceae to Caprifoliaceae, the genera and species in the family are arranged alphabetically. The treatment of each species includes the original citation of the correct name followed by basionym and synonyms if any. Reference has also been made to Flora British India, and regional floras like, Collett's Flora Simlensis, Parker's Forest Flora, Nair's Flora Bashahr Himalaya and a reference has also been made to Stewart's Annotated catalogue of Vascular Plants of West Pakistan and Kashmir and Flora West Pakistan. Each species has been provided with distinguishing characters, its presence in various districts of Himachal Pradesh and the acronym of the herbaria where they are deposited like BSD Botanical Survey of India, Dehra Dun ; DD - Forest Research Institute, Dehra Dun ; CAL - Central National Herbarium, Botanical Survey of India, Howrah ; BSIP Birbal Sahni Institute of Paleo botany, Lucknow ; LWG National Botanical Research Institute, Lucknow ; CDRI Central Drug Research Institute, Lucknow and RRL - Regional Research Laboratory, Jammu.

## RANUNCULACEAE

H. J. CHOWDHERY, B. M. WADHWA AND R. PRASAD

**Aconitum chasmanthum** Stapf ex Holmes Mus. Report Pharm. Soc. G. B. 2. 1903 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 257. 1972. *Aconitum napellus* L. Sp. Pl. 29. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 28. 1872. var. *napellus*.

Stem 60 - 90 cm, leafy. Raceme densely flowered, bright or dull greenish - blue.

*Fl. & Fr.* : May September.

Lahul and Spiti (DD).

Alpine Western Himalaya.

**Aconitum deinorrhizum** Holmes ex Stapf in Ann. Bot. Gard. Calcutta 10 : 158. 1905 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 257. 1972 ; Rau, High Alt. Fl. Plants 55. 1975. *A. ferox* Wall. ex Ser. var. *laciniatum* and var. *atrox* Wall. in Agr. leds. 3 : 96. 1902.

Root biennial, tuberous. Leaves up to 10 or 12, scattered, lower usually decay at the time of flowering. Inflorescence straight, racemose. Sepals blue. Seeds obconic, 3 mm long with numerous small, transverse lamellae.

The root contains a poisonous alkaloid.

*Fl. & Fr.* : June October.

Kinnaur, Simla (Rau, 1975). Himalaya, Himachal Pradesh to Nepal.

**Aconitum falconeri** Stapf var. *latilobum* Stapf in Ann. Bot. Gard. Calcutta 10 : 164. 1905.

Root up to 12 cm long and 2.50 cm thick with few fibres. Upper leaf - blades 3 partite. Inflorescence tomentose with spreading hairs. Carpels quite glabrous.

The root is considered poisonous.

*Fl. & Fr.* : May October.

Bashahr Himalaya (Mukerjee, 1962).

**Aconitum ferox** Wall. ex Ser. Mus. Helv. 1 : 160. t. 15. f. 43 & t. 44. 1823 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 28. 1872.

Root biennial, paired, tuberous. Leaves scattered, distant excepting the lowest 2 or 3 which usually decay at the time of flowering. Inflorescence a loose raceme. Sepals blue.

It yields a very effective medicine which acts as a narcotic, sedative.  
*Fl. & Fr.* : July November.

Kinnaur (CAL).

Temperate alpine Himalaya, from Himachal Pradesh to Sikkim.

**Aconitum heterophyllum** Wall. ex Royle, Ill. Bot. Himal. Mount. 56. t. 13. 1833 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 29. 1872 ; Collett, Fl. Siml. 13. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 258. 1972 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 5. 1977.

Downy herb. Leaves acute or obtuse, cauline, sharply toothed, the lower long petioled and not amplexicaule. Raceme often paniced. Flowers bright blue to greenish blue with purplish veins.

Root is medicinally important.

*Fl. & Fr.* : May October.

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

Temperate Western Himalaya upto Nepal.

**Aconitum laeve** Royle, Ill. Bot. Himal. Mount. 56. 1834 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 5. 1977. *A. lycoctonum* auct (non L.) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 2 : 28. 1872 ; Collett, Fl. Siml. 13. 1902.

Stem erect, pubescent or glabrous, more than 1 m tall. Leaves deeply lobed, petals pale yellow or dull purple. Roots poisonous.

*Fl. & Fr.* : April August.

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

Western temperate Himalaya and Nepal.

**Aconitum rotundifolium** Kar. & Kir. in Bull. Soc. Nat. Mosc. 15. 139. 1842 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 258. 1972 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 6. 1977. *A. napellus* var. *rotundifolium* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 29. 1872.

Erect, tuberous herb. Leaves lobed but not divided to the base. Flowers pale green to grey green.

*Fl. & Fr.* : July September.

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

Alpine Himalaya, Kashmir to Nepal.

**Aconitum violaceum** Jacq. ex Stapf in Ann. Bot. Gard. Calcutta 10. 144. 1905 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 259. 1972 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 6. 1977. *A. napellus* var. *multifidum* & var. *rigidum* (*pro parte*) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 29. 1872.

Small, erect herb. Root tuberous. Leaves many lobed to the base, lobes cut into linear segments. Flowers violet to blue.

*Fl. & Fr.* : July October.

Chamba (CAL, DD, RRL), Lahul and Spiti (CAL), Simla (CAL, DD).

Temperate alpine Himalaya, Kashmir to Nepal.

**Actaea spicata** L. Sp. Pl. 504. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 29. 1872 ; Collett, Fl. Siml. 15. 1902 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 9. 1977. *A. acuminata* Wall. ex Royle, Ill. Bot. Himal. Mount. 57. 1834.

Pubescent, erect herb with woody root stock. Flowers white, petal shorter than sepals. Berry elliptic or subglobose, black.

The root is an active purgative.

*Fl. & Fr.* : May August.

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

Temperate Himalaya, Kashmir to Assam.

**Adonis aestivalis** L. Sp. Pl. ed. 2. 771. 1763 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 15. 1872 ; Collett, Fl. Siml. 8. 1902 ; Nair, Fl. Bash. Himal. 6. 1977. ssp. *aestivalis*.

Annual, erect herb. Leaves alternate, sessile. Corolla brick red with dark purple spot at the base. Achenes in an ovoid or oblong head, deeply pitted.

The whole plant is used as a cordiotonic and diuretic in Europe.

*Fl. & Fr.* : May September.

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

Western Himalaya and Nepal.

**Adonis aestivalis** L. ssp. **parviflora** (Fisch. ex DC.) Busch. in Fl. Cauc. Crit. 3 (3) : 201. 1903. *A. parviflorus* Fisch. ex DC. Prodr. 1 : 24. 1824. *A. scrobiculata* Boiss. Diagn. ser. 2 (1) : 6. 1754 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 15. 1872. *A. aestivalis* L. var. *scrobiculata* (Boiss). Finet. et Gagnep. in Bull. Soc. Fr. 50 : 133. 1903 ; Nair Fl. Bash. Himal. 6. 1977.

An annual erect herb. Achenes very variable, similar to *A. aestivalis* but differs in having angled seeds with small tubercles.

*Fl. & Fr.* : June August.

Chamba (DD), Kinnaur (DD).

Western Himalaya.

**Adonis chrysocyathus** Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 15. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 260. 1972 ; Rau, High Alt. Fl. Plants 55. 1975.

Perennial herb. Root stock scaly, horizontal. Stem several, erect, leafy. Flowers golden - yellow. Achenes in dense heads.

*Fl. & Fr.* : June September.

Chamba (DD).

Alpine Western Himalaya and Nepal.

**Anemone coronaria** L. Sp. Pl. 539. 1753 var. **biflora** (DC) Finet. et Gangep. in Bull. Soc. Bot. Fr. 51 : 60. 1906. *A. biflora* DC. Syst. 1 : 201. 1818 et Prodr. 1 : 19. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 7. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 260. 1972.

Annual or perennial herb. Scape up to 20 cm, slender, usually quite glabrous. Flowers dull red. Achenes with short style, embedded in dense wool.

*Fl. & Fr.* : June September.

Lahul and Spiti (CAL).

Kashmir and Himachal Pradesh, in dry rocky places.

**Anemone falconeri** Thoms. in Hook. Ic. Pl. t. 899. 1852 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 8. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 260. 1972.

Softly hairy herb. Root stout, fibrous. Radical leaves many, long petioled. Flowers white, short pedicelled. Achenes oblong, angled, silky.

*Fl. & Fr.* : May August.

Lahul and Spiti (DD).

Western Himalaya.

**Anemone narcissifolia** L. Sp. Pl. 532. 1753 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 261. 1972 ; Nair, Fl. Bash. Himal. 6. 1977. *A. narcissiflora* L. Sp. Pl. ed 2 : 763. 1762 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 10. 1872.

Hairy herb. Flowers simply umbelled, white. Achenes nearly orbicular with an incurved beak.

*Fl. & Fr.* : July August.

In Siberia the juice of the plant is used to poison arrows and is also used medically in Europe.

Simla (BSD, CAL), Lahul and Spiti (CAL).

Kashmir and Himachal Pradesh.

**Anemone obtusiloba** D. Don, Prodr. Fl. Nepal. 194. 1825 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 8. 1872 ; Collett, Fl. Siml. 5. 1902 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 7. 1977. *A. obtusiloba* D. Don ssp. *obtusiloba* Bruhl in Ann. Bot. Gard. Calcutta 5 : 78. 1896.

Densely tufted herb. Radical leaves 3 parted, hairy. Colour of tepals variable, white, lemon yellow or deep blue, sometimes white with purple bands outside. Achenes glabrous.

The leaves are good in complaints of spleen, kidney and jaundice.

*Fl. & Fr.* April September.

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

Temperate and alpine Himalaya, Kashmir to Bhutan.

**Anemone polyanthes** D. Don, Prodr. Fl. Nepal. 194. 1825 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 9. 1872 ; Collett, Fl. Siml. 6. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 261. 1972 ; Nair, Fl. Bash. Himal. 7. 1977. *A. narcissifolia* L. var. *polyanthes* (D. Don) Finet. et Gagnep. in Bull. Soc. Fr. 51 : 75. 1904.

Silky herb. Radical leaves 5-7 lobed, silky. Flowers white, achenes broadly oval, glabrous.

*Fl. & Fr.* : June August.

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

Inner Himalaya, Kashmir to Bhutan.

**Anemone pulsatilla** L. Sp. Pl. 539. 1753 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 7. 1977. *A. albana* Stev. in Mem. Soc. Hist. Nat. Mosc. 3 : 264. 1820 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 7. 1872. *A. wallichiana* Royle, Ill. Bot. Himal. Mount. 52. 1839.

Densely tufted perennial herb. Leaf segments pinnatifid. Flowers solitary, dull red-brown. Sepals with erect tips, about as long as the stamen.

Anemonin is obtained from this plant.

*Fl. & Fr.* : June September.

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

Western Himalaya.

**Anemone rivularis** Buch. Ham. ex DC. Syst. Nat. 1 : 211. 1817 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 9. 1872 ; Collett, Fl. Siml. 6. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 251. 1972 ; Nair, Fl. Bash. Himal. 7. 1977.

Erect hairy herb up to 1 m high. Radical leaves long petioled. Cyme compound. Flowers white or bluish outside. Sepals 5-8. Achenes large, oblong, style hooked.

*Fl. & Fr.* : May-September.

Chamba (CAL), Kinnaur (CAL), Kulu (BSIP, CAL), Lahul and Spiti (BSD, CAL), Mandi (CAL), Simla (CAL, LWG), Sirmur (CAL).

Temperate areas of India.

**Anemone rupicola** Camb. in Jacquem. Voy. Bot. 4 : 5. t. 2. 1835 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 8. 1872 ; Rau, High Alt. Fl. Plants 55. 1975 ; Nair, Fl. Bash. Himal. 8. 1977.

Root stock long, slender, woody. Radical leaves long petioled, segments more or less petioled, sharply incised or 3-lobed. Flowers showy. Achenes embedded in wool.

*Fl. & Fr.* : May-August.

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

Inner valleys of Himalaya.

**Anemone tetrasepala** Royle, Ill. Bot. Himal. Mount. 53. 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 10. 1872 *in part* ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 261. 1972 ; Rau, High Alt. Fl. Plants 55. 1975.

Root stock woody, petiole and young leaves woolly. Radical leaves long petioled. Involucral leaves large, broadly cuneate, sharply toothed. Flowers white.

*Fl. & Fr.* : July-August.

Chamba (CAL, BSD), Mandi (CAL).

Kashmir and Himachal Pradesh.

**Anemone vitifolia** Buch. Ham. ex DC. Syst. Nat. 1 : 211. 1817 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 8. 1872 ; Collett, Fl. Siml. 4. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 261. 1972 ; Nair, Fl. Bash. Himal. 8. 1977.

Pubescent herb up to 1 m high. Radical leaves deeply 5-lobed, glabrous above densely tomentose beneath. Flowers white. Achenes white, wooly, in globose heads.

*Fl. & Fr.* : May-October.



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

Temperate Himalaya.

**Aquilegia fragrans** Benth. in Maund Botanist 4 : t. 181. 1840 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 262. 1972 ; Rau, High Alt. Fl. Plants 59. 1975. *A. glauca* Linde. Bot. Reg. 26. t. 44. 1840. *A. vulgaris* ssp. *pyrenaica* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 24. 1872 *in part*.

Softly pubescent herb. Flowers white, showy.

*Fl. & Fr.* : July September.

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

Alpine and temperate Western Himalaya.

**Aquilegia moorcroftiana** Wall. ex Royle, Ill. Bot. Himal. Mount. 55. t. 21. 1834 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 262. 1972 ; Rau, High Alt. Fl. Plants 57. 1975. *A. vulgaris* ssp. *pyrenaica* (in part) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 24. 1872.

Perennial, glabrous or slightly pubescent herb. Spur hooked as long as the blade of the petal.

*Fl. & Fr.* : May August.

Chamba (DD), Kulu (DD), Lahul and spiti (CAL, DD), Simla (DD). Kashmir and Himachal Pradesh upto Nepal.

**Aquilegia nivalis** Falc. ex Baker in Gard. Chron. 2 (10) : 76. 1878 ; Mukerjee in Bull. Bot. Surv. India. India 2 : 296. 1960. *A. vulgaris* ssp. *jucunda* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 24. 1872 (non Fiscal & L Allen).

Stem simple, leafless or one small leaf. Flowers very large, dark purple. Sepals very broadly ovate.

*Fl. & Fr.* : June September.

Kashmir and Himachal Pradesh.

**Aquilegia pubiflora** Wall. ex Royle, Ill. Bot. Himal. Mount. 55. 1834 ; Collett, Fl. Siml. 11.1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 252. 1972 ; Rau, High Alt. Fl. Plants 57. 1975 ; Nair, Fl. Bash. Himal. 8. 1977. *A. vulgaris* ssp. *pubiflora* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 24. 1872. *A. pubiflora* var. *subnuda* Bruhl in Asist. Soc Bengal 61 (2) : 311. 1822.

Softly pubescent herb. Flowers drooping, purplish brown. Petals. with hooked spur. Follicles 5, tipped with styles.

*Fl. & Fr.* : May August.

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

Temperate outer Himalaya, Kashmir to Nepal.

**Acqilegia pubiflora** Wall. ex Royle var. **mussooriensis** Royle, Ill. Bot. Himal. Mount. 55. 1834 ; Mukerjee in Bull. Bot. Surv. India 2 : 297. 1960 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 162. 1972.

Very variable plant. Flowers usually purple but sometimes white or yellow.

*Fl. & Fr.* : June August.

Chamba (CAL).

North Western Himalaya.

**Callianthemum pimpinelloides** (D. Don ex Royle) Hook. f. & Thoms. Fl. India 26. 1855 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 263. 1972 ; Rau, High Alt. Fl. Plants 57. 1975. *Ranunculus pimpinelloides* D. Don ex Royle, Ill. Bot. Himal. Mount. 53. 1834. *Callianthemum cachemirianum* Camb. in Jacquem. Voy. Bot. 5. t. 3. 1835 ; Hook. f. & Thom. in Hook. f. Fl. Brit. India 1 : 14. 1872.

Densely tufted annual herb. Leaves numerous, long petioled, segments rounded, pinnules orbicular, deeply cut. Scape shorter than the leaves. Flowers white.

*Fl. & Fr.* : May September.

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

Inner ranges of the Himalaya.

**Caltha palustris** L. Sp. Pl. 558. 1753. *C. himalensis* D. Don, Prodr. Fl. Nepal. 195. 1825. *C. palustris* L. var. *himalensis* (D. Don) Mukerjee in Bull. Bot. Surv. India 2 : 105. 1962. *C. elata* Duthie, Gard. Chron. 1 : 178. 1985. *C. govaniiana* Wall. ex Royle, Ill. Bot. Himal. Mount. 54. 1854. var. **palustris**.

An annual herb, along with streams, wet places. Rootstock stout, densely fibrous. Radical leaves long petioled. Flowers yellow.

The roots are acrid, poisonous.

*Fl. & Fr.* : April August.

Chamba (CAL), Kangra (BSIP), Kiunaur (CAL), Kulu (CAL), Lahul and Spiti (CAL, RRL).

Temperate Himalaya from Kashmir to Nepal.

**Caltha palustris** L. Sp. Pl. 558. 1753 var. **alba** (Camb. ex Jacquem.) Hook. f. & Thoms. in Fl. Ind. 40. 1855 et in Hook. f. Fl. Brit. India 1 : 21. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 263. 1972 ; Rau, High Alt. Fl. Plants 57. 1975 ; Nair, Fl. Bash. Himal. 9. 1977. *C. alba* Camb. ex Jacquem. Voy. 6. t. 4. 1835.

Herb growing alongwith streams and in wet places. Root stock densely fibrous. Flowers white.

*Fl. & Fr.* : June September.

Sirmur (DD).

Temperate Himalaya from Kashmir to Nepal.

**Ceratosephalus falcatus** (L.) Pers. Syn. 1 : 341. 1805 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 263. 1972. *Ranunculus falcatus* L. Sp. Pl. 566. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 16. 1872.

Annual, glabrous or nearly woolly herb. Leaves all radical, segments narrow linear, entire or 3 fid. Scape longer than the leaves.

*Fl. & Fr.* : April - June.

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

North Western Himalaya from Kashmir to Himachal Pradesh.

**Cimicifuga foetida** L. Syst. Nat. ed. 12 : 659. 1767 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 30. 1872 ; Collett, Fl. Siml. 15. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 264. 1972 ; Nair, Fl. Bash, Himal. 9. 1977.

Tall herbs. Branches glabrous below and tomentose above. Raceme rarely simple. Flowers small, yellowish. Follicles 4-8.

The roots have emetic and purgative properties.

*Fl. & Fr.* : June-September.

Sima (CAL, DD).

Temperate Himalaya from Kashmir to Bhutan.

**Clematis acuminata** DC. Syst. Nat. 1 : 148. 1817; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 5. 1872; Nair, Fl. Bash. Himal. 9. 1977. *C. acuminata* DC. var. *wallichii* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 6. 1872.

A large woody climber. Sepals erect with recurved tips. Filaments hairy, anthers without prolonged connections. Achenes with long feathery style, silky.

*Fl. & Fr.* June-September.

Simla (DD).

Temperate Himalaya, from Himachal Pradesh to Bhutan.

**Clematis barbellata** Edgew. in Trans. Linn. Soc. Bot. 20 : 25. 1846; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 3. 1872; Collett, Fl. Siml. 2. 1902; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 264. 1972; Nair, Fl. Bash. Himal. 9. 1977.

A large climber. Flowers large, solitary on long stalks, dull purple. Filaments hairy. Achenes with feathery style, glabrous.

*Fl. & Fr.* : July-October.

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

Temperate Western Himalaya, from Himachal Pradesh to Nepal.

**Clematis buchananiana** DC. Syst. Nat. 1 : 140. 1817; Hook. f. & Thoms. in Fl. Ind. 10. 1855 et in Hook. f. Fl. Brit. India 1 : 6. 1872 *p. p.*; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 264. 1972; Nair, Fl. Bash. Himal. 10. 1977. (var. *rugosa* only).

Large woody climbers. Leaves pinnate, hairy. Flowers in panicles, white or purple yellow. Sepals erect, tips curved. Filaments hairy throughout.

*Fl. & Fr.* : June September.

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

Throughout the temperate Himalaya.

**Clematis connata** DC. Prodr. 1 : 3. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 6. 1872 ; Collett, Fl. Siml. 4. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 264. 1972 ; Nair, Fl. Bash. Himal. 10. 1977.

Large woody climber, young parts covered with scattered hairs. Flowers yellowish white. Sepals erect, tips recurved. Achenes silky.

*Fl. & Fr.* : June October.

Chamba (CAL, DD), Kinnaur (BSD, CAL), Kulu (BSD, CAL), Simla (CAL, DD, LWG), Sirmur (DD).

Temperate Himalaya, Kashmir to Bhutan.

**Clematis florida** Thunb. Fl. Jap. 240. 1784 ; Nair, Fl. Bash. Himal. 10. 1977.

A beautiful climber with deep purple flowers. Cultivated in gardens.

*Fl. & Fr.* : June October.

Simla (DD).

Western Himalaya.

**Clematis gouriana** Roxb. ex DC. Syst. Nat. 1 : 138. 1818 et Prodr. 1 : 3. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 4. 1872 ; Collett, Fl. Siml. 4. 1902 ; Nair, Fl. Bash. Himal. 10. 1977.

An extensive climber. Leaves pinnate or 2 pinnate, leaflets thin, smooth. Flowers yellowish or greenish - white, crowded in panicles. Sepals densely pubescent. Achenes narrow oblong, hairy.

*Fl. & Fr.* : July November.

Chamba (CAL, DD), Simla (CAL, DD), Solan (DD).

Hilly regions of India.

**Clematis grata** Wall. Plant. Asiat. Rar. 1 : 83. t. 98. 1830 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 3. 1872 ; Collett, Fl. Siml. 2. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 264. 1972 ; Nair, Fl. Bash. Himal. 11. 1977.

A hairy climber with furrowed stem. Panicles often exceeding the leaves. Flowers cream coloured. Sepals tomentose outside. Achenes densely pubescent.

*Fl. & Fr.* : July September.

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

Subtropical and temperate western Himalaya.

**Clematis graveolens** Lindl. in Journ. Hort. Soc. 1 : 307. 1846 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 4. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 265. 1972 ; Nair, Fl. Bash. Himal. 11. 1977.

Slender climber. Leaflets glabrous. Panicles 3 7 flowered, upper flowers often solitary. Flowers yellow. Sepals spreading, slightly purple at the base. Filaments tomentose. Achenes pubescent.

Plants poisonous.

*Fl. & Fr.* : May August.

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

Western temperate Himalaya, Kashmir to Nepal.

**Clematis montana** Buch. Ham. ex DC. Syst. Nat. 1 : 164. 1817 et Prodr. 1 : 9. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 2. 1872 ; Collett, Fl. Siml. 2. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 265. 1972 ; Nair, Fl. Bash. Himal. 11. 1977.

A large woody climber. Leaves fascicled at the nodes. Flowers white, pinkish or yellowish, often scented. Achenes glabrous.

*Fl. & Fr.* : April August.

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

Temperate Himalaya.

**Clematis orientalis** L. Sp. Pl, 543. 1753 ; Hook. f. & Thoms. in Fl. Ind. 8. 1855 et in Hook. f. Fl. Brit. India 1 : 5. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 265. 1972. var: **orientalis**.

A large woody climber. Panicles many flowered. Flowers yellow or mottled with purple.

Plant poisonous.

*Fl. & Fr.* : July September.

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

Dry inner valleys of Western Himalaya.

**Clematis orientalis** L. var. **glauca** (Willd.) Mukerjee in Bull. Bot. Surv. India 1 : 140. 1959. *C. glauca* Willd. Enum. Pl. Horti. Berol. 583. 1809. *C. orientalis* L. var. *obtusifolia* Hook. f. & Thoms. Fl. Ind. 9. 1855 et in Hook. f. Fl. Brit. India 1 : 5. 1872.

Large climber, usually very glaucous. Leaves oblong, obtuse.

*Fl. & Fr.* : July November.

Kinnaur (CAL, DD).

Western Himalaya, in dry inner valleys.

**Clematis orientalis** L. var. **globosa** (Royle) Mukerjee in Bull. Bot. Surv. India 1 : 140. 1959. *C. globosa* Royle, Ill. Bot. Himal. Mount. 51. 1834. *C. orientalis* L. var. *latifolia* Hook. f. & Thoms. Fl. Ind. 9. 1855 et in Hook. f. Fl. Brit. India 1 : 5. 1872.

Woody climber. Leaves orbicular or oval, obtusely lobed.

*Fl. & Fr.* : June November.

Kinnaur (DD).

Western Himalaya, in dry inner valleys.

**Clematis orientalis** L. var. **lsngicaudata** (Ledeb.) Mukerjee in Bull. Bot. Surv. India 1 : 139. 1959. *C. longicaudata* Ledeb. Fl. Ross. 1 : 3. 1882. *C. orientalis* L. var. *acutifolia* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 5. 1872.

Large climber. Leaves oblong lanceolate acute or acuminate. Flowers usually large.

*Fl. & Fr.* : June September.

Layul and Spiti (CAL, DD).

Western Himalaya, in dry inner valleys.

**Clematis puberula** Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 4. 1872 ; Collett, Fl. Siml. 5. 1902. *C. parviloba* Garden et Champ. var. *puberula* O. Ktze. Monogr. Clematis 148. 1885.

Climber. Stem deeply grooved, downy. Flowers in leafy panicles, yellow. Achenes silky.

*Fl. & Fr.* : March September.

Simla (DD).

Temperate Western Himalaya.

**Clematis roylei** Rehder. in Journ. Arn. Arb. 22 : 575. 1941 ; Mukerjee in Bull. Bot. Surv. India 1 : 140. 1959. *C. nutans* Royle, Ill. Bot. Himal. Mount. 51. 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 5. 1872.

A woody, slender climber. Leaflets 4 5 lobed, rarely entire. Flowers yellow. Sepals silky outside. Achenes silky hairy.

*Fl. & Fr.* : July November.

Kulu (BSD), Simla (DD).

Temperate Himalaya and Khasia hills.

**Clematis tortuosa** (Wall. ex Hook. f. & Thoms.) C. E. C. Fischer in Kew Bull. 1929 : 4. 1929 ; Kapoor in Bull. Nat. Bot. Gard. Lucknow no. 78 : 52 55. 1962. *C. buchania* var *tortuosa* & *vitifolia* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 6. 1872.

A woody climber. Stem pubescent or with soft fibrous hairs. Flowers sweet scented.

*Fl. & Fr.* : March - September.

Chamba (BSD), Simla (BSIP).

Throughout in the temperate Himalaya.

**Consolida ambigua** (L.) Ball. in Fedde Repert. 66 : 151. 1962 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 265. 1972. *Delphinium ambiguum* L. Sp. Pl. ed. 2. 744. 1762.

*Fl. & Fr.* : June October.

Chamba (CAL).

Cultivated in Garden.



**Delphinium brunonianum** Royle, Ill. Bot. Himal. Mount. 56. 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 27. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 266. 1972 ; Nair, Fl. Bash. Himal. 12. 1977. *D. jacquemontianum* Camb. in Jacquem. Voy. Bot. 4 : 8. t. 7. 1835.

Perennial herb up to 30 cm tall. Leaves fivefid to the middle, lobes sharply cut or toothed. Flowers blue.

*Fl. & Fr.* : June September.

Chamba (CAL, DD), Kinnaur (CAL), Lahul and Spiti (BSD, CAL).  
Alpine Himalaya.

**Delphinium caeruleum** Jacquem. ex Camb. in Jacquem. Voy. Bot. 4 : 7. t. 6. 1835 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India. 1 : 25. 1872 ; Nair, Fl. Bash. Himal. 12. 1977. *D. grandiflorum* L. var. *kunawarensis* Bruhl in Ann. Bot. Gard. Calcutta 5 : 98. 1896.

Herb up to 30 cm, stem branched from the base. Leavs suborbicular, 5 7 lobed. Flowers pale blue

The root is applied to kill the maggots in the wounds of goats.

*Fl. & Fr.* : August October.

Chamba (CAL) , Kinnaur (DD).

Alpine Himalaya from Himachal Pradesh to sikkim.

**Delphinium cashmirianum** Royle, Ill. Bot. Himal. Mount. 55. t. 12. f. 1 5. 1834 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 266. 1972 ; Rau, High Alt. Fl. Plants 58. 1975.

Tall or dwarf perennial herb. Leaves palmately 5 7 lobed. Flowers in lax corymbs, purple blue.

*Fl. & Fr.* : July October.

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

Himalaya from Kashmir to Kumaon.

**Delphinium densiflorum** Duthie ex Maxim. Fl. Tangu 24 1889 ; Bruhl, Ann. Bot. Gard. Calcutta 5 : 192 1895 ; Mukerjee in Bull. Bot. Surv. India 2 : 294 1960.

*Fl. & Fr.* : June October.

Kinnaur (CAL)

North Western Himalaya.

**Delphinium denudatum** Wall. ex. Hook. f. & Thoms. Fl. Ind. 49. 1855 et in Hook. f. Fl. Brit. India 1 : 25. 1872 ; Collett, Fl. Siml. 12. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 266 1972 ; Nair, Fl. Bash. Himal. 12 1977. *D. pauciflorum* Royle, Ill. Bot. Himal. Mount. 55 1834 (non D. Don, 1825)

Annual erect herb. Radical leaves 5 7 partite, cauline few, upper most 3 partite Flowers pale blue. Follicles 3.

*Fl. & Fr* : April September.

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

Temperate western Himalaya, from Kashmir to Kumaon

**Delphinium kolzii** Munz in J. Arn. Arb. 48 : 522. 1967.

Stem slender, lower leaves mostly withered by anthesis. Raceme lax, sepals white coloured to blue.

*Fl. & Fr.* : June september.

Kangra (Mich. ), Kulu (GH).

North Western Himalaya.

**Delphinium lacostie** Danguy in Journ: Bot. Morot 21 : 50. 1908 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 267 1972.

*Fl. & Fr.* : July November.

Chamba (Stewart, 1972)

North - Western Himalaya.

**Delphinium pyramidale** Royle, Ill. Bot. Himal. Mount. 56 1834 ; Rau, High Alt. Fl. Plants 58 1975. *D. elatum* L. var. *ranunculifolium* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 26. 1872. *D. speciosum* M. Bieb. var. *pyramidale* (Royle) Mukerjee in Bull. Bot. Surv. India 2 (3 4) : 295 1961.

Glabrous or hairy herb. Leaves 5 lobed, segments broadly cuneate.

*Fl. & Fr.* : June October.

Kangra (DD).

North Western Himalaya.

**Delphinium roylei** Munz in J. Arn. Arb. 48.292. 1967 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 267. 1972 ; Rau, High Alt. Fl. Plants 58. 1975 ; Nair, Bash. Himal. 12. 1977. *D. incanum* Royle, Ill. Bot. Himal. Mount. 55. 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 25. 1872.

Hoary herb upto 2 m tall. Radical leaves soon withering. Raceme simple or compound, terminal, long and dense flowered. Flowers bright blue.

*Fl. & Fr.* : May August.

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

Temperate western Himalaya, Kashmir and Himachal Pradesh.

**Delphinium vestitum** Wall. ex Royle, Ill. Bot. Himal. Mount. 55. 1834; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 26. 1872 ; Collett, Fl. Siml. 13. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 268 1972 ; Nair, Fl. Bash Himal. 13. 1977. *D. rectivenium* Royle, Ill. Bot. Himal. Mount. 56. 1834.

Erect hairy herb upto 1 m high. Leaves orbicular, 5 7 lobed. Flowers dull blue and purple.

*Fl. & Fr.* : July September.

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

Western and central temperate Himalaya.

**Halerpestes salsuginosa** (Pall.) Greene in Pittonia 4 : 208. 1900. *Ranunculus salsuginosus* Pall. Reise 3 : 213 1776. *R. cymbalariae* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 17. 1872 p. p. (non Pursh, 1814). *Halerpestes sarmentosa* (Adams) Komarove in Komar. et Klob Alisova, Key Pl. Far. East Reg. U. S. S. R. 1 : 550. 1931 ; Rau, High. Alt. Fl. Plants 58 1975. *Ranunculus sarmentosus* Adams in Mem. Soc. Nat. Mosc. 9:244. 1864 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 273. 1972.

Sarmentose herb rooting at nodes. Leaves 3 5 lobed. Flower yellow.

*Fl. & Fr.* : July September.

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

Himachal Pradesh and Sikkim.

**Halerpestes tricuspis** (Maxim.) Hand Mzt. in Act. Hort. Gotob. 13 : 135. 1940 ; Rau, High. Alt. Fl. Plants 58. 1975. *Ranunculus tricuspis* Maxim. Fl. Tangut 12. 1889. *R. cymbalariae* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 17. 1872. p. p. (non Pursh, 1814). *R. palifolius* Dunn in Kew Bull. 1925. 280. 1925 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 273. 1972.

Stoloniferous herb rooting at nodes. Leaves usually 3 partite. Flower yellow.

*Fl. & Fr.* : July October.

Lahul and Spiti (BSD, CAL).

Himalaya.

**Nigella damascena** L. Sp. Pl. 534. 1753 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 268. 1972.

Erect herb. Flowers intricately involucrate. Planted in garden as an ornamental.

*Fl. & Fr.* : July September.

Kulu (BSD, CAL).

Planted in the garden.

**Nigella sativa** L. SP. Pl. 534. 1753 ; Davis in Fl. Turkey 1 : 103. 1965. *N. indica* Roxb. ex Flem. in As. Res. 11 : 173. 1810.

Erect annual pubescent or shortly viscid hirsute herb. Flowers not involucrate, greenish or whitish.

*Fl. & Fr.* : March May.

Chamba (DD).

Western Himalaya.

**Oxygraphis polypetala** (Royle) Hook f. & Thoms. Fl. Ind. 27. 1855 et in Hook. f. Fl. Brit. India 1 : 21. 1872. *Ranunculus polypetalus* Royle, Ill. Bot. Himal. Mount. 54. t. 11. f. 2. 1933 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 272 1972.

A tiny herb. Leaves orbicular, crenatelobed. Scape usually several. Flowers yellow, sepals persistent, petals 10.

*Fl. & Fr.* : April August.

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

Western Himalaya, from Kashmir to Kumaon.

**Paraquilegia grandiflora** (Fisch. ex DC.) Drum. & Hutchins. in Kew Bull. 1920 : 156. 1920 ; Mukerjee in Bull. Bot. Surv. India 2 : 107. 1960. *Isopyrium grandiflorum* Fisch. ex DC. Prodr. 1 : 48. 1824 ; Hook. f. & Thoms. Fl. ind. 43. 1855 et in Hook. f. Fl. Brit. India 1 : 23. 1872.

Tufted perennial herbs.

*Fl. & Fr.* : May September.

Chamba (CAL).

North Western Himalaya.

**Paraquilegia microphylla** (Royle) Drum. ex Hutchins. in Kew Bull. 157. f. 2. 1920 ; Mukerjee in Bull. Bot. Surv. India 2 : 107. 1960. *Isopyrum microphyllum* Royle, Ill. Bot. Himal. Mount. 54. t. 11. f. 4. 1934. *I. grandiflorum* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 23. 1872 (in - part). *Paraquilegia grandiflora* (non Drum. and Hutchin. in Kew Bull. 1920 : 56. 1920) Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 269. 1972.

Tufted perennial herbs. Flowers purplish white to purple. Carpels 3 - 7.

*Fl. & Fr.* : June - August.

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

Alpine Western Himalaya from Kashmir to Kumaon.

**Paraquilegia uniflora** (Aitch. & Hemsl.) Drum. & Hutchins. in Kew Bull. 1920 : 158. 1920 ; Mukerjee, Bull. Bot. Surv. India 2 : 107. 1960. *Isopyrum unflorum* Aitch. & Hemsl. J. Linn. Soc. 19 ; 149. 1875. *I. anemonoides* Kar. & Kir. Enum. Pl. Songor. No. 55. 1842. *I. thalictroides* Hook. f. & Thoms. (non L.) Fl. Ind. 43. 1855 et in Hook. f. Fl. Brit. India 1 : 23 .1872.

Delicate or caespitose rigid herbs on rocky surface near streams. Flowers. white, carpels 2 - 4.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD, CAL, DD).

Temperate Western Himalaya, Kashmir and Himachal Pradesh.

**Ranunculus arvensis** L. Sp. Pl. 555. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 20. 1872 ; Mukerjee in Bull. Bot. Surv. India 2 : 102. 1960 ; Stewarte, Ann. Cat. Vas. Pl. W. Pak. & Kash. 269. 1972 ; Nair, Fl. Bash. Himal. 13. 1977.

Diffuse weed in wheat fields and common in marshy places. Leaves variable. Flowers yellow. Achenes 5-10, usually clothed with hooked spines.

*Fl. & Fr.* : April July.

Chamba (BSD, CAL), Kangra (RRL), Kinnaur (BSD, CAL), Kulu (BSD, BSIP), Simla (BSD, CAL), Una (CAL).

Western Himalaya from Kashmir to Kumaon.

**Ranunculus brotherusii** Freyn in Bull. Herb. Boiss. 6 : 985. 1898 var. **dasycarpus** (Maxim.) Hand Mazz. Acta Horti. Goteburg. 13 : 149. 1939 ; Mukerjee in Bull. Bot. Surv. India 2 : 102. 1960. *R. affinis* var. *tanguticus* f. *dasycarpus* Maxim. Fl. Tang. 14. 1889. *R. affinis* (auct non R. Br.) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 18 1872.

A herb upto 30 cm. Radical leaves reniform, lobed to the middle or base, cauline with narrower segments, upper entire or 3-5 partite. Flowers yellow.

*Fl. & Fr.* : July October.

Chamba (RRL), Kulu (LWG).

Inner ranges of the temperate and alpine Himalaya from Kashmir to Sikkim.

**Ranunculus diffusus** DC. Proder. 1 : 38. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 19 1872 ; Collett, Fl. Siml. 10 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 270 1972 ; Nair, Fl. Bash. Himal. 13 1977.

Perennial herb. Stem and leaves hairy. Flowers yellow. Achenes glabrous, minutely dotted.

*Fl. & Fr.* : May October.

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

Temperate Himalaya from Kashmir to Bhutan.

**Ranunculus hirtellus** Royle ex. D. Don in Royle, Ill. Bot. Himal. Mount. 53 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 18. 1872 ; Collect, Fl. Siml. 9 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 270 1972 ; Nair, Fl. Bash. Himal. 13 1977.

Erect or decumbent herb. Radical leaves reniform, lateral segments often deeply 2 lobed, cauline palmately 3 partite. Flowers yellow.

*Fl. & Fr.* : March August.

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

Temperate alpine Himalaya.

**Ranunculus hyperboreus** Rottb. Skiff. Kgoeb. Selsk 10 : 458. 1770 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 18. 1872 ; Collect, Fl. Siml. 10. 1972 ; Rau, High Alt. Fl. Plants 59. 1975.

Creeping on moist ground. Leaves 3 lobed to the middle, base rounded or cuneate. Flowers yellow.

*Er. & Fl.* : July October.

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

**Ranunculus hyperboreus** Rottb. var. **natans** (C. A. Meyer) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 18. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 270. 1972 ; Rau, High Alt. Fl. Plants 59. 1975. *R. natans* C. A. Meyer in Ledeb. Fl. Act. 2 : 315. 1830.

Aquatic herb with floating reniform, 5-7 lobed leaves, Flowers yellow.

*Fl. & Fr.* : June - November.

Alpine Himalaya.

**Ranunculus laetus** Wall. ex D. Don in Royle, Ill. Bot. Himal. Mount. 53. 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 19. 1872 ; Rau, High Alt. Fl. Plants 59. 1975 ; Nair, Fl. Bash. Himal. 14. 1977. *R. distans* Royle, Ill. Bot. Himal. Mount. 53. 1834.

Perennial herb. Root stock woody, usually much branched. Basal leaves long stalked. Flowers yellow. Sepals villous.

*Fl. & Fr.* : April - September.

Chamba (BSD, CAL), Kangra (CAL, CDRL, DD, RRI), Kinnaur (BSD, CAL), Kulu (BSD, BSIP, CAL, LWG, RRL), Lahul & Spiti (BSD, CAL, RRL), Mandi (BSIP, DD, LWG), Simla (BSIP, CAL, LWG).

Temperate Himalaya.

**Ranunculus lingua** L. Sp. Pl. 549. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 16. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 271. 1972.

Tall erect, glabrous herb. Root stock creeping stem hollow. Flowers sub panicled.

*Fl. & Fr.* : July - September.

Lahul and Spiti (CAL, DD).

Kashmir to Himachal Pradesh.

**Ranunculus lobatus** Jacq. ex Camb. in Jacq. Voy. Indi. 4. t. 1B. 1844 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 17. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 271. 1972 ; Rau, High Alt. Fl. Plants 59. 1975.



Decumbent herb. Radical leaves long petioled, rounded or cordate at the base, cauline often 3 toothed.

*Fl. & Fr.* : June September.

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

Alpine Himalaya in the inner valleys from Zanskar to Sikkim.

**Ranunculus longicaulis** C. A. Meyer in Ledeb. Icon. Pl. 2. t. 3. 1830 ; Stewart Ann. Cat. Vas. Pl. W. Pak. & Kash. 274. 1972. *R. pulchellus* C. A. Meyer var. *longicaulis* (C. A. Meyer) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 17. 1872.

Small herb.

*Fl. & Fr.* : August - September .

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

Alpine Himalaya.

**Ranunculus meinshausenii** Schrenk in Bull. Phys. Maths. Acad. Petersb. 3 : 309. 1845 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 274. 1972.

*Fl. & Fr.* : June August.

Lahul and Spiti (CAL).

Western Himalaya.

**Ranunculus munroanus** J. R. Drumm. ex Dunn in Kew Bull. 1925. 279. 1925 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 271. 1972 ; Rau, High Alt. Fl. Plants 59. 1975.

*Fl. & Fr.* : June - September.

Lahul and Spiti (DD, RRL).

Western Himalaya and Nepal.

**Ranunculus muricatus** L. Sp. Pl. 555. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 20. 1872.

Annual herb. Flowers solitary and leaf opposed or terminal and paniced. Sepal reflexed, rather shorter than the petals. Achenes in large globose head.

*Fl. & Fr.* : May August.

The plants are used in intermittent fever, gout and asthma.

Kangra (RRL), Kulu (LWG), Lahul and Spiti (BSD), Una (BSD).  
North Western Himalaya.

**Ranunculus palmatifidus** H. Riedl. in Kew Bull. 34 (2) : 362 63. 1979.

Lahul and Spiti (besed on Baksh specimen in J. R. Drummond Herbarium No. 8296.)

**Ranunculus pangienses** Wall. in Journ. Linn. Soc. 18 : 337. 1881 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 275. 1972.

*Fl. & Fr.* : July October.

Chamba (Stewart, 1972).

North Western Himalaya.

**Ranunculus pulchellus** C. A. Mey. in Ledeb. Fl. Alt. 2 : 333. 1830 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 17. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 272. 1972 ; Rau, High Alt. Fl. Plants 59. 1975 ; Nair, Fl. Bash. Himal. 14. 1977.

Small herb. Leaves glabrous or slightly pubescent, cauline lanceolate, often entire. Flowers yellow.

*Fl. & Fr.* : June October.

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

Alpine Himalaya from Kashmir to Sikkim.

**Ranunculus pulchellus** C. A. Mey. var. **membranaceus** (Royle) Mukerjee in Bull. Bot. Surv. India 2 : 104. 1960. *R. pulchellus* C. A. Mey. var. *sericeus* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 17. 1872.

Small herb. Leaves densely silky.

*Fl. & Fr.* : June December.

Kinnaur (CAL, DD).

Alpine Himalaya.

**Ranunculus sceleratus** L. Sp. Pl. 551. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 19. 1872 ; Collett, Fl. Siml. 10. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 273. 1972 ; Nair, Fl. Bash. Himal. 14. 1977.

Annual, erect herb in moist places. Stem fleshy and branched. Flowers yellow. Sepals reflexed. Receptacle oblong, hairy.

*Fl. & Fr.* : May October.

The plant is poisonous and produces violent effect if taken internally.

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

River banks in Northern and Eastern India and warm valleys of Himalaya.

**Ranunculus trichophyllus** Chaix in Vill. Hist. Pl. Dauph. 1 : 335. 1786 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 273. 1972. *R. aquatilis* L. var. *trichophyllus* (Chaix) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 16. 1872 ; Rau, High Alt. Fl. Plants 58. 1975.

A submerged aquatic in fast flowing water. Leaves finely dissected. Tepals creamy white or yellow.

*Fl. & Fr.* : May August.

Kinnaur (BSD, CAL), Simla (CAL).

North - Western India.

**Thalictrum alpinum** L. Sp. Pl. 545. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 12. 1872 ; Rau, High Alt. Fl. Plants 59. 1975 ; Nair, Fl. Bash. Himal. 14. 1977. *T. marginatum* Royle, Ill. Bot. Himal. Mount. 51. 1834.

Perennial alpine herb upto 15 cm high. Leaves all radical, pinnate, rarely 2 pinnate. Flowers greenish to purple.

Chamba (BSD, CAL), Kangra (BSIP), Lahul & Spiti (BSD, CAL, DD), Simla (BSD, DD).

Alpine Himalaya.

**Thalictrum chelidonii** DC. Prodr. 1 : 11. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 11. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 275. 1972.

Usually much branched herb. Stem 2-8 flowered. Flowers lilac or purple.

*Fl. & Fr.* : June September.

Kulu (DD).

Temperate Himalaya from Kashmir to Sikkim.

**Thalictrum cultratum** Wall. Pl. As. Rar. 2 : 26. 1831 ; Hook. f. & Thoms. in Hook. f. Fl. India 1 : 11. 1872. *T. platycarpum* Hook. f. & Thoms. Fl. Ind. 1 : 13. 1855 et in Hook. f. Fl. Brit. India 1 : 11. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 276. 1972. *T. cultratum* ssp. *platycarpum* (Hook. f. & Thoms.) Bruhl in Ann. Bot. Gard. Calcutta 5 : 72. 1896 ; Nair, Fl. Bash. Himal. 15. 1977.

Glabrous herb. Flowers greenish-white.

*Fl. & Fr.* : July September.

Chamba (RRL), Kangra (BSIP), Kinnaur (BSD, DD), Kulu (DD).  
Temperate Himalaya.

**Thalictrum elegans** Wall. ex Royle, Ill. Bot. Himal. Mount. 51. 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 10. 1872 ; Collett, Fl. Siml. 6. 1902 ; Nair, Fl. Bash. Himal. 15. 1977.

Erect herb. Leaves decomposed, leaflets small. Flowers green-purple. Achenes laterally compressed.

*Fl. & Fr.* : August October.

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

Alpine Himalaya from Kashmir to Sikkim.

**Thalictrum foetidum** L. Sp. Pl. 545. 1753 ; Rau, High Alt. Fl. Palnts 59. 1975 ; Nair, Fl. Bash. Himal. 15. 1977. *T. minus* L. var. *foetidum* (L) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 14. 1872. *T. vaginatum* Royle, Ill. Bot. Himal. Mount. 52. 1834 ; Stewart, Ann. Cat. Vas. P. W. Pak. & Kash. 277. 1972.

Erect herb. Leaves pinnately decomposed, glandular pubescent beneath. Panicle light purple.

*Fl. & Fr.* : May September.

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

Temperate and alpine Himalaya.

**Thalictrum foliolosum** DC. Syst. Nat. 1 : 175. 1817 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 14. 1872 ; Collett, Fl. Siml. 8. 1902 ; Nair, Fl. Bash. Himal. 15. 1977. *T. falconeri* Lecoyer in Bull. Soc. Bot. Belg. 24 : 264. 1885. et Monogr. Thalict. 117 & 196. t. f. 12. 1885.

Purplish-green, tall herb. Leaves pinnately compound. Tepals green or pale-purple.

*Fl. & Fr.* : June October.

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

Temperate Himalaya and Khasia hills.

**Thalictrum javanicum** Blume, Bijdr. 2. 1825 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 13. 1872 ; Collett, Fl. Siml. 8. 1902 ; Nair, Fl. Bash. Himal. 16. 1977. *T. glyphocarpum* Wt. et Arn. Prod. 2. 1834.

Tall, erect herb, panicle branched, many. Tepals green white, white or pink. Achenes strongly ribbed.

*Fl. & Fr.* : June September.

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

Temperate Himalaya, from Himachal Pradesh to Sikkim.

**Thalictrum minus** L. Sp. Pl 546. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 14. 1872. var. **minus**.

Herb. Leaves decompositely pinnate. Achenes tapering at both ends.

*Fl. & Fr.* : May August.

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

Inner valleys of temperate Himalaya.

**Thalictrum minus** L. var. **majus** (Crantz.) Crepin, Man. Fl. Belg. ed. 4. 5. 1885. *T. majus* Crantz. Strip. Austr. 2 : 80. 1763. *T. minus* ssp. *majus* (Crantz.) Rouy. & Fouc. Fl. Fr. 1 : 16. 1893 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 276. 1972. *T. minus* var. *majus* (Jacq.) Hook. f. & Thoms. Fl. Ind. 17. 1855 et in Hook. f. Fl. Brit. India 1 : 14. 1872 ; Rau, High Alt. Fl. Plants 59. 1975 ; Nair, Fl. Bash. Himal. 15. 1977. *T. maxwellii* Royle, Ill. Bot. Himal. Mount 52. 1834. *T. elatum* sensu Boiss. Fl. Orient. 1 : 7. 1867.

Erect glabrous herb, often glaucous.

*Fl. & Fr.* : June October.

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

Temperate alpine Himalaya.

**Thalictrum pedunculatum** Edgew. in Trans. Linn. Soc. 20 : 27. 1846 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 12. 1872 ; Collett, Fl. Siml. 7. 1902 ; Stewart, Ann. Cat. Vas. Pl. 176. 1972 ; Nair, Fl. Bash. Himal. 16. 1977.

Glabrous herb. Leaves 3 ternate. Flowers white.

*Fl. & Fr.* : April August.

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

***Thalictrum reniforme*** Wall. Pl. As. Rar. 2 : 26. 1831 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 11. 1872 ; Nair, Fl. Bash. Himal. 16. 1977. *T. neurocarpum* Royle, Ill. Bot. Himal. Mount. 51. 1834 ; Collett, Fl. Siml. 7. 1902 *T. chelidonii* var *reniforme* Hook. f. & Thoms. in Fl. Ind. 13. 1855.

Usually much branched herb. Stem hollow. Panicle lax, decomposed. Tepals green.

*Fl. & Fr.* : June September.

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

Temperate Himalaya from Himachal Pradesh to Sikkim.

***Thalictrum rostellatum*** Hook. f. & Thoms. in Fl. Ind. 13. 1855 et in Hook. f. Fl. Brit. India 1 : 12. 1872 ; Nair, Fl. Bash. Himal. 17. 1977.

Diffusely branched herb upto 1 m high. Tepals white.

*Fl. & Fr.* : June August.

Simla (CAL, DD).

Temperate Himalaya from Himachal Pradesh to Sikkim.

***Thalictrum saniculaefromae*** DC. Prodr. 1 : 12. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 13. 1872 ; Collett, Fl. Siml. 8. 1902 ; Nair, Fl. Bash. Himal. 17. 1977. *T. radiatum* Royle, Ill. Bot. Himal. Mount 52. 1834.

Small herb. Leaves subsolitary, 3 4 ternate. Tepals white. Achenes sessile, oblong.

*Fl. & Fr.* : June September.

Kinnaur (CAL), Simla (DD).

Temperate Himalaya, from Himachal Pradesh to Sikkim.

***Thalictrum secundum*** Edgew. in Trnas. Linn. Soc. 20 : 26. 1846 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 277. 1972. *T. pauciflorum*

Royle, Ill Bot. Himal. Mount 52. 1834. (non Rafin, 1832) ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 11. 1872 ; Rau, High Alt. Fl. Fl. Plants 59. 1975 ; Nair, Fl. Bash. Himal. 16. 1977.

Glabrous herb. Flowers purple.

*Fl. & Fr.* : July September.

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

Western Himalaya from Kashmir to Kumaon.

**Trollius acaulis** Lindl. Bot. Reg. 28 : misc. 56. 1842 ; Hook. f. & Thoms. in Fl. Ind. 41 1855 et in Hook. f. Fl. Brit. India 1 : 22 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 277. 1972 ; Rau, High Alt. Fl. Plants 59. 1975. *T. pumilus* Royle, Ill. Bot. Himal. Mount. 54. 1834 (non D. Don).

Scapigerous herb. Leaves appearing with or after the flowers. Flowers bright yellow.

*Fl. & Fr.* : June October.

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

Western alpine Himalaya, from Kashmir to Kumaon.

## PAEONIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Paeonia emodi** Wall. ex Royle, Ill. Bot. Himal. Mount. 57. 1834 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 30. 1872 ; Collett, Fl. Siml. 15. 1902 ; Rau in Fl. India Fasc. 1 : 5. 1978 ; Nasir in Flora W. Pak. 121 : 1. 1978. *P. emodi* var. *glabrata* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 30. 1872 ; Nasir in Fl. W. Pak. 121 : 3. 1978.

Robust, perennial herbs. Flowers white. Follicles strigose with yellow brown hairs.

*Fl. & Fr.* : April September.

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

Western temperate Himalaya.



## MAGNOLIACEAE

H. J. CHOWDHERY, R. PRASAD AND B. M. WADHWA

**Liriodendron tulipifera** L. Sp. Pl. 535. 1753 ; Parker, For. Fl. Punj. ed. 3. 6. 1956 ; Nair, Fl. Bash. Himal. 18. 1977.

Large deciduous tree. Leaves trilobed. Flowers tulip shaped, greenish - yellow, fragrant. Fruit brown, narrow, cone like.

*Fl. & Fr.* : April August.

Simla (DD).

Indigenous to the United States of America and has been introduced in Simla.

**Magnolia hodgsonii** (Hook. f. & Thoms.) Keng in Gard. Bull. Singapore 31 (2) : 127 131. 1978. *Talauma hodgsonii* Hook. f. & Thoms. Fl. Ind. 1 : 74. 1855 et in Hook. f. Fl. Brit. India 1 : 40. 1872 ; D. C. S. Raju in Rec. Bot. Surv. India 20 (2) : 29. 1973.

Evergreen Lofty tree. Flowers white, odorous.

*Fl. & Fr.* : May September.

Kulu (DD)

Sikkim eastwards to Khasis Hills & Himachal Pradesh.

**Magnolia hypoleuca** Sieb. & Zucc. in Abh. Akad. Muench. 4. 2 : 187. 1843 ; Bailey, Stand. Cycl. Hort. 2 : 1967. 1928 29.

Lofty tree with pyramidal head. Leaves obovate -oblong, appressed pubescent beneath. Flowers cup shaped, fragrant.

*Fl. & Fr.* : April June.

Kulu (DD).

Planted for beautiful fragrant flowers.

**Michelia champaca** L. Sp. Pl. 536. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 42. 1872 ; Parker, For. Fl. Punj. ed. 3. 5.

1956 ; Khanzada et Khan in Fl. W. Pakist. 64 : 1. 1974 ; Nair, Fl. Bash. Himal. 18. 1977.

Evergreen lofty tree. Leaves ovate lanceolate. Flowers solitary, axillary, pale or orange, very fragrant.

*Fl. & Fr.* : May July.

Simla (DD).

Commonly planted and also wild in the temperate Himalayan forests.

### CALYCANTHACEAE

B. M. WADHWA AND R. PRASAD

**Chimonanthus fragrans** Lindl. Bot. Reg. sub. t. 451. 1820 ; Nair, Fl. Bash. Himal. 17. 1977.

Shrub. Flowers sweet fragrant.

*Fl. & Fr.* : February March.

Simla (DD).

Planted for its flowers.

### SCHISANDRACEAE

H. J. CHOWDHERY

**Schisandra grandiflora** (Wall.) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 44. 1872 ; Collett, Fl. Siml. 16. 1902 ; Nair, Fl. Bash. Himal. 17. 1977. *Kadsura grandiflora* Wall. Tent. Fl. Nepal. 10. t. 14. 1824.

A woody, glabrous climber. Flowers solitary, pinky - white, odorous.

*Fl. & Fr.* : May June.

Kinnaur (CAL, DD), Simla (CAL, DD).

Temperate Himalaya, from Himachal Pradesh to Bhutan.

## MENISPERMACEAE

B. M. WADHWA, R. PRASAD AND H.J. CHOWDHERY

**Cissampelos pareira** L Sp. Pl. 1031. 1753 var. **hirsuta** (DC.) Forman in Kew Bull. 22 : 356. 1968. *C. hirsuta* DC. Syst. Nat. 1 : 535. 1817. *C. pareira* sensu Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 103. 1872 ; Collett, Fl. Siml. 19. 1902 ; Parker, For. Fl. Punj. ed. 3. 10. 1956 ; Nair, Fl. Bash. Himal. 18. 1977.

Climbing herbs. Male flower green or greenish yellow.

*Fl. & Fr.* : April September.

Chamba (DD), Hamipur (BCD), Kangra (BSD, DD), Sirmur (CAL), Una (BSD).

Tropical and subtropical parts of India.

**Cocculus laurifolius** DC. Syst. Nat. 1 : 530. 1817 et Prodr. 1 : 100. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit India 1 : 101. 1872 ; Collett, Fl. Siml. 18. 1902 ; Parker, For. Fl. Punj. ed. 3. 8. 1956 ; Nair, Fl. Bash. Himal. 18. 1977.

Large shrubs or small trees. Flowers in axillary panicle. Bracts and flower minute, greenish.

*Fl. & Fr.* : April - May.

Kinnaur (DD), Simla (DD), Sirmur (BSD), Chamba (CAL).  
Subtropical Himalaya, from Kashmir to Nepal.

**Cocculus pendulus** (J. R. & G. Forst.) Diels in Engle. Pflanzenr. IV Heft. 46. 237. 1910 ; Siddiqi in Fl. W. Pak. 74 : 7. 1974. *Epibatrium pendulum* J. R. & G. Forst. Char. Gen. 108. t. 54. 1776. *Cocculus laeba* (Del.) DC. Syst. Nat. 1 : 529. 1817 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 102. 1872 ; Collett, Fl. Siml. 18. 1902 ; Parker, For. Fl. Punj. ed. 3. 8. 1956. *Menispermus laeba* Del. Fl. Egypt ed. 2. 184. 1824.

Grey pubescent, climbing shrub. Male flowers in axillary clusters, sessile. Female flowers 1-3, in short axillary stalks. Fruits dark purple.

*Fl. & Fr.* : Almost throughout the year.

**Stephania elegans** Hook. f. & Thoms. Fl. Ind. 1 : 195. 1855 et in Hook. f. Fl. Brit. India 1 : 103. 1872 ; Stewart. Ann. Cat. Vas. Pl. W. Pak. & Kash. 283. 1972.

Extensive herbaceous twiner. Flowers purple or greenish. Odour heavy. Drupe small, red.

*Fl. & Fr.* : July - December.

Kangra (BSD), Mandi (BSD), Simla (CAL).

Subtropical Himalaya from Himachal Pradesh to Sikkim.

**Stephania glabra** (Roxb.) Miers in Ann. Nat. Hist. ser. 18. 3 : 14. 1866 et Contrib. Bot. 3 : 217. 1871. *Cissampelos glabra* Roxb. Fl. Ind. 3 : 840. 1872. *Stephania rotunda* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 103. 1872 (non Lour.) ; Collett, Fl. Siml. 39. 1902 ; Nair, Fl. Bash. Himal. 18. 1977.

Large herbaceous climbers. Flowers greenish - white to greenish yellow.

*Fl. & Fr.* : May - October.

Hamirpur (BSD), Simla (CAL, DD).

Tropical & temperate Himalaya.

**Tinospora cordifolia** (Willd.) Miers in Ann. Nat. Hist. Ser. 2.7 : 38. 1851 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 97. 1872 ; Parker, For. Fl. Punj. ed. 3. 9. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 283. 1972.

Climber leafless during flowering. Flowers green - yellowish, green.

*Fl. & Fr.* : March - June.

Throughout India.

## BERBERIDACEAE

H. J. CHOWDHERY, B. P. UNIYAL AND B. M. WADHWA

**Berberis apiculata** (Ahrendt) Ahrendt in Journ. Linn. Soc. 57 : 135. 1961. *B. usteriana* var. *apiculata* Ahrendt. in Journ. Asia. Soc. Beng. 11 (3) : 3. 1945 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 281. 1972.

Stem subterete, yellow. Leaves with open veins. Inflorescence sub-umbellate, 5 8 flowered.

Simla (BM, Ahrendt 1961).

Western Himalaya.

**Berberis asiatica** Roxb. ex DC. Syst. Nat. 2 : 13. 1821 (non Griffith) ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 110. 1872 ; Ahrendt in Journ. Linn. Soc. 57 : 86. 1961.

Shrub. Pedicels slender, red. Berries black, pruinose white.

*Fl. & Fr.* : March June.

Simla (CAL), Sirmur (BSD).

Dry valleys of the Himalaya, Himachal Pradesh to Bhutan.

**Berberis brandisiana** Ahrendt in Journ. Asia. Soc. Beng. (11 (3) : 2. 1945 et in Journ. Linn. Soc. 57 : 106. 1961 ; Jafri in Fl. W. Pak. 87 : 14. 1975.

Shrub. Stem dark red, spines absent or solitary. Berries red.

Simla (K, Ahrendt, 1961).

Western Himalaya.

**Berberis ceratophylla** G. Don, Gen. Syst. 1 : 115. 1831 ; Ahrendt in Journ. Linn. Soc. 57 : 100. 1961. *B. aristata* var. *floribunda* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 110. 1872.

Shrub, stem sulcate, pale yellowish - grey. Berries dark red - purple.

*Fl. & Fr.* : May - August.

Chamba (RRL), Kangra (DD), Kulu (DD), Lahul & Spiti (DD).  
Western Himalaya.

**Berberis chitria** Lindl. in Bot. Reg. 9 : t. 729. 1823 ; Ahrendt in Journ. Bot. London 80 (Suppl.) 85. 1942 ; Parker, For. Fl. Punj. ed. 3. 12. 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 97. 1961 ; Jafri in Fl. W. Pak. 87 : 14. 1975. *B. aristata* Hook. f. & Thoms. (non. DC.) in Hook. f. Fl. Brit. India 1 : 110. 1872 *p.p.* ; Collett, Fl. Siml. 21. f. 8. 1902. *B. chitria* var. *occidentalis* Ahrendt in Journ. Bot. London 80 (Suppl.) 85. 1942 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 278. 1972.

Shrub. Flowers mildly fragrant. Berries dark red brown, epruinose.  
*Fl. & Fr.* ; May September.

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

Western Himalaya.

**Berberis coriaria** Royle ex Lindl. in Bot. Reg. 27. t. 46. 1841 ; Ahrendt in Journ. Bot. London 80 (Suppl.) : 91. 1942 et Journ. Linn. Soc. 57. 102. 1961 ; Nair, Fl. Bash. Himal. 19. 1977. var. *coriaria*. *B. aristata* Hook. f. & Thoms. in Hook. f. Fl. Brit. India. 1 : 110. 1872. *p.p.*

Shrub. Stem pale yellow. Leaf margin entire. Berries red, epruinose.

*Fl. & Fr.* : May August.

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

Western Himalaya and Nepal.

**Berberis coriaria** Royle ex Lindl. var. *patula* Ahrendt in Journ. Bot. London 80 (Suppl.) : 41. 1942 et Journ. Linn. soc. 57 : 102. 1961 ; Nair, Fl. Bash. Himal. 19. 1977.

Shrub. Racemes lax, pedicels 6 12 mm. Flowers with faint colour.

*Fl. & Fr.* : June July.

Chamba (BSD).

Western Himalaya.

**Berberis edgeworthiana** Schneid. Bull. Herb. Boiss. ser. 2. 8 : 263. 1908 ; Parker, For. Fl. Punj. ed. 3. 13. 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 211. 1961 ; Nair, Fl. Bash. Himal. 19. 1977. *B. brachybotrys* Edgew. in Trans. Linn. Soc. 19 : 46 1845 (non C. Gay). *B. vulgaris* var. *brachybotrys* Hook. f. & Thoms. in Hook f. Fl. Brit. India 1 : 109. 1872 ; Collett, Fl. Siml. 21. 1902.

Shrub. Stem pale yellow black, verruculose. Berries orange - red, estylose.

*Fl. & Fr.* : May July.

Chamba (K), Simla (K).

Himalaya from Kashmir to Sikkim.

Note : K. Browicz in Rech. f. Fl. Iran. 111 : 7. 1975 has treated this species as synonym to *B. kunawurensis* Royle.

**Berberis glaucocarpa** Stapf in Bot. Mag. 151.sub. t. 9102. in obs. 1926 ; Ahrendt in Journ. Linn. Soc. 57 : 90. 1961 ; Jafri in Fl. W. Pak. 87 : 13. 1975. *B. aristata* sensu Parker, For. Fl. Punj. ed. 3. 14. 1956 (non DC.). *B. caritaria* sensu Collett, Fl. Siml. 22. 1902. (non Royle).

Shrub. Stem pale yellow. Spines mostly solitary. Berries black, pruinose.

*Fl. & Fr.* : May July.

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

Western Himalaya and Nepal.

**Berberis himalaica** Ahrendt in Journ. Bot. London 79 (Suppl.) 68. 1942 et in Journ. Linn. Soc. 57 : 137. 1961 ; Nair, Fl. Bash. Himal. 20. 1977.

Shrub. Stem subterete. Stigma sessile. Berries ovoid.

*Fl. & Fr.* : June - July.

Kinnaur (BSD).

Western Himalaya.

**Berberis jaeschkeana** Schneid. in Bull. Herb. Boiss. Ser. 2. 5 : 399. 1905 ; Parker, For. Fl. Punj. ed. 3. 13. 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 138. 1961 ; Jafri in Fl. W. Pak. 87 : 16. 1975 ; Nair, Fl. Bash. Himal. 20 : 1977.

Shrub. Stem angled, greyish. Berries red, shortly stylose.

*Fl. & Fr.* : June September.

Chamba (DD, K), Kinnaur (BSD, DD), Kulu (DD, LWG), Lahul and Spiti (BSD, CAL, DD, K), Mandi (LWG).

Western Himalaya and Nepal.

**Berberis kunawurensis** Royle, Ill. Bot. Himal. Mount. 64. 1836 ; Parker, For. Fl. Punj. ed. 3. 13. 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 211. 1961 ; Nair, Fl. Bash. Himal. 20. 1977. *B. vulgaris* var. *aetnesis* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 109. 1872.

Small shrub. Stem glabrous, red brown to yellowish red. Berries oblong, shortly stylose.

*Fl. & Fr.* : June July.

Chamba (Ahrendt, 1961), Kinnaur (BSD), Simla (Ahrendt, 1961).

Western Himalaya.

**Berberis lycium** Royle in Trans. Linn. Soc. 17 : 94. 1834 et Ill. Bot. Himal. Mount. 1 : 64. 1839 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 110. 1872 ; Collett, Fl. Siml. 22. 1902 ; Parker, For. Fl. Punj. ed. 3. 14. 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 87. 1961 ; Jafri in Fl. W. Pak. 87 : 10. 1975 ; Nair, Fl. Bash. Himal. 20. 1977. var. **lycium**.

Shrub. Leaves generally entire, sometimes 1 2 spinulose. Fruits when young glaucous green, mature blue black.

*Fl. & Fr.* : April July.

Chamba (BSD, CAL, CDRI), Kangra (BSD, CAL, LWG), Kinnaur (BSD, CAL), Kulu (BSD, CAL, LWG), Simla (BSD, CAL, LWG), Sirmur (BSD).

Himalaya, Kashmir to Nepal.

**Berberis lycium** Royle var. **simlensis** Ahrendt in Journ. Asia. Soc. Beng. 11 (3) : 1. 1945 et in Journ. Linn. Soc. 57 : 88. 1961. *B. lycium* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 110. 1872. *p. p.*

Shrub. Stem pubescent. Inflorescence racemose.

*Fl. & Fr.* : April May.



Simla (K, Ahrendt 1961).

Western Himalaya.

**Berberis lycium** Royle var. **subfascicularis** Ahrendt in Journ. Linn. Soc. 57 : 88. 1961 ; Nair, Fl. Bash. Himal. 20. 1977. *B. lycium* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 110. 1872. *p. p.*

Shrub. Stem glabrescent. Inflorescence subflacid.

*Fl. & Fr.* : March May.

Kinnaur (BSD).

Western Himalaya.

**Berberis pachyacantha** Koehne, Deutsche Dendrologie 170. 1893 ; Parker, For. Fl. Punj. ed. 3. 12 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 191. 1961 ; K. Browicz in Rech. f. Fl. Iron. III : 8. 1975 ; Jafri in Fl. W. Pak. 87 : 21. 1975. *B. petrolaris* Parker, (non Wall. ex G. Don) For. Fl. Punj. ed. 3. 12. 1956. ssp. **pachyacantha**.

Shrub. Stem dark red. Berries red, estylose, epruinose.

*Fl. & Fr.* : April July.

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

Western Himalaya.

**Berberis pachyacantha** Koehne ssp. **zabeliana** (Schneid.) Jafri in Fl. W. Pak. 87 : 21. 1975. *B. zabeliana* Schneid. in Bull. Herb. Boiss. ser. 2. 5 : 667. 1905 ; Parker, For. Fl. Punj. ed. 3. 12. 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 184. 1961 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 280. 1972 ; Nair, Fl. Bash. Himal. 21. 1977.

Shrub. Stem angled or sulcate, spines sometimes absent. Flowers small on short pedicels. Petals slightly shorter than the inner sepals. Berries oblong, obovoid.

*Fl. & Fr.* : April July.

Kinnaur (DD), Simla (DD).

Western Himalaya.

**Berberis pseudumbellata** Parker in Kew Bull. 1921 : 118. 1921 et For. Fl. Punj. ed. 3. 15. 1956 ; Ahrendt in Journ. Linn. Soc. 57 : 226. 1961 ; Jafri in Fl. W. Pak. 87 : 24. 1975 ; Nair, Fl. Bash. Himal. 20. 1977.

*B. umbellata* auct. (non Wall. ex G. Don) Parker, For. Fl. Punj. ed. 3. 15. 1918.

Shrub. Stem dark red to dark brown. Flowers blue, pruinose.

*Fl. & Fr.* : April July.

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

Western Himalaya.

**Berberis ulcina** Hook. f. & Thoms. Fl. Ind. 227. 1855 et in Hook. f. Fl. Brit. India 1 : 111. 1872 ; Ahrendt in Journ. Linn. Soc. 57. 228. 1961 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 280. 1972.

Shrub. Stem glabrous, much branched, densely spiny, reddish brown. Leaves linear lanceolate or narrowly oblanceolate, often entire to 1 2 spinulose. Inflorescence 3 6 flowered, fascicled. Berries globose.

*Fl. & Fr.* : May-July.

Lahul and Spiti (RRL).

Western Himalaya.

**Berberis umbellata** Wall. ex G. Don, Gen. Syst. 1 : 116. 1831 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 110. 1872 ; Ahrendt in Journ. Linn. Soc. 57. 104. 1961 ; Nair, Fl. Bash. Himal. 21. 1977.

Shrub. Stem red brown. Berries violet with ashy bloom.

*Fl. & Fr.* : May - June.

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

Himalaya, Kashmir to Bhutan.

**Berberis vulgaris** L. Sp. Pl. 330. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 109. 1872 ; Ahrendt in Journ. Line. Soc. 57 : 188. 1961 ; Nair, Fl. Bash Himal. 21. 1975.

Shrub. Stem yellow. Barries red, estylose.

*Fl. & Fr.* : June July.

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

Western Himalaya.

**Mahonia borealis** Takeda in Notes Roy. Bot. Gard. Edinb. 6 : 221. 1917; Ahrendt in Journ. Linn. Soc. 57 : 307. 1961 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 281. 1972. *B. nepalensis* auct. [non (DC.) Spreng.] Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 109. 1872.

Shrub. Leaflets in 5 9 pairs. Inflorescence racemose. Berries globose ovoid, blue, pruinose.

*Fl. & Fr.* : April June.

Chamba (DD, LWG).

Himalaya, Kashmir to Sikkim and Assam.

**Nandina domestica** Thunb. Fl. Jap. 9. 1784 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 281. 1972.

Shrub. Leaves entire, reddish tinged, petioles swollen at base, red. Flowers small, white. Berries red, in clusters, terminating the branches.

*Fl. & Fr.* : May August.

Simla (DD).

Planted in gardens, ornamental.

## PODOPHYLLACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Phodophyllum hexandrum** Royle, Ill. Bot. Himal. Mount 64. 1834 ; Cambess. in Jacq. Voy. Bot. Ind. 10. t. 9. 1844 : K. Browicz in Rech. f. Fr. Iran. 101 : 2. 1973. *P. emodi* Wall. ex Royle, Ill. Bot. Himal. Mount 64. 1834 nom. Seminud. 379 in nota (1839) ; Hook. f.

& Thoms. in Hook. f. Fl. Brit. India 1: 112. 1872 ; Collett, Fl. Siml. 22. 1902 ; Chatterjee & Mukerjee in Rec. Bot. Serv. India 16 (2) : 45. 1953 ; Nair, Fl. Bash. Himal. 21. 1977.

Scapigerous herb, rootstock creeping. Flowers pale white or pink. Young fruits green turning red on maturity.

*Fl. & Fr.* : May - September.

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

Interior ranges of Himalaya.

**Podophyllum hexandrum** Royle var. **jaeschkei** (Chatterjee & Mukerjee) Browicz in Rech. f. Fl. Iran. 101 : 2. 1973. *P. emodi* var. *jaeschkei* Chatterjee & Mukerjee in Rec. Bot. Surv. India 16 (2) : 47. 1953.

Small herb. Leaves very shortly petioled. Flowers pink to white.

*Fl. & Fr.* : March - July.

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

North - Western Himalaya.

## LARDIZABALACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Holboellia latifolia** Wall. Tent. Fl. Nep. 24. t. 16. 1824 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 108. 1872 ; Parker, For. Fl. Punj. ed. 3. 16. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 277. 1972.

Climber with palmate leaves. Flowers monoecious, greenish purple.

*Fl. & Fr.* : April - July.

Chamba (Parker, 1956).

Himalaya, Himachal Pradesh to Assam.

## PAPAVERACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Argemone mexicana** L. Sp. Pl. 508. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 117. 1827 ; Collett, Fl. Siml. 23. 1902 ; Jafri & Qaiser in Fl. W. Pak. 61 : 20. 1974.

Prickly herbs with yellow latex. Flowers bright yellow.

*Fl. & Fr.* : July September.

Una (BSD).

Throughout India, weed.

**Hypecoum leptocarpum** Hook. f. & Thoms. Fl. Ind. 276. 1855 et in Hook. f. Fl. Brit. India 1 : 120. 1872 ; Prain in J. As. Soc. Bengal 11. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 285. 1972.

Herbs with procumbent, much branched stems. Flowers pale purple or pink red with purple streaks.

*Fl. & Fr.* : June September.

Chamba (DD).

Western Himalaya and Nepal.

**Meconopsis aculeata** Royle, Ill. Bot. Himal. Mount 67. t. 15. 1833 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 118. 1872 ; Collett, Fl. Siml. 23. 1902 ; Jafri & Qaiser in Fl. W. Pak. 61 : 24. 1974 ; Nair, Fl. Bash. Himal. 21. 1977.

Perennial prickly herb. Radical leaves deeply lobed. Flowers dark purplish - blue in long racemes. Fruits obovate or oblong, prickly.

*Fl. & Fr.* : June September.

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

Himalyan blue poppy. WesternHimalaya.

**Meconopsis robusta** Hook. f. & Thoms. Fl. Ind. 1 : 253. 1855 et in Hook. f. Fl. Brit. India 1 : 118. 1872.

Tall perennial herbs. Pedicles densely clothed with reflexed bristles under the flowers.

*Fl. & Fr.* : July September.

Chamba (DD).

Temperate Himalaya.

**Papaver dubium** L. Sp. Pl. 1196. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 117. 1812 ; Collett, Fl. Siml. 23. 1902 ; Jafri & Quaiser in Fl. W. Pak. 61. 13. 1974 ; Nair, Fl. Bash. Himal. 22. 1977.

Herb with milky latex. Flowers brick red with a basal dark spot. Capsule oblong, narrowed towards the base, distinctly ribbed.

*Fl. & Fr.* : March - June.

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

Western Himalaya and Nepal.

**Papaver rhoeas** L. Sp. Pl. 507. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 117. 1872 ; Collett, Fl. Siml. 23. 1902 ; Jafri & Qaiser in Fl. W. Pak. 61 : 16. 1974.

Annual rarely biennial, hispid - hairy herbs. Flowers usually scarlet. Capsule subglobose, broadly obovoid.

*Fl. & Fr.* : June - July.

Chamba (DD).

Western Himalaya and Nepal. Widely cultivated.

**Papaver somniferum** L. Sp. Pl. 508. 1753 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 117. 1872 ; Collett, Fl. Siml. 23. 1902.

Robust annual herbs. Flowers 5-10 cm in diam., white - pink to rose. Capsule subglobose with a rounded base ending into a short stipe.

*Fl. & Fr.* : May - July.

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

Cultivated. Economically important for alkaloid and also for seeds "Khaskhash".

## FUMARIACEAE

H. J. CHOWDHERY AND B. M. WADHWA

***Corydalis cashmeriana*** Royle, Ill. Bot. Himal. Mount. 69. t. 16. 1833 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 123. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 288. 1972 ; Nair, Fl. Bash.Himal. 22. 1977.

Small, erect herb, root stocks with scaly tips. Flowers blue with dark blue tip.

*Fl. & Fr.* : May - August.

Chamba (BSD, DD), Kulu (DD), Lahul & Spiti (BSD, DD) Kangra (BSIP)

Temperate and subalpine Himalaya, Kashmir to Sikkim.

***Corydalis chaerophylla*** DC. Prodr. 1 : 128. 1824 var. ***geraniifolia*** (Hook. f. & Thoms.) Hara, Fl. East Himal. 103. 1966. *C. geraniifolia* Hook. f. & Thoms. Fl. Ind. 1 : 269. 1855 ; et in Hook. f. Fl. Brit. India 1 : 126. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 33. 1896.

Suberect herb. Flowers golden yellow.

Himalaya.

**Corydalis cornuta** Royle, Ill. Bot. Himal. Mount 69. 1833 ; Hook. f. & Thoms. in Hook. f. Brit. India 1 : 126. 1872 ; Prain in Journ. Asiat. Soc. Bengal 65 : 31. 1896 ; Collett, Fl. Siml. 26. 1902 ; Nair, Fl. Bash. Himal. 22. 1977.

Decumbent herb. Flowers yellow with purple tip.

*Fl. & Fr.* : July November.

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

Temperate Western Himalaya.

**Corydalis crassifolia** Royle, Ill. Bot. Himal. Mount. 68. 1833 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 127. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 41. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 289. 1972.

Glaucous herb with woody rootstock. Flowers white or yellowish with purple spots.

*Fl. & Fr.* : July October.

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

West Tibet and Himalaya.

**Corydalis crassissima** Camb. in Jacquem. Voy. Bot. Ind. 12. t. 11. 1844 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 127. 1872 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 289. 1972.

Herb usually growing in rock crevices. Leaves thick. Flowers purple.

*Fl. & Fr.* : July September.

Lahul and Spiti (BSD).

Western Himalaya.

**Corydalis crithmifolia** Royle, Ill. Bot. Himal. Mount. 68. 1833 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 123. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 26. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 289. 1972 ; Nair, Fl. Bash. Himal. 22. 1977.



Flowers pale-yellow with purple tip.

*Fl. & Fr.* : June - July.

Kinnaur (DD).

Subalpine & temperate Western Himalaya.

**Corydalis diphylla** Wall. Tent. Fl. Nepal. 54. 1824 - 6 ; Prain in Journ. Asiat. Soc. Beng. 65 : 19. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 289. 1972. *C. rutaefolia* Hook. f. Brit. India 1 : 122. 1872 (non Sibth) ; Nair, Fl. Bash. Himal. 23. 1977.

Herb. Flowers brick red- orange with enflated spur.

*Fl. & Fr.* : April - June.

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

Western Himalaya.

**Corydalis duthiei** Maxim. Fl. Tangut. 49. t. 25. f. 12. 17. 1877 ; Prain in Journ. Asiat. Soc. Beng. 65 : 33. 1896.

Tufted, diffuse, glabrous herb. Flowers yellow.

Chamba (Prain, 1896).

Western Himalaya.

**Corydalis elegans** Wall. ex Hook. f. & Thoms. Fl. Ind. 265. 1855 et in Hook. f. Fl. Brit. India 1 : 124. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 33. 1896 ; Stewart, Ann. Cat. Vas. P. W. Pak. & Kash. 292. 1972.

Erect or decumbent herb. Flowers yellow with red spots.

Western Himalaya and Nepal.

**Corydalis falconeri** Hook.f. & t Thoms. in Hook. f. Fl Brit. India 1 : 124. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 26. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 298. 1972 ; Nair, Fl. Bash. Himal. 22. 1977.

Erect herb. Flowers yellow with purple tips.

*Fl & Fr.* : June - August.

Kinnaur (BSD).

Western Himalaya & Western Tibet.

**Corydalis flabellata** Edgew. in Trans. Linn. Soc. 20 : 30. 1846. Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 127. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 40. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 290. 1972.

Regid erect, glaucous herb. Leaves flabellate. Flowers yellow.

Chamba (Prain, 1896)

Western Tibet & Himalaya from Kashmir to Nepal.

**Corydalis govaniana** Wall. Tent. Fl. Nepal. 55. 1824 - 6 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 124. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 33. 1896 ; Collett, Fl. Siml. 25. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 290. 1972 ; Nair, Fl. Bash. Himal. 22. 1977.

Erect herb. Flowers bright yellow.

*Fl. & Fr.* : April August.

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

Western Himalaya and Nepal.

**Corydalis longipes** DC. Proder. 1 : 128. 1824 ; Prain in Journ. Asiat. Soc. Beng. 65 : 28. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 290. 1972 ; Nair, Fl. Bash. Himal. 23. 1977. *C. sibirica* Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 125. 1872 (non Pers.)

Weak herb. Flowers yellow.

*Fl. & Fr.* : April August.

Kinnaur (DD).

Himalaya, Kashmir to Sikkim & Khasia hills.

**Corydalis meifolia** Wall. Tent. Fl. Nepal. 52. t. 41. 1824 - 6 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 126. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 36. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 290. 1972 ; Nair, Fl. Bash. Himal. 23. 1977.

Herb with very leafy stems. Flowers yellow with purple tip.

*Fl. & Fr.* : July September.

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

Himalaya Kashmir to Sikkim.

**Corydalis meifolia** Wall. var. **violacea** Prain in Journ. Asiat. Soc. Beng. 65 : 36. 1896.

Erect herb. Flowers deep mauve or purple.

*Fl. & Fr.* : June August.

Lahul & Spiti (DD).

Western Himalaya.

**Corydalis moorcroftiana** Wall. ex Hook. f. & Thoms. Fl. Ind. 1 : 266. 1855 et in Hook. f. Fl. Brit. India 1 : 125. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 35. 1896 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 290. 1972.

Erect, stout herb. Flowers yellow with purple tip.

*Fl. & Fr.* : June August.

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

Western Himalaya & Western Tibet.

**Corydalis nana** Royle, Ill. Bot. Himal. Mount. 68. 1833 ; Prain in Journ. Asiat. Soc. Beng. 65 : 38. 1896. *C. ramosa* Wall. ex Hook. f. & Thoms. var. *nana* Hook. f. Fl. Brit. India 1 : 125. 1872.

Dwarf herb. Flowers blueish grey with green tips.

Kinnaur (BSD, DD).

Alpine Himalaya Kashmir to Sikkim.

**Corydalis ramosa** Wall. ex Hook. f. & Thoms. Fl. Ind. 1 : 267. 1855 et in Hook. f. Fl. Brit. India 1 : 125. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 31. 1896 ; Collett, Fl. Siml. 26. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 291. 1972 ; Nair, Fl. Bash. Himal. 23. 1977.

Weak herb. Flowers yellow.

*Fl. & Fr.* : May September.

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

Alpine Himalaya, Kashmir to Sikkim.

**Corydalis ramosa** Wall. ex Hook. f. & Thoms. var. **vaginans** in Hook. f. *Fl. Brit. India* 1 : 125. 1872 ; Prain in *Journ. Asiat. Soc. Beng.* 65 : 32. 1896 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 291. 1972.

Differs from variety *typica* in the wing of the posticous petal being lacerate.

*Fl. & Fr.* : July August.

Simla (DD).

Western Himalaya.

**Corydalis stricta** Steph ex DC. *Syst. Nat.* 2 : 123. 1821 ; Hook. f. & Thoms. in Hook. f. *Fl. Brit. India* 1 : 126. 1872 ; Prain in *Journ. Asiat. Soc. Beng.* 65 : 38. 1896 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. Kash.* 292. 1872.

Erect herb with thick leaves. Flowers pale yellow.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD).

Western Tibet, Ladakh. Himachal Pradesh and Nepal.

**Corydalis thyrsiflora** Prain in *Journ. Asiat. Soc. Beng.* 65 : 35. 1896 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 292. 1972. *C. gortschakovii* (non Schrenk.) Hook. f. & Thoms. in Hook. f. *Fl. Brit. India* 1 : 125. 1872.

Herb with woody rootstocks. Flowers yellow with purple tips.

*Fl. & Fr.* : July September.

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

Western Himalaya & Tibet.

**Dicentra roylei** Hook. f. & Thoms. Fl. Ind. Ind. 273. 1855 et in Hook. f. Fl. Brit. India 1 : 121. 1872 ; Prain in Journ. Asiat. Soc. Beng. 65 : 12. 1896 ; Collett, Fl. Siml. 24. 1902 ; Nair, Fl. Bash. Himal. 23. 1977.

Slender herb, climbing with leaf tendrils. Flowers yellow.

*Fl. & Fr.* : September October.

Chamba (DD), Kinnaur (DD).

Temperate Himalaya.

**Fumaria indica** (Hauskn.) H. N. Pugsley in Journ. Linn. Soc. Bot. 44 : 313. 1919 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 293. 1972 ; Raghavan et al. in Rec. Bot. Sur. India. 21 (2) : 5. 1981. *F. vaillantii* Loisel var. *indica* Hauskn. in Flora. 56 : 443. 1873 ; *F. vaillantii* Loisel. sensu Nair, Fl. Bash. Himal. 23. 1977. *F. parviflora* sensu Collett, Fl. Siml. 27. 1902.

Diffuse, much branched herb. Flowers pale pink or white.

*Fl. & Fr.* : February June.

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

Common.

## BRASSICACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Alliaria petiolata** (M. Bieb.) Cavara & Grande in Boll. Orto. Bot. Napoli 3 : 418. 1913 ; Jafri in Fl. West Pakistan 55 : 247. 1973. *Arabis petiolata* M. Bieb. Fl. Tour - Cauc. 2 : 126. 1808. *Alliaria officinalis* Andrz. ex M. Bieb. Fl. Tour. Cauc. 3 : 445. 1819 ; Nair, Fl. Bash.

Himal. 23. 1977. *Erysimum alliaria* L. Sp. Pl. 660. 1753. *Sisymbrium alliaria* (L.) Scop. Fl. Carn. 2 : 26. 1772 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 151. 1872 ; Collett, Fl. Siml. 35. 1902.

Tall, erect, glabrous herb. Flowers white. Pods straight, glabrous.

*Fl. & Fr.* : May July.

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

Western Himalaya and Nepal.

**Alyssum desertorum** Stapf in Denk. Akad. Wiss. Wien Math. Nat. Kl. 5 : 302. 1886 ; Jafri in Fl. West Pakistan 55 : 117. 1973. *A. minimum* auct. non L. Sp. Pl. 2 : 651. 1753 ; Willd. Sp. Pl. ed 4. 3 (1) : 464. 1800 ; Hook. f. and T. Anderson in Hook. f. Fl. Brit. India 1 : 141. 1872.

Grayish - white herb. Flowers white or faintly yellow. Pods orbicular, slightly notched, glabrous.

*Fl. & Fr.* : June September.

Lahul and Spiti (DD).

Kashmir and Himachal Pradesh.

**Aphragmus oxycarpus** (Hook. f. & Thoms.) Jafri in Notes Royle Bot. Gard. Edin. 22 : 96. 1956 et in Fl. West Pakistan 55 : 259. 1973. *Braya oxycarpa* Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 5 : 169. 1861. *Aphragmus stewartii* Schulz in Fedd. Report. 31 : 330. 1933.

Small herb branching from the base. Flowers white, pinkish or pale lilac.

*Fl. & Fr.* : July September.

Lahul and Spiti (DD).

Western Himalaya.

**Arabidopsis himalaica** (Edgew.) O. E. Schulz. in Engl. Pflanzenr. 86. (IV. 105) : 283. 1924 ; Jafri in Fl. West Pakistan 55 : 272. 1973 ; Nair, Fl. Bash. Himal. 24. 1977. *Arabis himalaica* Edgew. in Trans. Linn. Soc. 20 : 31. 1846. *Sisymbrium himalaicum* Edgew. Hook. f. & Thom. in Journ. Linn. Soc. Bot. 5 : 160. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 147. 1872.

Herb. Flowers white rose coloured. Pods straight, valves striate.

*Fl. & Fr.* : May September.

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

Temperate Himalaya from Kashmir to Sikkim.

**Arabidopsis mollissima** (C. A. Mey.) N. Busch, Fl. Sib. et. Or. Extr. 1 : 136. 1913 ; Jafri in Fl. West Pakistan 55 : 271. 1973 ; Nair, Fl. Bash. Himal. 24. 1977. *Sisymbrium mollissima* C. A. Mey. in Ledeb. Fl. Alt. 3 : 140. 1831 ; Hook. f. and T. Anderson in Hook. f. Fl. Brit. India 1. 147. 1872. *S. thomsonii* Hook. f. in Jour. Linn. Soc. Bot. 5 : 161. 1861.

Erect herb. Flowers purple or white. Pods straight, valves convex.

*Fl. & Fr.* : May August.

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

Temperate Himalaya, Kashmir to Sikkim.

**Arabidopsis pumilum** (Steph.) N. Busch. Fl. Cauc. Crit. 3. 4 : 457. 1909 ; Jafri in Fl. West Pakistan 55. 276. 1973. *Sisymbrium pumilum* Steph. apud Willd. Sp. Pl. ed 4. 3 (1) : 507. 1800. *S. cabulicum* Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 5 : 161. 1861. *S. foliosum*. Hook. f. & Thom. in Journ. Linn. Soc. Bot. 5 : 160. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 148. 1872.

Sparsely hairy herb. Flowers small white. Pod straight or curved with a few stellate hairs, valves thin, flattened, striate.

*Fl. & Fr.* : July September.

Lahul and Spiti. (DD.).

Kashmir & Himachal Pradesh.

**Arabidopsis stricta** (Camb.) N. Busch, Fl. Cauc. Crit. 3. 4. 457. 1909 ; Jafri in Fl. West Pakistan 55 : 275. 1973 ; Nair, Fl. Bash. Himal. 24. 1977.

*Malcolmia stricta* Camb. in Jacquem. Voy. Bot. Ind. 4 : 16. 1844. *Sisymbrium stricta* Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 5 : 161. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 149. 1872 ; Collett, Fl. Siml. 34. 1902.

Pubescent herb. Flowers pale pink. Pods curved, valves convex.

*Fl. & Fr.* : June August.

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

Western Himalaya.

*Arabdiopsis taraxacifolia* (T. Anders.) Jafri in Fl. West Pakistan 55 : 274. 1973. *Arabis taraxacifolia* T. Anderson in Hook. f. Fl. Brit. India 1 : 136. 1872 ; Nair, Fl. Bash. Himal. 25. 1977.

Hairy herb. Flowers pale rose to white. Pods very narrow, decurved, flattened, glabrous.

*Fl. & Fr.* : May September.

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

Western Himalaya.

*Arabidopsis thaliana* (L.) Heynh. in Holl. and Heynh. Fl. Sachs. 1 : 538. 1842 ; Jafri in Fl. West Pakistan 55 : 278. 1973 ; Nair, Fl. Bash. Himal. 24. 1977. *Arabis thaliana* L. Sp. Pl. 665. 1753. *Sisymbrium thalianum* (L.) Gay and Monn. in Ann. Sc. Nat. Mus. Ser. 7 : 399. 1826. (in adn.); Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 148. 1872 ; Collett, Fl. Siml. 33. 1902.

Slightly hairy herb. Flowers white. Pods curved.

*Fl. & Fr.* : May October.

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

Temperate Himalaya from Kashmir to Sikkim.

*Arabidopsis wallichii* (Hook. f. & Thom.) N. Busch, Fl. Cauc. Crit. 3 : 457. 1909 ; Jafri in Fl. West Pakistan 55 : 273. 1973 ; Nair, Fl. Bash. Himal. 25. 1977. *Sisymbrium wallichii* Hook. f. & Thom. in Journ. Linn. Soc. Bot. 5 : 158. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 149. 1872 ; Collett, Fl. Siml. 35. 1902.



Stellate hairy herb. Flowers white, changing to pale - pink. Pods curved.

*Fl. & Fr.* : April June.

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

Himalaya from Kashmir to Nepal.

**Arabis amplexicaulis** Edgew. in Trans. Linn. Soc. 20 : 31. 1846 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 136. 1872 ; Collett, Fl. Siml. 32. 1902 ; Jafri in Fl. West Pakistan 55 : 178. 1973 ; Nair, Fl. Bash. Himal. 25. 1977. *A. alticola* O. E. Schulz. in Notizbl. Bot. Gart. Berlin 9 : 1062. 1929.

Herb. Leaves coarsely toothed. Flowers white. Pods linear, acute.

*Fl. & Fr.* : May September.

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

Himalaya - Kashmir to Nepal.

**Arabis bijuga** G. Watt. in Journ. Linn. Soc. Bot. 18 : 378. 1881 ; Jafri in Fl. West Pakistan 55 : 179. 1973. *A. pangiensis* O. E. Schulz in Notizbl. Bot. Gart. Berlin 9 : 1063. 1927. *p. p.* non Watt.

Subglabrous hairy herb. Flowers usually large.

*Fl. & Fr.* May August

Chamba (E), Simla (DD).

North Western Himalaya.

**Arabis nova** Vill. Prosp. Pl. Dauphi. 39. 1779 ; Jafri in Fl. West Pakistan 55 : 175. 1973. *A. auriculata* Lam. Encyc. Meth. Bot. 1 : 219. 1783 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 135. 1872.

Stellately hairy herb. Flowers white. Pods narrow, straight.

*Fl. & Fr.* : July - September.

Lahul and Spiti (DD).

Kashmir and Himachal Pradesh.

**Arabis pterosperma** Edgew. in Trans. Linn. Soc. 20 : 33. 1851 ; Jafri in Fl. West Pakistan 55 : 177. 1973 ; Nair, Fl. Bash. Himal. 25. 1977.

*A. alpina* (non L. Sp. Pl. 664. 1753) Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 135. 1872 ; Collett, Fl. Siml. 31. 1902.

Forked and stellate hairy herb. Flowers white. Pod narrow linear, erect.

*Fl. & Fr.* : June September.

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

Himalaya from Kashmir to Bhutan.

***Arabis tenuirostris*** O. E. Schulz in Notizbl. Bot. Gart. Berlin 9 : 1066. 1927 ; Jafri in Fl. West Pakistan 55 : 175. 1973.

*Fl. & Fr.* : June - August.

Lahul and Spiti (DD).

Western Himalaya.

***Arabis tibetica*** Hook. f. & Thoms. in Journ Linn. Soc. Bot. 5 : 143. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 139. 1872 ; Jafri in Fl. West Pakistan 55 : 174. 1973.

Stellately hairy herb. Flowers white or pale pink. Pods narrow - linear, falcate, glabrous:

*Fl. & Fr.* : May August.

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

Western Himalaya.

***Barbarea interimedia*** Boreau, Fl. Cent. France 2 : 40 : 1840 ; Jafri in Fl. West Pakistan 55 : 166 : 1973 ; Nair, Fl. Bash. Himal. 25. 1977.  
***B. vulgaris*** var. *sicula* Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 134. 1872 (non Presl, 1819).

*Fl. & Fr.* : May - July.

Chamba (DD,) Kinnaur (DD).

Temperate Himalaya

***Barbarea vulgaris*** R. Br. in Aiton. Hort. Kew ed. 2. 4 : 109. 1812 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 134. 1872 ; Collett,

Fl. Siml. 30. 1902 ; Jafri in Fl. West Pakistan 55 : 165. 1973 ; Nair, Fl. Bash. Himal. 25. 1977. *Erysimum barbarea* L. Sp. Pl. 660. 1753.

Glabrous herb. Flowers small, bright yellow. Pods Linear, 4 angled.

*Fl. & Fr.* : May October.

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

Temperate & sub alpine Himalaya.

**Brassica napus** L. Sp. Pl. 666. 1753 ; Jafri in Fl. West Pakistan 55 : 23. 1973. subsp. *napus* var. *napus*. *B. campestris* L. subsp. *napus* (L.) Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 156. 1872.

Roots fusiform. Leaves glabrous and glaucous.

*Fl. & Fr.* : March July.

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

Cultivated throughout India.

**Brassica nigra** (L.) Koch in Rohling, Deutsch. Fl. ed. 3. 4 : 713. 1833 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 156. 1872 ; Jafri in Fl. West Pakistan 55 : 27. 1973 ; Nair, Fl. Bash. Himal. 26. 1977. *Sinapis nigra* L. Sp. Pl. 668. 1753.

Herb. Flowers bright yellow.

*Fl. & Fr.* : May September.

Kangra (RRL), Kinnaur (BSD).

Cultivated in various parts of India.

**Braissica oleracea** L. Sp. Pl. 667. 1753 ; Jafri in Fl. West Pakistan 55 : 21. 1973 var. *oleracea*.

*Fl. & Fr.* : July September.

Lahul and Spiti (DD).

Cultivated Western Himalaya.

**Brassica rapa** L. Sp. Pl. 666. 1753 subsp. **campestris** (L.) Clapham in Fl. Brit. Isles. ed. 2 : 124. 1962 ; Jafri in Fl. West Pakistan 55 : 25. 1973. *B. campestris* L. Sp. Pl. 666. 1753 ; Collett, Fl. Siml. 28. 1902.

*Fl. & Fr.* : March September

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

Cultivated throughout India.

**Braya thomsonii** Hook. f. in Journ. Linn. Soc. Bot. 5 : 168. 1861 ; Jafri in Fl. West Pakistan 55 : 261. 1973. *B. alpina* auct (non Sternb. & Hoppe. in Denks, Bayer. Bot. Ges. Regen. 1 : 65. 1815) Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 155. 1872 (excl. syn. *B. oxycarpa* Hook. f. & Thoms.)

Tufted, glabrous herb. Flowers white to purple. Pods erect, linear.

*Fl. & Fr.* : June - August.

Lahul and Spiti (DD).

Western Himalaya.

**Capsella bursa-pastoris** (L.) Medik. Pflanzengat. 1 : 85. 1792 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 159. 1872 ; Collett, Fl. Siml. 36. 1902 ; Jafri in Fl. West Pakistan 55 : 90. 1973 ; Nair, Fl. Bash. Himal. 26. 1977. *Thlaspi bursa-pastoris* L. Sp. Pl. 647. 1753.

Herb more or less covered with forked hairs. Flowers small, white. Pods flat, triangular.

*Fl. & Fr.* : May December.

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

Himalaya - temperate regions.

**Cardamine flexuosa** With. Bot. Arr. Brit. Pl. ed. 3. 3 : 578. t. 3. 1796 ; Jafri in Fl. West Pakistan 55 : 169. 1973. *C. sylvatica* Link. in Hoffm. Pyt. Blactt. 1 : 50. 1803 ; Collett, Fl. Siml. 32. 1902. *C. hirsuta* var. *sylvatica* (Link.) Hook. f. & T. Anderson in Hook. f. Fl. Brit. India. 1 : 138. 1872. *C. scntata* Thunb. subsp. *flexuosa* (With.) Hara in Journ. Fac. Sci. Uni. Tokyo Bot. 6 : 59. 1952 ; Nair, Fl. Bash. Himal. 27. 1977. *C. flexuosa* With subsp. *debilis* (D. Don) O. E. Schulz in Notizbl. Bot. Gart. Berlin 9 : 1069. 1927 ; Nair, Fl. Bash. Himal. 27. 1977.

Herb with weak stem. Flowers white. Pods erect, obtuse.

*Fl. & Fr.* : May - August.

Chamba (CDRI), Kulu (BBD), Lahul and Spiti (RRL.)

All temperate regions of India.

**Cardamine hirsuta** L. Sp. Pl. 655. 1753 ; Jafri in Fl. West Pakistan 55 : 163. 1973 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 138. 1872 (excl. var. *oxycarpa* Hook. f. & T. Anderson) ; Nair, Fl. Bash. Himal. 26. 1977.

Glabrous herb. Flowers white. Pods racemed, erect acute or obtuse.

*Fl. & Fr.* : July August.

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

Temperate regions of India.

**Cardamine hirsuta** L. var. *oxycarpa* Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 138. 1872 ; Collett, Fl. Siml. 32. 1902.

Erect herb. Flowers white. Pods pointed, erect.

*Fl. & Fr.* : May - July.

Simla (DD).

Hilly regions of India.

**Cardamine impatiens** L. Sp. Pl. 655. 1753 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 138. 1872 ; Collett, Fl. Siml. 33 1902 ; Jafri in Fl. West Pakistan 55 : 168. 1973 ; Nair, Fl. Bash. Himal. 26. 1977.

Erect herb. Flowers white. Pods pointed, erect.

*Fl. & Fr.* : April July.

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

Temperate Himalaya from Kashmir. to Sikkim

**Cardamine impatiens** L. ssp. **elongata** O. E. Schulz in Engl. Bot. Jahrb. 32 : 459. 1902 ; Nair, Fl. Bash. Himal. 26. 1977.

Stiff erect herb. Flowers white.

*Fl. & Fr.* : March August.

Chamba (DD).

North - Western Himalaya.

**Cardamine loxostemonoides** O. E. Schulz in Notizbl. Bot. Gart. Berlin 9 : 1069. 1927 ; Jafri in Fl. West Pakistan 55 : 168. 1973. *C. pratensis* auct. non L. Sp. Pl. 656. 1753 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 138. 1872.

Glabrous herb. Flowers large white or lilac. Pods linear, erect.

Himalaya Kashmir to Bhutan.

**Cardamine macrophylla** Willd. Sp. Pl. 3 : 484. 1800 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 139. 1872 ; Collett, Fl. Siml. 33. 1902 ; Jafri in Fl. West Pakistan 55 : 167. 1973. *C. polyphylla* D. Don, Prodr. Fl. Nep. 201. 1825. *C. macrophylla* ssp. *polyphylla* (D. Don) O. E. Schulz in Notizbl. Bot. Gart. Berlin 9 : 1071. 1927.

Erect herb. Flowers white or tinged with violet.

*Fl. & Fr.* : May July.

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

Temperate Himalaya.

**Chorispora sabulosa** Camb. in Jacq. Voy. Bot. 15. t. 15. 1844 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 167. 1872 ; Jafri in Fl. West Pakistan 55 : 205. 1973. *C. elagans* Camb. var. *sabulosa* (Camb.) O. E. Schulz in Notizbl. Bot. Gart. Berlin 9 : 1071. 1927.

Glandular - hairy herb with fleshy fusiform root. Flowers large yellow or purplish. Pods straight, curved or twisted.

*Fl. & Fr.* : July - September.

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

Western Himalaya.

**Chorispora tenella** (Pallas) DC. Syst. Nat. 2 : 435. 1821 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 166. 1872 ; Jafri in Fl. West Pakistan 55 : 206. 1973. *Raphanus tenellus* Pallas, Reise 3. Ann. 50. t. 3. 1776.

Pilose or rough glandular herb. Flowers purple.

*Fl. & Fr.* : May June.

Chamba (DD), Simla (LWG).

Western Himalaya.

**Christolea crassifolia** Camb. in Jacq. Voy. Bot. 4 : 17. t. 17. 1844 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 154. 1872 ; Jafri in Fl. West Pakistan 55 : 156. 1973.

Much branched herb. Flowers yellow. Pods linear, lanceolate, flattened.

*Fl. & Fr.* : July August.

Lahul and Spiti (BSD, DD).

Himalaya Kashmir to Nepal.

**Christolea himalayensis** (Camb.) Jafri in Notes Roy. Bot. Gard. Edinburgh. 22 : 53. 1955 et in Fl. West Pakistan 55 : 1581. 1973. *Cherianthus himalayensis* Camb. in Jacquom. Voy. Bot. 14. 1844 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 132. 1871. *C. himalaicus* Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 5 : 137. 1861. *Oreoblastus himalayensis* (Camb.) Suslova in Bot. Jour. U. R. S. S. 57 : 652. 1972.

Herb. Flowers yellow purple, fragrant.

*Fl. & Fr.* : June August.

Lahul and Spiti (DD).

Western Himalaya.

**Christolea stewartii** (T. Anders.) Jafri in Notes Royl. Bot. Gard. Edinburgh 22 : 53. 1955 et Fl. West Pakistan 55 : 157. 1973. *Cherianthus stewartii* T. Anderson in Hook. f. Fl. Brit. India 1 : 132. 1872. *Ermania stewartii* (T. Ander.) O. E. Schulz in Bot. Jahrb. 66 : 98. 1933. *Oreoblastus stewartii* (T. Anders.) Suslova in Bot. Journ. U. R. S. S. 57 : 653. 1972.

Herb. Flowers buff then purple. Pods erect, glabrous, tapering at both the ends.

*Fl. & Fr.* : June August.

Lahul & Spiti (DD).

Western Himalaya.

**Coronopus didymus** (L.) Smith. Fl. Brit. 2 : 691 1804 ; Jafri in Fl. West Pakistan 55 : 62. 1973. *Lepidium didymum* L. Mant. 1 : 92. 1767. *Senebiera didymus* (L.) Pers. Syn. Pl. 2 : 185. 1807. *S. pinnatifida* DC. Sys. Nat. 2 : 144. 1821.

*Fl. & Fr.* : May July.

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

Western Himalaya.

**Crambe cordifolia** Steven. in Mem. Soc. Nat. Mosc. 3 : 267. 1812 ssp. *kotschyana* (Boiss.) Jafri in Fl. West Pakistan 55 : 37. 1973. *C. kotschyana* Boiss. Diag. Ser. 16 : 19. 1845 ; Nair, Fl. Bash. Himal. 27. 1977. *C. cordifolia* auct (non Stev.) Hook. f. & T. Anderson in Hook. f. Fl. Brit. India. 1 : 175. 1872.

Tall, stout, bristly hairy herb. Flowers white. Pods globose.

*Fl. & Fr.* : May July.

Chamba (DD), Kinnaur (DD).

Western Himalaya.

**Descurainia sophia** (L.) Webb. & Berth. in Engl. & Prantl, Natur. Pflanzenf. 3. 2 : 192. 1891 ; Jafri in Fl. West Pakistan 55 : 281. 1973 ;



Nair, Fl. Bash. Himal. 27. 1977. *Sisymbrium sophia* L. Sp. Pl. 659. 1753 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 150. 1872 ; Collett, Fl. Siml. 35. 1902.

Erect, glabrous or pubescent herbs. Flowers small, pale yellow.

*Fl. & Fr.* : July August.

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

Western Himalaya.

*Dilophia salsa* Thoms. in Hook. f. Kew Jour. Bot. IV. 5 : 20. t. 12. 1853 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 161. 1872.

Dwarf, glabrous, fleshy herb. Flowers white. Pods very short, compressed, obcordate.

*Fl. & Fr.* June August.

Lahul and Spiti (DD).

Himalaya Kashmir to Nepal.

*Dontostemon glandulosus* (Kar. & Kir.) O. E. Schulz in Notizbl. Bot. Gart. Berlin 10 : 554. 1929 ; Jafri in Fl. West Pakistan 55 : 191. 1973. *Arabis glandulosa* Kar. & Kir. in Bull. Soc. Nat. Mosc. 15 : 146. 1842 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 136. 1872. *Sisymbrium glandulosum* (Kar. & Kir.) Maxim, Fl. Tang. 61. 1889.

Prostrate herb. Flowers pale rose to white. Pods linear, valves concave.

*Fl. & Fr.* : June - September.

Lahul and Spiti (BSD, DD).

Alpine Himalaya.

*Draba altaica* (C. A. Mey.) Bunge in Delect. Sem. Hort. Dorpat. 8. 1841 ; Jafri in Fl. West Pakistan 55 : 137. 1973. *C. rupestris* R. Br. var.

Simla (DD).

Cultivated, ornamental.

**Iberis amara** L. Sp. Pl. 649. 1753 ; Jafri in Fl. West Pakistan 55 : 79. 1973.

Herb. Flowers white to pale violet.

*Fl. & Fr.* : July September.

Cultivated, ornamental.

**Isatis tinctoria** L. Sp. Pl. 670. 1753 ; Hook. f. and T. Anderson in Hook. f. Fl. Brit. India 1 : 163. 1872 ; Jafri in Fl. West Pakistan 55 : 74. 1973.

Tall, erect herb. Flowers small, yellow. Pods glabrous, rounded.

*Fl. & Fr.* : September August.

Chamba (DD), Kinnaur (DD).

Western Himalaya.

**Lepidium apetalum** Willd. Sp. Pl. 3 : 439. 1800 ; Kitamura, Fl. West Pak. & Afghan. 73. 1964 ; Jafri in Fl. West Pakistan 55 : 55. 1973. *L. ruderale* auct (non L. Sp. Pl. 645. 1753) Hook. f. & T. Anderson in Hook. f. Brit. India 1 : 160. 1872. *p. p.*

Erect, glabrous or pubescent herb. Flowers minute. Pods orbicular oblong, flat.

*Fl. & Fr.* : May July.

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

Temperate Himalaya.

**Lepidium capitatum** Hook. f. & Thoms. in Jour. Linn. Soc. Bot. 5 : 175. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 160. 1872 ; Jafri in Fl. West Pakistan 55 : 58. 1973.

Prostrate, glabrous or glandular pubescent herb. Pods ovate, scarcely notched.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD, DD).

Temperate and subalpine Himalaya from Sikkim to Himachal Pradesh.

**Lepidium latifolium** L. Sp. Pl. 644. 1753 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 160. 1872 ; Jafri in Fl. West Pakistan 55 : 60. 1973.

Erect, branched herb. Flowers minute. Pods elliptic.

*Fl. & Fr.* : July - August.

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

Himalaya.

**Lepidium pinnatifidum** Ledeb. Fl. Ross. 1 : 206. 1842 ; Jafri in Fl. West Pakistan 55 : 56. 1973.

Herb usually glabrous. Pods with entire or slightly emarginate apex.

*Fl. & Fr.* : August - September.

Lahul and Spiti (DD).

Western Himalaya.

**Lepidium sativum** L. Sp. Pl. 644. 1753 ; Hook. f. & T. Anderson in Hook. f. Brit. India 1 : 159. 1872 ; Collett, Fl. Siml. 36. 1902 ; Jafri in Fl. West Pakistan 55 : 55. 1973 ; Nair, Fl. Bash. Himal. 28. 1977.

Erect herb. Flowers white. Pods deeply notched.

*Fl. & Fr.* : June - October.

Kinnaur (DD).

Cultivated throughout India.

**Lepidium virginicum** L. Sp. Pl. 645. 1753 ; Kitamura, Plants West Pakistan & Afghan 75. 1964 ; Jafri in Fl. West Pakistan 55 : 58. 1973 ; Nair, Fl. Bash. Himal. 29. 1977.

Racemes elongated, 5 -10 cm long in fruits. Petals longer than sepals.

*Fl. & Fr.* : May - August.

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

Western Himalaya.

**Megacarpaea polyandra** Benth. in Kew Journ. Bot. 7 : 356. t. 7. 1855 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 161. 1872 ; Jafri in Fl. West Pakistan 55 : 81. 1973.

Large coarse herb with thick fleshy root. Flowers cup shaped, white. Pods notched at the base and tip.

*Fl. & Fr.* : May - September.

Kinnaur (DD), Kulu (DD, RRL).

Western Himalaya.

**Microsisymbrium minutiflorum** (Hook. f. & Thoms.) O. E. Schulz in Engler. Pflanzenr. 86 (IV. 105). 16. 1924 ; Jafri in Fl. West Pakistan 55 : 257. 1973. *Sisymbrium minutiflorum* Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 5 : 158. 1861 ; Hook. f. and T. Anderson in Hook. f. Fl. Brit. India 1 : 149. 1872. *Arabidopsis minutiflora* (Hook. f. & Thoms.) Busch, Fl. Cauc. Crit. 3 : 1909. (in obs.)

Rough, hairy herb. Flowers white, minute.

*Fl. & Fr.* : June - September.

Lahul and Spiti (BSD, DD).

Western Himalaya.

**Nasturtium microphyllum** Boenn. ex Reichenb. Fl. Germ. Exc. 683. 1832. et Icon. Fl. Germ. 2. t. 50. f. 4360. 1848 ; Jafri in Fl. West Pakistan 55 : 185. 1973. *Rorippa microphyllum* (Boenn. ex Reichb.) Hyl. ex Love & Love in Rep. Univ. Inst. Appl. Sc. Reykjavik. Dep. Agr. ser. B. 3 : 109. 1948.

Pods 1 mm broad. Seeds uniseriate.

*Fl. & Fr.* : July - August.

Chamba (DD).

Western Himalaya.

**Nasturtium officinale** R. Br. in Aiton, Hort. Kew ed. 2. 4 : 110. 1812 ; Jafri in Fl. West Pakistan 55 : 185. 1973 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 133. 1872 ; Nair, Fl. Bash. Himal. 29. 1977. *Sisymbrium nasturtium - aquaticum* L. Sp. Pl. 657. 1753. *Rorippa nasturtium-aquaticum* (L.) Hayek in Sched. Fl. Styr. Exs. 22. 1905. *Nasturtium fantonum* Aschers Fl. Brandenb. 32. 1860.

Aquatic, much branched herb. Flowers white. Pods linear, about 2.5 mm broad. Seeds biseriate.

*Fl. & Fr.* : May August.

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

Throughout India.

**Raphanus sativus** L. Sp. Pl. 699. 1753 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 166. 1872 ; Collett, Fl. Siml. 28. 1902 ; Jafri in Fl. West Pakistan 55 : 35. 1973 ; Nair, Fl. Bash. Himal. 29. 1977.

Herb with fleshy root. Leaves roughly pilose. Flowers white, lilac and purple veined. Pods terete glabrous.

*Fl. & Fr.* : May June.

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

Cultivated throughout India.

**Rorippa indica** (L.) Hiern, Cat. Afr. Pl. Welw. 1 : 26 add et corr. 1896 ; Jafri in Fl. West Pakistan 55 : 189. 1973. *Sisymbrium indicum* L. Mant. 1 : 93. 1767. *Nasturtium indicum* (L.) DC. Syst. Nat. 2 : 199. 1868 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 134. 1872.

Rough, hairy herb. Flowers yellow.

*Fl. & Fr.* : June September.

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

Throughout India, common in damp places.

**Rorippa islandica** (Oeder) Borbas, Balaton Tav. 2 : 392. 1900 ; Jafri in Fl. West Pakistan 55 : 189. 1973. *Sisymbrium islandicum* Oeder, Fl. Dan. 3 : 7. t. 409. 1768. *S. amphibium* L. var. *palustre* L. Sp. Pl. 657. 1753. *Nasturtium palustre* (L.) DC. Syst. Nat. 2 : 191. 1821 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 133. 1872 ; Collett, Fl. Siml. 30. 1902.

Glabrous herb. Flowers yellow. Pods short, thick.

*Fl. & Fr.* : June October.

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

Abundant in temperate Himalaya.

**Rorippa montana** (Wall. ex. Hook. f. & T. Anderson) Fl. S. E. United State ed. 2. 1336. 1913. *Nasturtium montanum* Wall. ex Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 134. 1872 ; Collett, Fl. Siml. 30. 1902.

Herb. Flowers yellow. Pods short, turgid.

*Fl. & Fr.* : May July.

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

Subtropical Himalaya.

**Sisymbrium brassiciforme** C. A. Mey. in Ledeb. Fl. Alt. 3 : 129. 1831 ; Jafri in Fl. West Pakistan 55 : 249. 1973 ; Nair, Fl. Bash. Himal. 30. 1977. *S. columnae* auct (non Jacq.) Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 5 : 150. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 150. 1872.

Tall, glabrous or hairy herb. Flowers pale yellow.

*Fl. & Fr.* : April July.

Lahul and Spiti (DD).

Western Himalaya and Nepal.

**Sisymbrium irio** L. Sp. Pl. 659. 1753 ; Jafri in Fl. West Pakistan 55 : 250. 1973 ; Hook. f. and T. Anderson in Hook. f. Fl. Brit. India 1 : 150. 1872.

Tall, glabrous herb. Flowers yellow. Pods erect, glabrous, valves curved.

*Fl. & Fr.* : April June.

Kangra (RRL), Lahul & Spiti (DD).

Northern India.

**Sisymbrium loeselii** L. Cent. Pl. 1 : 18. No. 49. 1755 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 151. 1872 ; Jafri in Fl. West Pakistan 55 : 251. 1973.

Tall, erect hairy herb. Flower pale yellow. Pods slightly curved, glabrous.

*Fl. & Fr.* : May August.

Chamba (DD), Kinnaur (DD).

Kashmir & Himachal Pradesh.

**Sisymbrium orientale** L. Cent. Pl. 2 : 24. 1756 ; Jafri in Fl. West Pakistan 55 : 253. 1973 ; Nair, Fl. Bash. Himal. 30. 1977. *S. columnae* Jacq. Fl. Austr. 4 : 12. t. 323. 1776 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 150. 1872.

Tall, glabrous or hairy herb. Flowers large, pale yellow.

*Fl. & Fr.* : May - September.

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

Western Himalaya.

**Tauscheria lasiocarpa** Fisch. ex DC. Syst. Nat. 2 : 563. 1821 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 164. 1872.

Erect glabrous, branching herb. Flowers small, yellow. Pods thickly glandular, hairy.

*Fl. & Fr.* : July - August.

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

Western Himalaya.

**Thlaspi andersonii** (Hook. f. & Thoms.) O. E. Schulz. in Anzeiger. Akad. Wiss. Wien. Math. Nat. Kl. 43 : 98. 1926 ; Jafri in Fl. West Pakistan 55 : 89. 1973. *Iberidella andersonii* Hook. f. & Thoms. in J. Linn. Soc. Bot. 5 : 177. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 163. 1872.

Glabrous herb. Flowers large, white or pale rose. Pods much flattened, narrow, curved, acute.

*Fl. & Fr.* : June - August.

Kinnaur (DD).

Himalaya - Kashmir to Bhutan.

**Thlaspi arvense** L. Sp. Pl. 641. 1753 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 162. 1872 ; Collett, Fl. Siml. 37. 1902 ; Nair, Fl. Bash. Himal. 30. 1977.

Erect, glabrous herb. Flowers white. Pods much flattened.

*Fl. & Fr.* : May August.

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

Cultivated throughout the temperate & subalpine Himalaya.

**Thlaspi cochleariforme** DC. Syst. Nat. 2 : 381. 1821 et Prodr. 1. 176. 1824. *T. alpestre* auct (non L. Sp. Pl. ed. 2. 403. 1762) Hook. f. & Thoms. in J. Linn. Soc. Bot. 5 : 177. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 162. 1872 ; Collett, Fl. Siml. 37. 1902.

Herb. Flowers large white.

*Fl. & Fr.* : May August.

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

Temperate and subalpine Himalaya.

**Thlaspi coclearioides** Hook. f. & Thoms. in Jour. Linn. Soc. Bot. 5 : 177. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 162. 1872 ; Jafri in Fl. West Pakistan 55 : 89. 1973.

Decumbant, glabrous herb. Flowers small, white. Pods oblong curved and twisted.

*Fl. & Fr.* : June August.

Lahul and Spiti (DD).

Himalaya.

**Thlaspi kotschyanum** Boiss. & Hohen. in Boiss. Diagn. ser. 1 : 39. 1849 ; Jafri in Fl. West Pakistan 55 : 85. 1973. *T. cardiocarpum* Hook. f. & Thoms. in J. Linn. Soc. Bot. 5 : 176. 1861 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 162. 1872.

Erect, slightly glaucous herb.

*Fl. & Fr.* : June September.



Kinnaur (BSD).

Himalaya.

**Torularia humilis** (C. A. Mey.) O. E. Schulz in Engler Pflanzenr. 86 (IV. 105) : 223. 1924 ; Jafri in Fl. West Pakistan 55 : 267. 1973. *Sisymbrium humile* C. A. Mey. in Ledeb. Icon. Pl. Ross. 2. : 16 t. 147. 1830 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 148. 1872.

Dwarf, hoary herb. Flowers large, white or lilac. Pods terete, torulose, straight.

*Fl. & Fr.* : July September.

Lahul and Spiti (DD).

Himalaya.

**Turritis glabra** L. Sp. Pl. 666. 1753 ; Jafri in Fl. West Pakistan 55 : 183. 1973 ; Nair, Fl. Bash. Himal. 31. 1977. *Arabis glabra* (L.) Bernh. Syst. Verz. Erfurt. 1 : 195. 1800 ; Hook. f. & T. Anderson in Hook. f. Fl. Brit. India 1 : 135. 1872.

Tall erect herbs. Flowers pale - yellow

*Fl. & Fr.* : May September.

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

Western Himalaya.

## CAPPARACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Capparis himalayensis** Jafri in Pak. Jour. Fore. 6 : 1471.. t. 1. f. 18. 1956 et. Fl. West Pakistan 34 : 7. 1973. *C. leucophylla* Collett, Fl. Siml. 38. 1902 (non DC. 1824). *C. spinosa* var. *himalayensis* (Jafri) Jacobs. in Blumea 12 (3) : 419. 1965 ; Nair, Fl. Bash. Himal. 31. 1977. *C. spinosa* L. var. *leucophylla* (non DC.) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 173. 1872.

## FLACOURTIACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Casearia elliptica** Willd. Sp. Pl. 2 : 628. 1800 ; Wt. Icon. Pl. Ind. Or. 5 : t. 1849. 1852. *C. tomentosa* Roxb. Fl. Ind. 2 : 421. 1824 ; Clarke in Hook. f. Fl. Brit. India 2 : 593. 1879 ; Parker, For. Fl. Punjab ed. 3. 257. 1956.

Small tree. Flowers greenish yellow. Calyx persistent tomentose. Capsule more or less succulent.

*Fl. & Fr.* : April May.

Sirmur (BSD).

Throughout India.

**Flacourtia indica** (Burm. f.) Merrill, Interpr. Rumph. Herb. Amb. 377. 1917 ; Nasir in Fl. West Pakistan 1 : 2. 1970. *Gmelina indica* Burm. f. Fl. Ind. 132. t. 39. f. 5. 1768. *Flacourtia ramontchi* L. Herit. Strip Nov. 3. 59. t. 30. 1785 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 193. 1872 ; Parker, For. Fl. Punjab ed. 3. 22. 1956. *F. sepiaria* Roxb. Pl. Cor. t. 68. 1796. *F. sapida* Roxb. Pl. Cor. 49. t. 69. 1796.

Shrub or small tree, armed with axillary thorns and often with tufts of branched thorns on the stem. Flowers greenish - yellow, dioecious. Fruit dark brown to red, edible.

*Fl. & Fr.* : March - April.

Lahul and Spiti (BSD), Solan (DD), Simla (BSIP).

Common throughout India, wild or cultivated.

**Flacourtia jangomas** (Lour.) Raeuschel, Nomcl. Bot. ed. 3. 290. 1797 ; Nasir in Fl. West Pakistan 1 : 4. 1970. *Stigmarota jangomas* Lour. Fl. Cochinch. 634. 1790. *Flacourtia cataphracta*. Roxb. ex Willd. Sp. Pl. 4 : 830. 1805 06 ; Hook. f. & Thoms. in Hook.f. Fl. Brit India 1 : 193. 1872.

Small tree, spines compound. Flowers very small. Fruit purple, very acidic.

*Fl. & Fr.* : March May.

Mandi (LWG).

Himalaya.

**Xylosoma longifolium** Clos in Ann. Sci. Nat. Ser. 4. 8 : 231. 1857 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 194. 1872 ; Brandis, Fl. N. W. & Cent. India 19. 1874 ; Parker, For. Fl. Punjab ed. 3. 22. 1956 ; Nasir in Fl. West Pakistan 1 : 4. 1970.

Glabrous shrub. Leaves coriaceous, shining above. Flowers dioecious, small, yellow. Berry glabrous, black.

*Fl. & Fr.* : February May.

Chamba (DD), Mandi (CDRI), Solan (DD).

Western Himalaya in the outer ranges.

## PITTOSPORACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Pittosporum eriocarpum** Royle, Ill. Bot. Himal. Mount. 77. 1839 ; Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 199. 1872 ; Parker, For. Fl. Punjab ed. 3. 23. 1956.

Small, evergreen tree. Flowers yellowish. Capsule tomentose, globose, woody.

*Fl. & Fr.* : March - April.

Chamba (DD).

Western Himalaya.

**Pittosporum napaulense** (DC.) Rehder & Wilson in Sarg. Pl. Wils. 3 : 326. 1916. *Senacia napaulensis* DC. Prodr. 1 : 347. 1824 var. *rawalpindiense* Gowda in J. Arn. Arb. 32 : 332. 1951 ; S. Ghazanafar in F. West. Pakistan 93 : 3. 1975. *P. floribundam* (non Wight & Arn.) Parker, For. Fl. Punjab ed. 3. 23. 1956.

Small evergreen tree bark dotted with white specks. Flowers yellow. Fruit a capsule, globose, orange when ripe.

*Fl. & Fr.* : January June.

Chamba (DD).

Subtropical Himalaya.

### POLYGALACEAE

B. M. WADHWA, R. PRASAD AND H. J. CHOWDHERY

***Polygala abyssinica*** R. Br. ex Fresen. in Mus. Senck. 2 : 273. 1837 ; Bennett in Hook. f. Fl. Brit. India 1 : 202. 1872 ; Collett, Fl. Siml. 44. 1902 ; M. Iqbal Dar in Fl. West Pak. 52 : 6. 1973 ; Nair, Fl. Bash. Himal. 32. 1977.

Perennial herbs. Lower leaves obovate or oblong, upper linear. Flowers pink or purple in terminal racemes. Fruits hairy, oblong, winged. Seed not crowned with bulbous hairs, strophiole 3 lobed.

*Fl. & Fr.* : May November.

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

Subtropical and temperate Himalaya.

***Polygala arvensis*** Willd. Sp. Pl. 3. 2 : 876. 1803 ; M. Iqbal Dar in Fl. West Pak. 52 : 7. 1973 ; Bennett in Notes Roy. Bot. Gard. Edinb. 32 : 404. 1973. *P. chinensis* (non L.) Bennett in Hook. f. Fl. Brit. India 1 : 204. 1872 ; Collett, Fl. Siml. 44. 1902 ; Nair, Fl. Bash. Himal. 32. 1977.

Annual, pubescent, usually procumbent herbs. Leaves obovate, linear oblong, mucronate. Flowers yellow in axillary dense racemes. Capsules elliptic oblong, emarginate, glabrous. Seeds silky hairy.

*Fl. & Fr.* : May November.

Bilaspur (BSD), Chamba (DD), Hamirpur (BSD), Kinnaur (BSD), Mandi (BSD), Simla (DD), Una (BSD).

Throughout India.

**Polygala crotalarioides** Buch. Ham. ex DC. Prodr. 1 : 327. 1824 ; Bennett in Hook. f. Fl. Brit. India 1 : 201. 1872 ; Collett, Fl. Siml. 43. 1902 ; M. Iqbal Dar in Fl. West Pak. 52 : 4 1973 ; Nair, Fl. Bash. Himal. 32. 1977.

Perennial, villous hairy herbs. Leaves obovate elliptic, obtuse. Flowers pink or purple. Capsules orbicular, glabrous, wings ciliate. Seeds oblong, pilose, stropioler appendages 1/3 as long as the seed.

*Fl. & Fr.* : May October.

Chamba (BSD, DD, RRL), Hamirpur (BSD), Simla (DD), Solan (DD), Lahul and Spiti (DD).

Temperate Himalaya.

**Polygala linarifolia** Willd. Sp. Pl. 3. 877. 1803 ; DC. Prodr. 1 : 326. 1824 ; *P. brachystachya* Bl. Bijdr. 59. 1825 (non DC. 1824). *P. chinensis* var. *brachystachya* (Bl.) Bennett in Hook. f. Fl. Brit. India 1 : 204. 1872. *P. chinensis* var. *linarifolia* (Willd.) Chodat, Monogr. 31 (2) : 381. 1893.

Herb. Leaves linear, lanceolate. Flowers pink. Fruits ciliate.

*Fl. & Fr.* : July November.

Kinnaur (DD), Simla (DD).

Throughout India.

**Polygala persicariifolia** DC. Prodr. 1 : 326. 1824 ; Bennett in Hook. f. Fl. Brit. India 1 : 202. 1872 ; Collett, Fl. Siml. 44. 1902 ; Nair, Fl. Bash. Himal. 33. 1977.

Annual herbs. Leaves linear oblong, lanceolate. Flowers pink in terminal racemes. Capsule oblong - ovate, notched. Seed black, hairy.

*Fl. & Fr.* : August - October.

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

Temperate subtropical Himalaya.

**Polygala sibirica** L. Sp. Pl. 702. 1753 ; Bennett in Hook. f. Fl. Brit. India 1 : 205. 1872 ; M. Iqbal Dar in Fl. West Pak. 52 : 4. 1973.

Perennial herbs. Stems many from the base. Leaves linear lanceolate. Flowers blue or purple in axillary racemes. Seed black, pilose, strophilar appendages 3, 1/2 to 2/3 as long as the seed.

*Fl. & Fr.* : May October.

Kulu (DD).

Subtropical parts, extending to dry temperate Himalaya.

**Polygala tartarinowii** Regel in Bull. Soc. Nat. Mosc. 34 (4) : 523. 1861 ; M. Iqbal Dar in Fl. West Pak. 52 : 3. 1973 ; Nair, Fl. Bash. Himal. 33. 1977. *P. triphylla* (non D. Don. nec Brum. f.) Royle, Ill. Bot. Himal. Mount. 1 : 76. t. 19 D. 1834 ; Bennett in Hook. f. Fl. Brit. India 1 : 201 : 1872 (exclu var. *glaucescens*) ; Collett, Fl. Siml. 43. 1902.

Herbs. Leaves orbicular, to obovate spathulate. Flowers pink or purple. Seed black, hairy.

*Fl. & Fr.* : July October.

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

Temperate Himalaya.

## CARYOPHYLLACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Arenaria compressa** Mc Neill in Notes Roy. Bot. Gard. Edinb. 24 : 118. 1962. *A. trichotoma* Royle ex Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 235. 1874 ; Nair, Fl. Bash. Himal. 35. 1977.

Erect, dichotomously branched herbs. Flowers pinkish - white. Capsule subglabrous. Seeds compressed, pale, red - brown.

*Fl. & Fr.* : May June.

Kinnaur (BSD, DD).

Western temperate Himalaya.

**Arenaria festucoides** Benth. in Royle, Ill. Bot. Himal. Mount. 81. t. 21. f. 3. 1834 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 236. 1874 ; Rau, High Alt. Fl. Pl. 78. 1975 ; Nair, Fl. Bash. Himal. 34. 1977.

Densely tufted herbs with densely crowded, pungent leaves. Capsule coriaceous, seeds very flat, pale.

*Fl. & Fr.* : June - October.

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

Western alpine Himalaya.

**Arenaria glanduligera** Edgew. et. Hook. f. in Hook. f. Fl. Brit. India 1 : 240. 1874 ; Mc Neill in Notes Roy. Bot. Gard. Edinb. 24 : 128. 1962 ; Rau, High Alt. Fl. Pl. 78. 1975.

Glandular - pubescent, tufted herbs. Flowers solitary, pink rosy. Capsules membranous.

*Fl. & Fr.* : August - September.

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

Alpine Himalaya.

**Arenaria neelgherrensis** Wight et Arn. Prodr. Fl. Ind. Or. 43. 1834 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 239. 1874.

Decumbent, pubescent herbs. Flowers pinkish white.

*Fl. & Fr.* : July - August.

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

North - western Himalaya, Nepal and Nilgiri hills.

**Arenaria orbiculata** Royle ex Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 240. 1874 ; Collett, Fl. Siml. 53. 1902 ; Nair, Fl. Bash. Himal. 34. 1977.

Slender, branched, decumbent herbs. Flowers solitary or in few flowered cymes. Capsule opening by 10 valves.

*Fl. & Fr.* : May September.

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

Temperate Himalaya.

**Arenaria perlevis** (Williams) Hand. Mzt. in Oesterr. Bot. Zeitschr. 79. 32. 1930 ; Mc Neill in Notes Roy. Bot. Gard. Edinb. 24 : 120. 1962. *A. polytrichoides* Edgew. *perlevis* Williams in Jour. Linn. Soc. Bot. 33 : 405. 1898. *A. musciformis* Wall. ex Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 237. 1874 ; Rau, High Alt. Fl. Pl. 78. 1975.

Glabrous herbs forming dense matted tufts with long, woody roots. Flowers solitary, sessile.

*Fl. & Fr.* : July August.

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

Alpine Western Himalaya and Tibet.

**Arenaria serpyllifolia** L. Sp. Pl. 423. 1753 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 239. 1874 ; Collett, Fl. Siml. 53. 1902 ; Rau, High Alt. Fl. Pl. 78. 1975 ; Nair, Fl. Bash. Himal. 34. 1977.

Pubescent, dichotomously branched herbs. Flowers numerous, white. Capsule opening by six valves.

*Fl. & Fr.* : April October.

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

Subtropical and temperate Himalaya and North India.

**Cerastium cerastoides** (L.) Brit. in Mem. For. Bot. Club 5 : 150. 1894 ; Rau, High Alt. Fl. Pl. 78. 1975. *Stellaria cerastoides* L. Sp. Pl. 422. 1753. *Cerastium trigynum* Vill. Hist. Pl. Dauph. 3 : 645. 1789 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 227. 1874.

Pubescent, tufted herbs. Flowers white, petals deeply 2 fid.

*Fl. & Fr.* : June September.

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



Alpine Western Himalaya.

**Cerastium dahuricum** Fisch. in Spreng. Pl. Minus Cogn. Pug. 2 : 65. 1815 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 227. 1874 ; Collett, Fl. Siml. 50. 1902 ; Rau, High Alt. Fl. Pl. 78. 1975 ; Nair, Fl. Bash. Himal. 35. 1977.

Tufted, glabrous herbs. Flowers white.

*Fl. & Fr.* : September - October.

Kinnaur (DD), Kulu (DD).

Temperate Western Himalaya

**Cerastium fontanum** Baug. Enum. Strip. Transs. 1 : 425. 1816. ssp. **triviale** (Link) Jalas in Arch. Soc. Zool. Bot. Fenn. Vanamo 18 (1) : 63. 1963. *C. triviale* Link, Enum. Pl. H. Berol. 1 : 433. 1821. *C. caespitosum* Gilib. Fl. Lith. 5 : 159. 1781. *C. holostoides* Fries, Nov. Fl. Suec. 4 : 52. 1817. *C. vulgatum* L. Sp. Pl. ed. 2. 267. 1762 (non L.) 1755 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 228. 1874.

Glandular, tomentose herbs. Flowers white.

*Fl. & Fr.* : May September.

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

Throughout the temperate and subalpine regions of India.

**Cerastium glomeratum** Thuillier, Fl. Envir. Paris ed. 2. 226. 1799 ; Nair, Fl. Bash. Himal. 35. 1977. *C. vulgatum* L. var. *glomerata* (Thuill.) Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 228. 1874 ; Collett, Fl. Siml. 50. 1902.

Viscid pubescent, straggling herbs. Flowers white.

*Fl. & Fr.* : June September.

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

Throughout the temperate and subalpine regions of India.

**Cerastium thomsoni** Hook. f. Fl. Brit. India 1 : 228. 1874 ; Rau, High Alt. Fl. Pl. 78. 1975.

Erect, glandular, hairy herbs. Flowers large, white.

*Fl. & Fr.* : July - October.

Lahul and Spiti (DD).

Temperate Western Himalaya.

**Cerastium vulgatum** L. Fl. Suec. 2 : 158. 1755 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 228. 1874 ; Rau, High Alt. Fl. Pl. 78. 1975.

Hairy, tomentose herb. Cymes many flowered.

*Fl. & Fr.* : May - July.

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

Throughout the temperate and subalpine regions of India.

**Cucubalus baccifer** L. Sp. Pl. 414. 1753 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 222. 1874 ; Nair, Fl. Bash. Himal. 35. 1977.

Rambling, pubescent diffusely branched herb. Flowers yellow-green. Capsule berry like, blue - black, globose.

*Fl. & Fr.* : June - September.

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

Temperate Himalaya.

**Dianthus anatolicus** Boiss. Diagn. Ser. 1 (1) : 22. 1843 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 214. 1874. *D. parviflorus* Boiss. Diagn. Ser. 1 (1) : 22. 1843. *D. kotschyanus* Boiss. Diagn. Ser. 1 (B) : 68. 1849.

Densely tufted herbs. Leaves narrow with a thick midrib and margin. Flowers pinkish red.

*Fl. & Fr.* : June - October.

Lahul and Spiti (DD).

## Western Himalaya and Western Tibet.

**Dianthus angulatus** Royle, Ill. Bot. Himal. Mount. 79. 1834 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 215. 1874 ; Collett, Fl. Siml. 45. 1902 ; Rau, High Alt. Fl. Pl. 78. 1975 ; Nair, Fl. Bash. Himal. 35. 1977.

Rigid herbs. Leaves linear, serrulate. Flowers with fimbriate petals, pinkish white.

*Fl. & Fr.* : May October.

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

## Western Himalaya.

**Dianthus orientalis** Adams in Weber & Mohr. Beitr. 1 : 54. 1805. *D-fimbriatus* Bieb. Fl. Taur. Cauc. 1 : 332. 1808 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 215. 1874.

Erect, stout, woody, suffruticose herbs. Flowers white lilac or pink.

*Fl. & Fr.* : June September.

Lahul and Spiti (DD).

## Western Tibet and Himalchal Pradesh.

**Dianthus seguieri** Vill. Hist. Pl. Dauph. 1 : 330. 1786 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 215. 1874.

Erect, leafy herbs. Flowers rosy, surrounded with leafy bracts.

*Fl. & Fr.* : June September.

Simla (LWG).

## Western Tibet, Himachal Pradesh and Ladakh.

**Drymaria diandra** Blume, Bijdr. 62. 1825 ; Nair, Fl. Bash. Himal. 36. 1977. *D. cordata* auct. (non Willd) Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 244. 1874.

Diffuse, glabrous herbs. Flowers in cymes. Capsule ovoid.

*Fl. & Fr.* : May September.

Simla (DD).

Tropical and subtropical parts of India.

**Gypsophila cerastioides** D. Don, Prodr. Fl. Nepal. 213. 1825 ; Edgew. et Hook.f. in Hook. f. Fl. Brit. India 1 : 217. 1874 ; Collett, Fl. Siml. 45. 1902 ; Rau, High Alt. Fl. Pl. 78. 1975 ; Nair Fl. Bash. Himal. 36. 1977.

Hoary pubescent herbs. Leaves ciliate. Flowers lilac.

*Fl. & Fr.* : January October.

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

Temperate Western Himalaya, Bhutan and Assam.

**Herniaria hirsuta** L. Sp. Pl. 218. 1753 ; Brummitt in Fl. Turkey 2 : 248. 1967. *H. anerca* DC. in Lam. & DC. Fl. Fr. ed. 6. 376. 1815. *H. hirsuta* var. *cinerea* (DC.) Loret & Barr. Fl. Montp. 1 : 243. 1876.

*Fl. & Fr.* : June September.

Lahul and Spiti (BSD).

North Western Himalaya.

**Lepyrodiclis halosteoides** (C. A. Meyer) Fenzl. ex Fisch. & Mey. Enum. Pl. Nov. Schrenk 1 : 93 & 110. 1841 ; Rau, High Alt. Fl. Pl. 78. 1975 ; Nair, Fl. Bash. Himal. 36. 1977. *Gouffeia holosteoides* C. A. Meyer, Verz. Pfl. Cauc. 217. 1831. *Arenaria holosteoides* (C. A. Meyer) Edgew. ex Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 241. 1874.

Glandular pubescent, dichotomously branched herbs. Flowers white, nodding.

*Fl. & Fr.* : July August.

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

Western temperate Himalaya and Western Tibet.

**Lychnis indica** Benth. in Royle, Ill. Bot. Himal. Mount. 81. 1839 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 225. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975 ; Nair, Fl. Bash. Himal. 37. 1977.

Glandular pubescent herb. Flowers white tinged with green, petals with 2-fid lobes.

*Fl. & Fr.* : July October.

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

Temperate Himalaya.

**Lychnis pilosa** Edgew. in Trans. Linn. Soc. 20 : 34. 1846 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 226. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975.

Herbs covered with long, spreading, flaccid hairs and woolly carpophores.

*Fl. & Fr.* : June August.

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

Western temperate Himalaya.

**Minuartia biflora** (L.) Schinz. & Thell. in Bull. Herb. Boiss. Ser. 2. 7 : 404. 1907 ; Rau, High Alt. Fl. Pl. 79. 1975. *Stellaria biflora* L. Sp. Pl. 422. 1753.

Leafy tufted herb. Flowers pinkish white.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD).

Western Himalaya.

**Minuartia foliosa** (Royle ex Edgew. et Hook. f.) Majumdar in Journ. Indian Bot. Soc. 44 : 142. 1965 ; Rau, High Alt. Fl. Pl. 79. 1975. *Arenaria foliosa* Royle ex Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 236. 1874. *Minuartia lineata* (C. A. Mey.) Bornm. in Beih. Bot. Centralb. 27 (2) : 381. 1910.

Leafy, tufted, glabrous herbs. Flowers pinkish white. Capsule 3 valved, seeds pale brown.

*Fl. & Fr.* : May October.

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

Western subalpine Himalaya.

**Minuartia kashmirica** (Edgew.) Matt. in Engl. Jahrb. 57. Beibl. 126 : 32. 1921 ; Nair, Fl. Bash. Himal. 37. 1977. *Arenaria kashmirica* Edgew. in Hook. f. Fl. Brit. India 1 : 236. 1874.

Glandular pubescent herbs with many leafy branches. Flowers small, pink - white.

*Fl. & Fr.* : May September.

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

Western temperate Himalaya, Nepal and Tibet.

**Myosoton aquaticum** (L.) Moench. Meth. 225. 1794 ; Clapham in Fl. Eur. 1 : 146. 1964. *Stellaria aquatica* (L.) Scopoli, Fl. Carniol. ed. 2. 1 : 319. 1772 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 229. 1874 ; Collett, Fl. Siml. 52. 1902 ; Nair, Fl. Bash. Himal. 37. 1977. *Cerastium aquaticum* L. Sp. Pl. 439. 1753. *Malachium aquaticum* (L.) Fries, Fl. Holl. 77. 1817.

Viscid pubescent, decumbent herbs. Leaves membranous. Flowers axillary. Seeds globose, tubercled.

*Fl. & Fr.* : May September.

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

Temperate Himalaya.

**Polycarpa corymbosa** Lamk. Tab. Encycl. 2 : 129. 1797 ; Wight Icon. t. 712. 1843 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 245. 1874. *Achyrauthes corymbosa* L. Sp. Pl. 205. 1753.

Hoary, tomentose, dichotomously branched herbs. Flowers in dense, much branched cymes.

*Fl. & Fr.* : June October.

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

Throughout India.

***Pseudostellaria kashmiriana*** Schaeftlein in *Phyton* (Austria) 7 : 190. 1957 ; Nair, *Fl. Bash. Himal.* 38. 1977. *Stellaria bulbosa* auct (non Wulfen) Edgew. et Hook. f. in Hook. f. *Fl. Brit. India* 1 : 231. 1874 ; Collett, *Fl. Siml.* 52. 1902.

Glabrous herbs with creeping rootstock and small tubers. Flowers 1 or 2, long stalked. Seeds few, large, tuberculate,

*Fl. & Fr.* : May August.

Kulu (DD).

Temperate Himalaya.

***Sagina saginoides*** (L.) Karsten, *Deutsche Fl. Pnern. - med. Bot.* 20. 539. 1882 ; Rau, *High Alt. Fl. Pl.* 79. 1975 ; Nair, *Fl. Bash. Himal.* 37. 1977. *Spergula saginoides* L. *Sp. Pl.* 1 : 441. 1753. *sagina procumbens* auct (non L. 1753). Edgew. et Hook. f. in Hook. f. *Fl. Brit. India* 1 : 242. 1874 ; Collett, *Fl. Siml.* 53 1902.

Bright green, tufted herbs. Flowers very small, white.

*Fl. & Fr.* : May September.

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

Temperate and alpine Himalaya.

***Silene caespitella*** Williams in *J. Linn. Soc. Bot.* 38 : 403. 1909 ; Majumdar in *Bull. Bot. Surv. India* 15 : 39. 1973.

*Fl. & Fr.* : July August.

Lahul and Spiti (DD).

Temperate Himalaya.

**Silene chambaensis** Majumdar in Journ. Indian Bot. Soc. 42 : 649. 1964. *Lychnis stewartii* Edgew. in Hook. f. Fl. Brit. India 1 : 224. 1874.

Wiry, hoary pubescent herbs. Leaves very narrow. Flowers white. Carpophores densely woolly.

*Fl. & Fr.* : June September.

Lahul and Spiti (DD).

Western Himalaya.

**Silene conoidea** L. Sp. Pl. 418. 1753 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 218. 1874 ; Collett, Fl. Siml. 47. 1902 ; Nair, Fl. Bash. Himal. 38. 1977.

Erect, glandular pubescent herbs. Flowers few in terminal panicles, pink. Capsule ovoid, hard, enclosed in inflated calyx.

*Fl. & Fr.* : May - July.

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

Himalaya and North India.

**Silene duthiei** Majumdar in Journ. Indian Bot. Soc. 42 : 648. 1964. *Lychnis brachypetala* Hurnem. Hert. Hafn. Suppl. 51 : Edgew. et Hook. f. in Hook. f. Brit. India 1 : 223. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975.

Slender, hoary herbs. Leaves very narrow. Flowers nodding, pale - red to off white. Seeds reniform, dark, granulate.

*Fl. & Fr.* : June September.

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

Alpine Himalaya.

**Silene edgeworthii** Bocquept in Candollea 22 : 13. 1967 ; Majumdar in Bull. Bot. Surv. India 15 : 42. 1973. *Lychnis fimbriata* Benth. in Royle, Ill. Bot. Himal. Mount. 80. t. 20. B. 1834 ; Collett, Fl. Siml. 48. 1902 ; Nair, Fl. Bash. Himal. 36. 1977. *L. indica* Benth. var. *fimbriata* (Benth.) Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 225. 1874.

Viscidly glandular pubescent herbs. Flowers nodding, purple.



*Fl. & Fr.* : July - October.

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

Temperate Himalaya.

**Silene edoardi** Bocquet in *Condollea* 22 : 14. 1967 ; Majumdar in *Bull. Bot. Surv. India* 15 : 42. 1973.

*Fl. & Fr.* : June - September.

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

Western Himalaya.

**Silene falconeriana** Benth. ex Royle, *Ill. Bot. Himal. Mount.* 79. t. 20. 1834 ; Edgew. et Hook. f. in Hook. f. *Fl. Brit. India* 1 : 220. 1874 ; Collett, *Fl. Siml.* 47. 1902 ; Nair, *Fl. Bash. Himal.* 38. 1977.

Erect, viscidly pubescent herbs. Flowers white. Seeds minute, granulate.

*Fl. & Fr.* : June October.

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

Western Himalaya.

**Silene gallica** L. *Sp. Pl.* 417. 1753 ; Edgew. et Hook. f. in Hook. f. *Fl. Brit. India* 1 : 218. 1874.

Laxly pilose, erect herbs. Flowers red - white, upper sessile, lower peduncled. Seeds small, striate - tuberculate.

*Fl. & Fr.* : June October.

Chamba (DD).

Western Himalaya.

**Silene indica** Roxb. ex Otth in *DC. Prodr.* 1 : 368. 1824 ; Majumdar in *Bull. Bot. Surv. India* 15 : 42. 1973.

Dicotomously branched herbs. Petals 2 - fid. style 3.

*Fl. & Fr.* : May September.

Kinnaur (DD).

Western Himalaya.

**Silene kunawarensis** Benth. in Royle, Ill. Bot. Himal. Mount. 79. 1834 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 220. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975 ; Nair, Fl. Bash. Himal. 39. 1977.

*Fl. & Fr.* : July October.

Kinnaur (DD).

Western Himalaya.

**Silene laxantha** Majumdar in Journ. Indian Bot. Soc. 42 : 650. 1964. *Lychnis pilosa* (Edgew.) Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 226. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975. *Melandrium pilosum* Edgew. in Trans. Linn. Soc. 20. 34. 1846. pp..

Herbs clothed with long, flaccid hairs. Seeds reniform, granulate.

*Fl. & Fr.* : August September.

Kulu (DD).

Western temperate Himalaya and Nepal.

**Silene nepalensis** Majumdar in Journ. Indian Bot. Soc. 42 : 649. 1963. *Lychnis multicaulis* Wall. ex Royal, Ill. Bot. Himal. Mount 80. 1834 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 224. 1874.

Tall, laxly pubescent herbs. Flowers few on elongate raceme.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD).

Temperate Himalaya.

**Silene nigrescens** (Edgew.) Majumdar in Journ. Indian Bot. Soc. 42 : 647. 1963. *Lychnis nigrescens* Edgew. in Hook. f. Fl. Brit. India 1 : 223. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975. *Melandrium nigrescens* Williams in J. Linn. Soc. Bot. 38 : 405. 1909.

Glandular pubescent, leafy herbs. Flowers purplish. Capsule brown tomentose.

*Fl. & Fr.* : May September.

Lahul and Spiti (DD).

Alpine Sikkim Himalaya and Himachal Pradesh.

*Silene madens* Majumdar in Journ. Indian Bot. Soc. 42 : 648. 1964, *Lychnis macrorhiza* Benth. in Royle, Ill. Bot. Himal. Mount. 80. 1834 (non Roxb.) ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 223. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975. *Melandrium macrorhizum* (Benth.) Walp. Rep. 1 : 280. 1842.

Glandular - pubescent herbs.

*Fl. & Fr.* : July August.

Lahul and Spiti (BSD, DD).

Alpine western Himalaya and Nepal.

*Silene persica* Boiss. Diagn. Pl. Nov. Or. Ser. 1 : 27. 1842. ssp. *moorcroftiana* (Rohrb.) Chowdhuri in Notes Roy. Bot. Gard. Edinb. 22 (3) : 267. 1957 ; Rau, High Alt. Fl. Pl. 79. 1975. *S. moorcroftiana* Wall. ex Rohrb. Mon. Sil. 129. 1868 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 219. 1874 ; Blatter, Beaut. Fl. Kash. 1 : t. 14. f. 2. 1928.

Finely pubescent, densely tufted herbs. Flowers red - white. Seeds compressed.

*Fl. & Fr.* : June September.

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

Western Himalaya.

*Silene repens* Patrin in Pers. Syn. Pl. 1 : 500. 1805 ; Chapter & Walters in Fl. Euro. 1 : 170. 1964.

*Fl. & Fr.* : June August.

Lahul and Spiti (DD).

Western Himalaya.

**Silene tenuis** Willd. Enum. Hort. Berol. 474. 1816 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 219. 1874 ; Collett, Fl. Siml. 47. 1902 ; Rau, High Alt. Fl. P. 79. 1975 ; Nair, Fl. Bash. Himal. 39. 1977.

Viscid or glabrous herbs. Flowers in short raceme, yellow brown.

*Fl. & Fr.* : June August.

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

Western Himalaya.

**Silene thomsonii** Majumdar in Journ. Indian Bot. Soc. 42. 650. 1964.  
**Lychnis nutans** Benth. in Royle, Ill. Bot. Himal. Mount. 80. 1834 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 225. 1874 ; Collett, Fl. Siml. 48. 1902 ; Rau, High Alt. Fl. Pl. 79. 1975 ; Nair, Fl. Bash. Himal. 37. 1977.

Finely pubescent, diffusely dichotomously branched herbs. Flowers purplish - white.

*Fl. & Fr.* July September.

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

Temperate Himalaya.

**Silene viridiflora** forma **webbiana** Rohrb. Monog. Silene, 215. 1868 ; Majumdar in Bull. Bot. Surv. India 15 : 42. 1973. *S. webbiana* Wall. ex Edgew. et Hook. f. in Hook. f. Fl. Brit India 1 : 220. 1874.

Tall, slender, minutely pubescent herbs. Flowers greenish white.

Sirmur, Himachal Pradesh (vide Hook. f. FBI. I. 1874).

**Silene viscosa** (L.) Pers. Synops. 1 : 497. 1805. *Cucubalus viscosus* L. Sp. Pl. 414. 1753. *Silene griffithii* Boiss. Diag. ser. 2. 1 : 76. 1854 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 220. 1874 ; Collett, Fl. Siml. 48. 1902 ; Nair, Fl. Bash. Himal. 38. 1977.

Hoary or woolly robust herbs. Flowers white.

*Fl. & Fr.* : May September.

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

Western Himalaya.

***Silene vulgaris*** (Moench) Garcke, Fl. Nord. Mittel Deutsch ed. 9. 64. 1869 ; Rau, High Alt. Fl. Pl. 79. 1975. *Behen vulgaris* Moench, Meth, 709. 1794. *Silene inflata* (Salisb.) Smith, Fl. Brit. 467. 1800 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 218. 1874 ; Collett. Fl. Siml. 47. 1902.

Glabrous herbs. Leaves ovate, pale green. Flowers few, drooping, in loose terminal panicles, white. Calyx inflated.

*Fl. & Fr.* : April - September.

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

Temperate Himalaya.

***Silene wahlbergella*** Chowdhuri in Notes Roy. Bot. Gard. Edinb. 22 : 237. 1957. *Lychnis apetala* L. Sp. Pl. 437. 1753 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 222. 1874 ; Rau, High Alt. Fl. Pl. 79. 1975.

Glandular pubescent, short herbs. Flowers nodding, purplish.

*Fl. & Fr.* : July - August.

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

Alpine Himalaya.

***Spergula arvensis*** L. Sp. Pl. 440. 1753 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 243. 1874 ; Collett, Fl. Siml. 39. 1902 ; Nair, Fl. Bash. Himal. 39. 1977.

Green herbs with geniculate branches. Leaves in false whorls, fleshy. Flowers white. Seeds black.

*Fl. & Fr.* : May - August.

Simla (DD).

Throughout India.

***Stellaria alsine*** Grimm in Nov. Act. Acad. Leopcaral. 3. App. 313. 1767 ; Nair, Fl. Bash. Himal. 39. 1977. *S. uliginosa* auct. (non Murr.) Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 233. 1874.

Branched, leafy herbs.

*Fl. & Fr.* : May - August.

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

Temperate and alpine Himalaya.

**Stellaria decumbens** Edgew. in Trans. Linn. Soc. 20 : 35. 1846 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 234. 1874 ; Nair, Fl. Bash. Himal. 40. 1977.

Laxly or densely tufted, very shining herbs.

*Fl. & Fr.* : May - September.

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

Alpine and subalpine Himalaya.

**Stellaria himalayensis** Majumdar in Journ. Indian Bot. Soc. 44 : 141. 1965 ; Rau, High Alt. Fl. Pl. 80. 1975. *S. latifolia* auct (non Pers.) Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 231. 1874 ; Collett, Fl. Siml. 52, 1902.

Decumbent, flaccid, laxly tufted herbs. Leaves orbicular. Flowers solitary, long stalked.

*Fl. & Fr.* : May September.

Kangra (RRL), Kinnaur (DD), Kulu (DD).

Western temperate Himalaya and Nepal.

**Stellaria media** (L.) Villars, Hist. Pl. Dauph. 3 : 615. 1789 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 230. 1874. *p.p.* ; Collett, Fl. Siml. 52. 1902. *Alsine media* L. Sp. Pl. 272. 1753.

Much branched, flaccid, herbs. Flowers green. Seeds brown, acutely tubercled.

*Fl. & Fr.* : April September.

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

Throughout India.

**Stellaria monosperma** Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 215. 1825 forma **paniculata** (Edgew.) Mizushima in Journ. Jap. Bot. 32 : 248. 1957 ; Rau, High Alt. Fl. Pl. 80. 1975 ; Nair, Fl. Bash. Himal. 40.

1977. *S. paniculata* Edgew. in Trans. Linn. Soc. 20 : 35. 1846 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 229. 1874. *S. crispata* Wall. ex Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 229. 1874.

Tall, glabrous or laxly pubescent herbs. Flowers white.

*Fl. & Fr.* : August October.

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

Temperate Himalaya.

*Stellaria palustris* Retz. Fl. Scand. Prodr. ed. 2. 106. 1795 ; Rau, High Alt. Fl. Pl. 80. 1975. *S. glauca* Withering, Bot. Arr. Brit. Pl. ed. 3.2 : 420. 1796 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 233. 1874.

Erect, glabrous herbs. Leaves oblong, sessile with thickened margins.

*Fl. & Fr.* : July August.

Lahul and Spiti (BSD, DD).

Western temperate Himalaya.

*Stellaria patens* D. Don, Prodr. Fl. Nepal. 215. 1825 ; Rau, High Alt. Fl. Pl. 80. 1975 ; Nair, Fl. Bash. Himal. 41. 1977. *S. longissima* Wall. ex Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 232. 1874.

Decumbent, slender, glabrous herbs. Leaves sessile, softly silky. Seeds dark - brown, minute.

*Fl. & Fr.* : June - August.

Kinnaur (DD), Simla (BSD).

Temperate Himalaya.

*Stellaria semivestita* Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 240. 1874 ; Majumdar in Bull. Bot. Surv. India 15 : 40. 1973.

Stout, woolly herbs. Leaves recurved from the base. Flowers very woolly.

*Fl. & Fr.* : July October.

Chamba (DD).

Western temperate Himalaya and Nepal.

**Stellaria subumbellata** Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 233. 1874 ; Majumdar in Bull. Bot. Surv. India 15 : 42. 1973 ; Rau, High Alt. Fl. Pl. 80. 1975.

Slender, glabrous herbs. Leaves sessile. Flowers solitary. Seeds pale brown.

*Fl. & Fr.* : June September.

Lahul and Spiti (BSD).

Alpine Himalaya.

**Thylacospermum caespitosum** (Camb.) Schisch. in Sched. ad Herb. Fl. Ross. 9 : 90. 1932. *Periandra caespitosa* Camb. in Jacq. Voy. Bot. Ind. 4 : 27. t. 29. 1844. *T. rupifragum* (Kar. & Kir.) Schrenk, Enum. Pl. Nov. 2 : 53 1842 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 248. 1874. *Bryomorpha rupifraga* Kar. & Kir. in Bull. Soc. Nat. Mosc. 15 : 780, 1842.

Cushion forming, glabrous herbs. Leaves small, densely imbricate.

*Fl. & Fr.* : July September.

Alpine western Tibet and cold, arid regions of Himalaya.

**Vaccaria pyramidata** Medicus, Bot. 1 : 96. 1789 ; Nair, Fl. Bash. Himal. 41. 1977. *Saponaria vaccaria* L. Sp. Pl. 459. 1753 ; Edgew. et Hook. f. in Hook. f. Fl. Brit. India 1 : 217. 1874.

Tall, robust, glabrous herbs. Flowers rose red. Seeds large, black, globose.

*Fl. & Fr.* : May September.

Mandi (LWG), Simla (DD).

Throughout India.



## PORTULACACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Portulaca oleracea** L. Sp. Pl. 445. 1753 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 246. 1874 ; Ghafoor in Fl. W. Pak. 51 : 3. 1973 ; Nair, Fl. Bash. Himal. 41. 1977.

Prostrate, subsucculent, glabrous herbs. Flowers yellow.

*Fl. & Fr.* : May October.

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

Throughout India.

**Portulaca pilosa** L. Sp. Pl. 445. 1753 ; Ghafoor in Fl. W. Pak. 51 : 7. 1973.

Prostrate, fleshy herbs. Flowers pink. Seed numerous, reniform, dark brown black, papillate.

*Fl. & Fr.* : June September.

Hamirpur (BSD).

Throughout India.

**Portulaca quadrifida** L. Mant. Pl. 1 : 73. 1767 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 247. 1874 ; Ghafoor in Fl. W. Pak. 51 : 2. 1973.

Herb with diffuse, filiform stem rooting at the nodes. Flowers yellow. Seeds minutely tubercled.

*Fl. & Fr.* : May August.

Kulu (BSIP).

Throughout the warmer parts of India.

## TAMARICACEAE

B. M. WADHWA AND H. J. CHOWDHERY

*Myricaria elegans* Royle, Ill. Bot. Himal. Mount. 1 : 214. 1839 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 250. 1874 ; Brandis, For. Fl. N. W. & Cent. India 24. 1874.

Bushy shrub with smooth, striate stem. Bracts acuminate with narrowly membranous margins.

*Fl. & Fr.* : May August.

Kinnaur (DD).

Western Himalaya.

*Myricaria germanica* (L.) Desv. Ann. Sci. Nat. Ser. 1. 4 : 349. 1825 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 250. 1874. *Tamarix germanica* L. Sp. Pl. 271. 1753 ; Brandis, For. Fl. N. W. & Cent. India 23. 1874.

Busy shrub with slender, striate stem, glaucous green when young. Bracts with broadly membranous margins.

*Fl. & Fr.* : May October.

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

Temperate and alpine Himalaya from Himachal Pradesh to Sikkim.

## ELATINACEAE

H. J. CHOWDHERY

*Elatine gracilis* Mason in Madrono, 13 : 240. 1956.

Prostrate herbs rooting at the nodes. Flower one at each node. Seeds with 25-35 pits, slightly curved.

*Fl. & Fr.* : August October.

Mandi (BSD).

Himachal Pradesh.

## HYPERICACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Hypericum dyeri** Rehder in Journ. Arn. Arb. 20 : 422. 1939 ; Nair, Fl. Bash. Himal. 42. 1977 ; Robson in Bull. Brit. Mus. Nat. Hist. 5 (6) : 384. 1977. *H. lysimachioides* ex Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 254. 1874 (non Boiss.) ; Collett, Fl. Siml. 56. 1902 ; Parker, For. Fl. Punjab ed. 3. 28. 1956.

Glabrous shrubs. Flowers yellow.

*Fl. & Fr.* : June October.

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

Western temperate Himalaya upto Nepal.

**Hypericum elodeoides** Choisy in DC. Prodr. 1 : 552. 1824 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 255. 1874 ; Collett, Fl. Siml. 56. 1902 ; Robson in Bull. Brit. Mus. Nat. Hist. 5 (6) : 336. 1977 ; Nair, Fl. Bash. Himal. 42. 1977.

Herbs with terete stem. Flowers yellow.

*Fl. & Fr.* : July October.

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

Temperate Himalaya.

**Hypericum hookerianum** Wt. & Arn. Prodr. Fl. Ind. Or. 1 : 99. 1834 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 254. 1874. (excl. var. *leschen-*

*aultii*); Robson in Bull. Brit. Mus. Nat. Hist. 5 (6) : 318. 1977. *Norysca hookeriana* (Wt. & Arn.) Wight, Illustr. Ind. Bot. 1 : 113. 1840.

Glabrous shrub with red brown branches. Leaves obtuse, mucronate, rusty beneath. Flowers golden yellow.

*Fl. & Fr.* : June September.

Simla (DD).

Himalaya, Khasia and Nilghiri hills.

**Hypericum japonicum** Thunb. ex Murray, Syst. Veg. ed. 14. 702. 1784 ; Royle, Illustr. Bot. Himal. Mount 131. t. 24. f. 2. 1834 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 256. 1874 ; Robson in Bull. Brit. Mus. Nat. Hist. 5 (6) : 339. 1977. *Brathys japonica* (Thunb. ex Murray) Wight, Illustr. Ind. Bot. 1 : 113. 1840.

Herbs. Flowers yellow.

*Fl. & Fr.* : June August.

Chamba (DD).

Temperate, sub tropical Himalaya.

**Hypericum leschenaultii** Choisy in DC. Prodr. 1 : 545. 1824 ; Robson in Fl. Males. Ser. 1. 8 : 17. 1974 et. in Bull. Brit. Mus. Nat. Hist. 5 (6) : 318. 1977. *Norysca leschenaultii* (Choisy) Bl. Mus. Bot. Lugd. Bat. 2 : 24. 1856. *Hypericum hookerianum* var. *leschenaultii* (Choisy) Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 254. 1874 ; Nair, Fl. Bash. Himal. 43. 1977. *Norysca hookerianum* var. *leschenaultii* (Choisy) Kimura in Fl. E. Himal. 210. 1966.

Glabrous shrubs. Flowers golden yellow, sepals acute.

*Fl. & Fr.* : June September.

Kinnaur (DD).

Himalaya.

**Hypericum monanthemum** Hook f. & Thoms. ex Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 256. 1874 ; Robson in Bull. Brit. Mus. Nat. Hist. 5 (6) : 335. 1977.

Erect, reddish brown shrubs. Leaves sessile with black marginal dots beneath. Flowers with a pair of glandular - fringed bracts.

*Fl. & Fr.* : June September.

Kinnaur (BSD).

Temperate Himalaya.

**Hypericum napaulense** Choisy in DC. Prodr. 1 : 552. 1824 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 256. 1874 ; Robson in Bull. Brit. Mus. Nat. Hist. 5 (6) : 336. 1977.

Slender, diffuse or prostrate shrubs. Leaves sessile, stem clasping.

*Fl. & Fr.* : July November.

Simla (DD).

Temperate Himalaya.

**Hypericum oblongifolium** Choisy, Prodr. Monogr. Hyper. 42. t. 4. 1821 ; Nair, Fl. Bash. Himal. 41. 1977. *H. cernuum* Roxb. ex D. Don, Prodr. Fl. Nep. 218. 1825 ; Roxb. Fl. Ind. ed. Carey, 2. 3 : 400. 1832 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 253. 1874 ; Collett, Fl. Siml. 55. 1902 ; Parker, For. Fl. Punjab ed. 3. 29. 1956.

Glabrous shrubs. Flowers white turning yellowish. Capsule conical.

*Fl. & Fr.* : April October.

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

Western temperate Himalaya and Nepal.

**Hypericum perforatum** L. Sp. Pl. 715. 1753 : Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 255. 1874 ; Collett, Fl. Siml. 56. 1902 ; Robson in Fl. Europ. 2 : 269. 1968 et in Bull. Brit. Mus. Nat. Hist. 5 (6) : 322. 1977 ; Nair, Fl. Bash. Himal. 42. 1977.

Herbs with angled branches. Flowers yellow, black dotted at the margins.

*Fl. & Fr.* : May October.

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

Temperate Western Himalaya.

**Hypericum uralum** Buch. Ham. ex D. Don in Bot. Mag. 50 : t. 2375. 1823 ; Robson in Fl. Males. Ser. 1.8 : 18. 1974 et in Bull. Brit. Muse. Nat. Hist. 5 (6) : 318. 1977. *H. patulum* (non Thunb.) Wall. Cat. No. 4809. Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 254. 1874 ; Collett, Fl. Siml. 56. 1902 ; Parker, For. Fl. Punjab ed. 3. 29. 1956 ; Nair, Fl. Bash. Himal. 42. 1977. *Norysca urala* (Buch. Ham. ex D. Don) Koch, Hort. Dendr. 66. 1853.

Shrubs. Leaves pale and glandular dotted beneath.

*Fl. & Fr.* : July October.

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

Throughout temperate Himalaya.

## THEACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Camellia sinensis** (L.) O. Ktze. in Act. Hort. Petrop. 10 : 195. 1887. *Thea sinensis* L. Sp. Pl. 1 : 515. 1753. var. **assamica** (Masters) Kitamura in Act. Phytotax Geobot. 14 : 59. 1950. *Thea assamica* Masters in Jour. Agri. & Hort. Soc. Ind. 3 : 63. 1844. *Camellia theifera* Griffith Notul. 4 : 558. 1854 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 292. 1874. *Camellia thea* Link. Enum. Hort. Berol. 2 : 73. 1821 22 ; Parker, For. Fl. Punjab ed. 3. 30. 1956.

Evergreen shrub. Flowers white.

*Fl. & Fr.* : June September.

Kangra (RRL), Kulu (RRL).

The tea plant - cultivated for tea leaves.

**Eurya acuminata** DC. Mem. Ternstr. 26. 1822 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 285. 1874 ; Parker, For. Fl. Punjab ed. 3. 29 1956.

Shrub with smooth brown bark and hairy young shoots. Flowers white.

*Fl. & Fr.* : September December.

Simla (DD).

Temperate and sub tropical Himalaya.

### SAURAUACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Saurauia napaulensis** DC. Mem. Ternstr. 29. 1822 ; Wall. Pl. Asia. Rar. 2 : 40. 70. L. 178. 1831 ; Thiselton Dyer in Hook. f. Fl. Brit. India 1 : 286. 1874 ; Parker, For. Fl. Punjab ed. 3. 30. 1956.

A moderate sized tree. Flowers pink. Fruits green with red brown seeds.

*Fl. & Fr.* : January August.

Chamba (DD).

Temperate Himalaya.

### MALVACEAE

B. M. WADHWA, H. J. CHOWDHERY AND R. PRASAD

**Abelmoschus crinitus** Wall. Pl. Asiat. Rar. 1 : 39. t. 44. 1830 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 475. 1972 ; Nair, Fl. Bash. Himal. 43. 1977. *Hibiscus cancellatus* Roxb. Fl. Ind. ed. 3 : 201. 1832 ; Masters in Hook. f. Fl. Brit. India 1 : 342. 1874 ; Collett, Fl. Siml. 60. 1902.

Annual bristly herbs. Root fusiform. Flowers pale yellow with dark purple centre.

*Fl. & Fr.* : July August.

Simla (DD).

North Western India, Himalaya.

**Abelmoschus esculentus** (L.) Moench. Meth. 617. 1794 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 475. 1972 ; Nair, Fl. Bash. Himal. 43. 1977. *Hibiscus esculentus* L. Sp. Pl. 696. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 343. 1874.

Annual herbs. Flowers yellow with crimson centre.

*Fl. & Fr.* : July September.

Kinnaur (BSD).

Cultivated throughout India for tender fruits known as Ladies finger, sometimes grows as an escape from cultivation.

**Abelmoschus manihot** (L.) Medik. Malv. 46. 1787. ssp. **manihot**. *Hibiscus manihot* L. Sp. Pl. 696. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 341. 1874.

Annual subglabrous herbs. Leaves deeply palmately lobed. Flowers yellow with a purple centre. Capsule oblong, pointed.

*Fl. & Fr.* : August October.

Kinnaur (BSD).

Naturalised in some parts of India. (Introduced from China).

**Abelmoschus manihot** (L.) Medik. ssp. **tetraphyllus** (Roxb. ex Hornem.) Borss. var. **pungens** (Roxb.) Hochr. Candollea 2 : 87. 1924. *Hibiscus pungens* Roxb. Fl. Ind. ed. 2. 3 : 213. 1832 ; Masters in Hook. f. Fl. Brit. India 1 : 341. 1874 ; Nair, Fl. Bash. Himal. 44. 1977. *Abelmoschus pungens* Voigt, Hort. Suburb. Colc. 114. 1845.

Erect herbs. Branches ascending. Leaves deeply palmately lobed. Flowers yellow with purple centre.



*Fl. & Fr.* : July September.

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

Tropical Himalaya.

**Abutilon bidentatum** Hochst. in A. Richard, Tent. Fl. Abyss. 1 : 68. 1847 ; Masters in Hook. f. Fl. Brit. India 1 : 326. 1874 ; Parker, For. Fl. Punj. ed. 3. 36. 1956 ; Nair, Fl. Bash. Himal. 43. 1977.

Erect shrubs up to 2.5 m high. Stem green. Leaves cordate, ovate acuminate, crenate, toothed. Carpels 15 20.

*Fl. & Fr.* : September October.

Kinnaur (DD), Simla (DD).

North Western India.

**Abutilon grandifolium** Sweet, Hort. Brit. ed. 1. 53. 1826 27. *A. molle* Sweet, Hort. Brit. ed. 2. 65. 1830 ; Parker, For. Fl. Punj. ed. 3. 37. 1956.

Shrub or undershrubs. Leaves orbicular or ovate, deeply cordate. Peduncles axillary. Flowers orange - yellow. Seeds dotted with short conical, curved hairs.

*Fl. & Fr.* : May August.

A peruvian plant, cultivated and often occurs as an escape.

**Abutilon indicum** (L.) Sweet, Hort. Brit. ed. 1. 54. 1826 ; Wight, Ic. t. 12. 1838 ; Masters in Hook. f. Fl. Brit. India 1 : 326. 1874 ; Parker, For. Fl. Punj. ed. 3. 37. 1956 ; Nair, Fl. Bash. Himal. 43. 1977. *Sida indica* L. in Torner, Cent. Pl. 2 : 26. 1756.

Undershrubs growing in dry places. Stem quite woody when old. Peduncles longer than the petioles, jointed near the top. Flowers yellow. Seeds dark brown.

*Fl. & Fr.* : April June.

Kangra (RRL), Simla (BSD, LWG).

Throughout the tropical India.

**Althaea officinalis** L. Sp. Pl. 686. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 319. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 477. 1972.

Erect perennial herbs. Flowers rose red.

*Fl. & Fr.* : August September.

Kinnaur (DD).

Western Himalaya.

**Althaea rosea** (L.) Cav. Diss. 2 : 91. t. 29. f. 3. 1790 ; Masters in Hook. f. Fl. Brit. India 1 : 319. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 477. 1972 ; Nair, Fl. Bash. Himal. 44. 1977. *Alcea rosea* L. Sp. Pl. 687. 1753.

Annual herbs. Flowers white, red or pink.

*Fl. & Fr.* : April September.

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

Cultivated in gardens for its beautiful flowers (holly hock), sometimes found as an escape.

**Gossypium arboreum** L. Sp. Pl. 693. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 347. 1874 ; emend. Hutch. et al. Evol. Goss. 32. t. 4. 1947 ; Borss. in Blumea 14 : 121. 1966 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 477. 1972.

Large shrubs. Flowers large yellow with a purple centre.

*Fl. & Fr.* : July October.

Simla (DD).

Grown in gardens.

**Hibiscus cannabinus** L. Syst. Nat. ed. 10. 2 : 1149. 1759 ; Masters in Hook. f. Fl. Brit. India 1 : 339. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 478. 1972.

Annual or perennial herbs. Lower leaves cordate, upper deeply palmately lobed, petiole prickly. Flowers large, yellow with a crimson centre.

*Fl. & Fr.* : July September.

Kangra (DD).

Cultivated throughout India.

**Hibiscus lobatus** (A. Murr.) Kuntze, Rev. Gen. Pl. ed. 32 : 19. 1898 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 479. 1972 ; Nair, Fl. Bash. Himal. 44. 1977. *Solandra lobata* J. A. Murr. Commentant. Soc. Reg. Sci. Gott. 6. 20. t. 1. 1785. *Hibiscus solandra* L' Herit Strip. Nov. 1 : 103. t. 49. 1788 ; Masters in Hook. f. Fl. Brit. India 1 : 336. 1874 ; Collett, Fl. Siml. 60. 1902.

Erect, slightly villous herbs. Flowers pale yellow or white or with a purplish centre. Fruits small.

*Fl. & Fr.* : August September.

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

Hotter parts of India.

**Hibiscus sabdariffa** L. Sp. Pl. 695. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 340. 1874 ; Collett, Fl. Siml. 60. 1902 ; Borss. in Blumea 14 : 64. 1966 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 479. 1972.

Annual erect herbs. Flowers yellow. Capsule ovoid, pointed, villous, shorter than the calyx. Seeds reniform, subglabrous.

Simla (Collett, 1902).

The Rozelle or red sorrell is cultivated throughout India for its succulent, acid, red or green calyx which make excellent jelly and tarts.

**Hibiscus syriacus** L. Sp. Pl. 695. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 344. 1874 ; Parker, For. Fl. Punj. ed. 3. 40. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 480. 1972.

A deciduous shrub. Branches destitute of prickles. Flowers lilac-blue with dark purple centre or white.

*Fl. & Fr.* : June September.

Kangra (RRL).

Cultivated throughout India.

**Hibiscus trionum** L. Sp. Pl. 697. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 334. 1874 ; Collett, Fl. Siml. 60. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 480. 1972.

Annual, pubescent or hairy herbs. Flowers yellow with a purple spot.

*Fl. & Fr.* : July August.

Simla (BSD, DD).

Western Himalaya and Bengal.

**Kydia calycina** Roxb. Pl. Corom. 3 : 11. t. 215. 1811 ; Masters in Hook. f. Fl. Brit. India 1 : 348. 1874 ; Parker, For. Fl. Punj. ed. 3. 40. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 480. 1972.

Small deciduous trees. Leaves rounded cordate. Flowers white or pink.

*Fl. & Fr.* : July September.

Chamba (RRL).

Tropical regions of India.

**Lavatera kashmiriana** Camb. in Jacquem. Voy. Bot. 4 : 29. t. 32. 1835 ; Masters in Hook. f. Fl. Brit. India 1 : 319. 1874.

Branching, downy herbs. Flowers pink.

*Fl. & Fr.* : July - September.

Chamba (DD).

Western Himalaya and Nepal.

**Malva neglecta** Wallr. Syll. Ratisb. 1 : 140. 1824 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 481. 1972 ; Nair, Fl. Bash. Himal. 44. 1977. *M. rotundifolia* L. Sp. Pl. 688. 1753 *p.p.* ; Masters in Hook. f. Fl. Brit. India 1 : 320. 1874 ; Collett, Fl. Siml. 58. 1902.

Stellately pubescent, prostrate or decumbent herbs. Flowers pinkish white. Fruits downy.

*Fl. & Fr.* : May November.

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

Northern India.

**Malva sylvestris** L. Sp. Pl. 689. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 320. 1874 ; Collett, Fl. Siml. 58. 1902 ; Nair, Fl. Bash. Himal. 45. 1977.

Annual herbs, more or less covered with spreading hairs. Flowers pink.

*Fl. & Fr.* : June September.

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

Western Himalaya and Nepal.

**Malva verticillata** L. Sp. Pl. 689. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 320. 1874 ; Collett, Fl. Siml. 58. 1902 ; Nair, Fl. Bash. Himal. 45. 1977. *M. parviflora* auct. (non L.) Masters in Hook. f. Fl. Brit. India 1 : 521. 1874 ; Collett, Fl. Siml. 59. 1902 ; Nair, Fl. Bash. Himal. 45. 1977.

Erect annual or perennial herbs. Branches downy. Flowers crowded, pale pink.

*Fl. & Fr.* : May September.

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

Temperate Himalaya and Bengal.

**Malvastrum coromandelianum** (L.) Garcke, Bonplandia 5 : 295. 1857 ; Sant. Fl. Saurashtra 1 : 54. 1932 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 481. 1972 ; Nair, Fl. Bash. Himal. 45. 1977. *M. tricuspidatum* (Art.) A. Gray, Pl. Wright 1 : 16. 1852 ; Masters in Hook. f. Fl. Brit. India 1 : 321. 1874 ; Parker, For. Fl. Punj. ed. 3. 35. 1956. *Malva coromandelianum* L. Sp. Pl. 687. 1753.

Erect branching herbs. Flowers pale - yellow.

*Fl. & Fr.* : April September.

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

Introduced in various parts of India.

**Sida cordata** (Burm. f.) Borssum in *Blumea* 14 : 182. 1966 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 483. 1972. *Melochia cordata* Burm. f. *Fl. Ind.* 143. 1768. *Sida veronicifolia* Lamk. *Encycl.* 1 : 5. 1783 ; Parker, *For. Fl. Punj.* ed. 3. 33. 1956. *S. humilis* Willd. var. *veronicifolia* (Lamk.) Masters in Hook. f. *Fl. Brit. India* 1 : 322. 1874.

Perennial herbs. Branches usually prostrate or trailing. Leaves cordate, broadly ovate, acute or acuminate. Flowers pale yellow.

*Fl. & Fr.* : May September.

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

Throughout the hotter parts of India.

**Sida cordifolia** L. *Sp. Pl.* 684. 1753 ; Masters in Hook. f. *Fl. Brit. India* 1 : 324. 1874 ; Parker, *For. Fl. Punj.* ed. 3. 35. 1956 ; Nair, *Fl. Bash. Himal.* 46. 1977.

Small, erect perennial herbs. Peduncles jointed near the flower. Flowers yellow.

*Fl. & Fr.* : August - September.

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

Throughout the subtropical parts of India.

**Sida rhombifolia** L. *Sp. Pl.* 684. 1753 ; Masters in Hook. f. *Fl. Brit. India* 1 : 323. 1874 ; Parker, *For. Fl. Punj.* ed. 3. 34 : 1956 ; Borssum in *Blumea* 14 : 193. 1966. *S. obovata* Collett, *Fl. Siml.* 59. 1902 ; Nair, *Fl. Bash. Himal.* 46. 1977.

Small undershrubs. Leaves more or less rhomboid. Flowers yellow or white. Carpels 7 - 10.

*Fl. & Fr.* : July September.

Simla (DD).

Throughout India.

**Sida spinosa** L. Sp. Pl. 683. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 323. 1874 ; Parker, For. Fl. Punj. ed. 3. 33. 1956.

Suberect, small shrubs. Branches often with spiny tubercles below the variable leaves. Flowers white to yellow, usually pale yellow.

*Fl. & Fr.* : July September.

Chamba (DD).

Hotter parts of India.

**Urena lobata** L. Sp. Pl. 692. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 329. 1874 ; Parker, For. Fl. Punj. ed. 3. 37. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 484. 1972.

Erect, perennial herbs. Stem and branches densely woolly. Leaves variable, entire or slightly lobed. Flowers bright pink with a dark centre. Carpel armed with hooked bristles.

*Fl. & Fr.* : June October.

Chamba (DD), Kangra (DD).

Hotter parts of India.

## BOMBACACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Bombax ceiba** L. Sp. Pl. 511. 1753 quoad plantas asiaticas excl. syn. Bauhin. Robyns in Taxon 10 : 160. 1961 ; Nair, Fl. Bash. Himal. 46. 1977 ; Quiser in Fl. West Pakistan 119 : 3. 1978. *B. malabaricum* DC. Prodr. 1 : 479. 1824 ; Masters in Hook. f. Fl. Brit. India 1 : 349. 1874 ; Brandis, For. Fl. N. W. & Cent. India 31. 1874 ; Collett, Fl. Siml. 61. 1902 ; Parker, For. Fl. Punjab ed. 3. 41. 1956. *Salmalia malabarica* (DC.) Schott & Endl. Melet. Bot. 35. 1832.

Large tree. Stem covered with stout, hard conical prickles. Flowers fleshy, red or white. Capsule ovoid, downy.

*Fl. & Fr.* : February March.

Kinnaur (DD), Simla (BSIP).

Tropical Eastern Himalaya and throughout the hotter forest regions of India.

### STERCULIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

*Sterculia villosa* Roxb. ex Smith in Rees, Cyclop. 34 : n. 16: 1816 ; Roxb. Fl. Ind. 3 : 153. 1832 ; Masters in Hook. f. Fl. Brit. India 1 : 355. 1874 ; Brandis, For. Fl. N. W. & Cent. India 32. 1874 ; Parker, For. Fl. Punjab ed. 3. 43. 1956 ; Nair, Fl. Bash. Himal. 47. 1977.

Tree with white bark and large scars. Flowers pinkish. Follicles oblong, spreading, rusty villous.

*Fl. & Fr.* : June August.

Kinnaur (BSD).

Tropical Himalaya and North Western India.

### TILIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

*Corchorus aestuans* L. Syst. Nat. ed. 10. 2 : 1079. 1759 ; Ghafoor in Fl. West Pakistan 75 : 23. 1974 ; Nair, Fl. Bash. Himal. 46. 1977. *C. acutangulus* auct. (non Forssk. 1795) Lam. Encycl. Method. Bot. 2. 104. 1786 ; Masters in Hook. f. Fl. Brit. India 1 : 398. 1874 ; Collett, Fl. Siml. 65. 1902.

Annual herb with hairy stem. Capsule 3 celled, 6 angled, beak 3 fid.

*Fl. & Fr.* : August September.



Chamba (DD), Kinnaur (BSD).

Throughout the hotter parts of India.

**Corchorus depressus** (L.) Stocks in Proc. Linn. Soc. 1 : 367. 1848 ; Ghafoor in Fl. West Pakistan 75 : 22. 1974. *Antichorus depressus* L. Mant. Pl. 1 : 64. 1767. *Corchorus antichorus* Raeusch. Nom. Bot. ed. 3. 158. 1797 ; Masters in Hook. f. Fl. Brit. India 1 : 398. 1874 ; Collett, Fl. Siml. 65. 1902 ; Parker, For. Fl. Punj. ed 3. 54. 1956.

Perennial, nearly glabrous herb. Rootstock thick, woody. Capsule cylindrical, beak entire.

*Fl. & Fr.* : July September.

Simla (DD).

North Western India.

**Corchorus olitorius** L. Sp. Pl. 529. 1753 ; Masters in Hook. f. Fl. Brit. India 1 : 397. 1874 ; Collett, Fl. Siml. 64. 1902 ; Ghafoor in Fl. West Pakistan 75 : 30. 1974 ; Nair, Fl. Bash. Himal. 46. 1977.

Annual herb. Flowers yellow.

*Fl. & Fr.* : August September.

Chamba (DD), Kinnaur (BSD).

Indigenous to many parts of India. Jute.

**Corchorus trilocularis** L. Mant. Pl. 77. 1767 ; Masters in Hook. f. Fl. Brit. India 1 : 397. 1874 ; Ghafoor in Fl. West Pakistan 75 : 27. 1974 ; Nair, Fl. Bash. Himal. 46. 1977.

Annual herb. Capsule elongate, 3 - angled.

*Fl. & Fr.* : June - August.

Chamba (DD), Kinnaur (BSD).

Throughout India.

**Grewia asiatica** L. Mant. Pl. 1 : 122. 1767 ; Masters in Hook. f. Fl. Brit. India 1 : 386. 1874 ; Brandis, For. Fl. N. W. & Cent. India Rep. ed. 40. 1972 ; Ghafoor in Fl. West Pakistan 75 : 14. 1974 ; *G. subinaeqalis* DC. Prodr. 1 : 511. 1824. *G. hainesiana* Hole in Ind. For. 43 : 316. 1917 ; Parker, For. Fl. Punj. ed. 3. 50. 1956.

Small tree with soft, yellowish pubescence. Flowers yellow.

*Fl. & Fr.* : April July.

Una (BSD).

Generally cultivated.

***Grewia elastica*** Royle, *Illust. Bot. Himal. Mount.* 1 : 104. t. 22. 1834 ; Parker, *For. Fl. Punj.* ed. 3. 49. 1956 ; Ghafoor in *Fl. West Pakistan* 75 : 13. 1974. *G. vestita* Wall. *Cat.* 1814 *non. nud.* ; Brandis, *For. Fl. N. W. & Cent. India Repr.* ed. 40. 1972 ; Collett, *Fl. Siml.* 63. 1902. *G. asiatica* L. var. *vestita* Masters in Hook. f. *Fl. Brit. India* 1 : 387. 1874.

Tree. Leaves rough. Flowers orange yellow. Drupe black.

*Fl. & Fr.* : June August.

Rampur (DD).

Tropical Himalaya.

***Grewia glabra*** Bl. *Bijdr.* 115. 1825 ; Ghafoor in *Fl. West Pakistan* 75 : 11. 1974. *G. leaevigata* (non Vahl) Masters in Hook. f. *Fl. Brit. India* 1 : 389. 1874 ; Parker, *For. Fl. Punj.* ed. 3. 49. 1956 ; Brandis, *For. Fl. N. W. & Cent. India Repr.* ed. 42. 1972.

Small tree. Flowers white Drupe black.

*Fl. & Fr.* : September November.

Kangra (DD, RRL).

Eastern, Southern India and sub - Himalayan tracts.

***Grewia optiva*** Drummond ex Burret in *Notizbl. Bot. Gart. Berl.* 9 : 692. 1926 ; Ghafoor in *Fl. West Pakistan* 75 : 4. 1974. *G. oppositifolia* auct non DC. *Prodr.* 1 : 509. 1824 ; Roxb. ex Masters in Hook. f. *Fl. Brit. India* 1 : 384. 1874 ; Brandis, *For. Fl. N. W. & Cent. India Repr.* ed. 37. 1972 ; Collett, *Fl. Siml.* 63. 1902 ; Parker, *For. Fl. Punjab* ed. 3. 48. 1956 ; Nair, *Fl. Bash. Himal.* 47. 1977.

Tree. Leaves rough, toothed, lower surface pale - pubescent. Flowers pale yellow. Drupe olive - green.

*Fl. & Fr.* : May November.

Chamba (DD), Hamirpur (DD), Kangra (BSD, DD), Kinnaur (BSD, DD), Simla (DD), Solan (DD).

Common in North Western Himalaya.

**Grewia tenax** (Forssk.) Fiori, Bos. Plant Legn. Eritr. 246. 1909 ; Ghafoor in Fl. West Pakistan 75 : 7. 1974. *Chadara tenax* Forssk. Fl. Aegypt. Arab. 105. 1775. *Grewia populifolia* Vahl. Symb. Bot. 1 : 32. 1790 ; Masters in Hook. f. Fl. Brit. India 1 : 385. 1874 ; Brandis, For. Fl. N. W. & Cent. India Rep. ed 38. 1972 ; Parker, For. Fl. Punj. ed. 3. 51. 1956.

Shrub. Leaves coriaceous. Flowers white. Drupe yellowish.

*Fl. & Fr.* : July October.

Cultivated for edible fruits.

**Tilia cordata** Mill. Gard. Dict. ed. 8. N. 1. 1768 ; Bailey, Stand. Cyclop. Hort. 3 : 3347. 1930. *T. europaea* L. Sp. Pl. 514 : 1753. *p. p.*

*Fl. & Fr.* : June October.

Chamba (DD).

Cultivated.

**Tilia platyphyllos** Scop. Fl. Carn. ed. 2. 1 : 373. 1771 ; Bailey, Standard Cyclop. Hort. 3 : 3346. 1930. *T. europaea* L. Sp. Pl. 514. 1753 *p. p.*

*Fl. & Fr.* : June October.

Simla (DD).

Cultivated.

**Tilia vulgaris** Hayne, Darst. Besch. Arzn. Gewaehse 3 : t. 47 1813 ; Ghafoor in Fl. West Pakistan 75 : 2. 1974 ; Parker, For. Fl. Punjab ed. 3. 55. 1956. *T. europaea* L. Sp. Pl. 514. 1753. *T. intermedia* DC. Prodr. 1 : 513. 1824.

*Fl. & Fr.* : May October.

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

**Triumfetta annua** L. Mant. Pl. 1 : 73. 1767 ; Masters in Hook. f. Fl. Brit. India 1 : 396. 1874 ; Collett, Fl. Siml. 64. 1902 ; Ghafoor in Fl. West Pakistan 75 : 16. 1974 ; Nair. Fl. Bash. Himal. 47. 1977.

Annual herbs, glabrous. Stem with a line of hairs along one side. Flowers orange. Capsule glabrous.

*Fl. & Fr.* : May - October.

Kinnaur (DD).

Tropical Himalaya, from Himachal Pradesh to Sikkim.

**Triumfetta pilosa** Roth. Nov. Pl. Sp. 223. 1821 ; Masters in Hook. f. Fl. Brit. India 1 : 394. 1874 ; Collett, Fl. Siml. 63. 1902 ; Parker, For. Fl. Punj. ed. 3. 53. 1956 ; Ghafoor in Fl. West Pakistan 75 : 17. 1974 ; Nair, Fl. Bash. Himal. 47. 1977.

Perennial, rough herb with long bristles. Flowers yellow. Capsule densely pubescent.

*Fl. & Fr.* : January - September.

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

Throughout tropical India.

**Triumfetta rhomboidea** Jacq. Enum. Pl. Carib. 22. 1760 ; Masters in Hook. f. Fl. Brit. India 1 : 395. 1874 ; Collett, Fl. Siml. 64. 1902 ; Parker, For. Fl. Punj. ed. 3. 54. 1956 ; Ghafoor in Fl. West Pakistan 75 : 17. 1974 ; Nair, Fl. Bash. Himal. 47. 1977. *T. bartramia* L. Syst. Nat. ed. 10. 2 : 1044. 1759. nom. illeg. et Sp. Pl. ed. 2. 638. 1762.

Perennial herb. Flowers yellow. Capsule densely white woolly or tomentose.

*Fl. & Fr.* : June - September.

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

Throughout tropical and sub - tropical India.

## LINACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Linum mysorense** Heyne ex Benth. apud Lindl. in Bot. Reg. 16 : 132. b. 1830 ; Hook. f. Fl. Brit. India 1 : 411. 1874 ; Collett, Fl. Siml. 65. 1902 ; Nair, Fl. Bash. Himal. 47. 1977.

Glabrous herb. Flowers yellow. Capsule separating into 5 or 10 valves.

*Fl. & Fr.* : July - November.

Simla (DD).

Western Himalaya.

*Linum perenne* L. Sp. Pl. 227. 1753 ; Hook. f. Fl. Brit. India 1 : 411. 1874 ; P. Abdulla in Fl. West Pakistan 21 : 3. 1972.

Herb. Stem many from the root. Flowers blue. Capsule longer than the sepals.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD, DD).

Himachal Pradesh and Western Tibet.

*Linum usitatissimum* L. Sp. Pl. 277. 1753 ; Hook. f. Fl. Brit. India 1 : 410. 1874 ; Collett, Fl. Siml. 66. 1902 ; P. Abdulla in Fl. West Pakistan 21 : 3. 1972. Nair, Fl. Bash. Himal. 47. 1977.

Herb. Leaves linear lanceolate. Flowers blue. Capsule scarcely exceeding the sepals.

*Fl. & Fr.* : April September.

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

Cultivated for oil throughout India up to Himalaya.

*Reinwardtia trigyna* (Roxb.) Planch. in Hook. Lond. Journ. Bot. 7 : 522. 1848 ; Hook. f. Fl. Brit. India 1 : 412. 1874 ; Collett, Fl. Siml. 66. 1902 ; Parker, For. Fl. Punjab ed. 3. 55. 1956 ; P. Abdulla in Fl. West Pakistan 21 : 5. 1972 ; Nair, Fl. Bash. Himal. 48. 1977. *Linum trigynum* Roxb. in As. Res. 6 : 357. 1799.

Shrub. Flowers primrose yellow. Capsule globose.

*Fl. & Fr.* : March November.

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

Hilly parts of India.

## MALPIGHIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Aspidopterys nutans** (Roxb.) Juss. var. **wallichii** (Hook. f.) Niedenzu in Arb. Bot. Inst. Ak. Braunsberg 6 : 11. 1915 et in Engler, Pflanzenreich 91 : 28. 1928. *Hiraea nutans* Roxb. Fl. Ind. ed Carey, 2 : 448. 1832. *A. wallichii* Hook. f. Fl. Brit. India 1 : 421. 1874 ; Parker, For. Fl. Punjab ed. 3. 57. 1956.

Tall climber. Flowers white or creamy. Samaras orbicular - oblong.

*Fl. & Fr.* : August - October.

Chamba (DD).

Tropical Himalaya.

**Hiptage benghalensis** (L.) Kurz in J. As. Soc. Bengal 43 (2) : 136. 1874 ; Nasir in Fl. West Pakistan 45 : 1. 1973 ; Nair, Fl. Bash. Himal. 48. 1977. *Banisteria benghalensis* L. Sp. Pl. 427. 1753. *Hiptage madablota* Gaertn. Fruct. 2 : 169. t. 116. 1791 ; Hook. f. Fl. Brit. India 1 : 418. 1874 ; Collett, Fl. Siml. 67. 1902 ; Parker, For. Fl. Punjab ed. 3. 56. 1956.

Tall climber. Flowers white, fragrant. Fruits 3 winged, nuts or samaras.

*Fl. & Fr.* : April - July.

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

Throughout the hotter parts of India.

## ZYGOPHYLLACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Tribulus terrestris** L. Sp. Pl. 387. 1753 ; Edgeworth & Hook. f. in Hook. f. Fl. Brit. India 1 : 423. 1874 ; Ghafoor in Fl. West Pakistan 76 : 26. 1974 ; Nair, Fl. Bash. Himal. 48. 1977.

Prostrate herb. Leaves pinnately compound. Flowers yellow. Fruits with 2 long and 2 short spines.

*Fl. & Fr.* : August October.

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

Throughout India.

## GERANIACEAE

B. M. WADHWA, B. P. UNIYAL AND H. J. CHOWDHERY

***Erodium cicutarium*** (L.) L' Herit. in Hort. Kew. ed. 1. 2 : 417. 1789 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 434. 1874 ; Collett, Fl. Siml. 70. 1902. *E. schonbeck* Temsey in Rech. f. Fl. Iran. 69 : 57. 1970 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 427. 1972 ; Nair, Fl. Bash. Himal. 48. 1977. *Geranium cicutarium* L. Sp. Pl. 680. 1753.

Annual spreading, pubescent herb. Leaves pinnate, pinnules 7 11 pairs. Flowers pinkish white or purple.

*Fl. & Fr.* : March August.

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

North Western Himalaya and W. Tibet.

***Erodium stephanianum*** Willd. Sp. Pl. 3 : 625. 1800 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 434. 1874. *E. schonbeck* Temsey in Rech. f. Fl. Iran. 69 : 49. 1970 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 427. 1972.

Annual or perennial herb. Leaves 2 pinnatisect. Flowers pale pink.

*Fl. & Fr.* : June August.

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

Western Himalaya, W. Tibet and Nepal.

***Geranium aconitifolium*** L' Herit. in DC. Prodr. 1 : 642. 1825 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 429. 1874 ; Stewart Ann. Cat. Vas. Pl. W. Pak. & Kash. 428. 1972.

Perennial decumbent herb. Stipules small, subulate. Flowers large, purple. Sepals long awned.

*Fl. & Fr.* : July September.

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

North Western Himalaya and W. Tibet,

**Geranium collinum** Steph. ex Willd. Sp. Pl. 3 : 705. 1800 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 429. 1174,

Perennial, hairy herb. Stipule small, ovate. Flowers large, pink purple or violet, sepals short awned.

*Fl. & Fr.* : June September,

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

Himalaya, Kashmir to Sikkim and W. Tibet.

**Geranium collinum** Steph. ex Willd. var. **eglandulosum** Ledeb. Fl. Ross. 1 : 468. 1842 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 429. 1874. *p. p.* ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 428. 1972.

Perennial herb. Stem eglandular. Flowers pink purple.

*Fl. & Fr.* : June July.

Lahul and Spiti (DD).

Western Himalaya.

**Geranium lamberti** Sweet, Geran. 4 : t. 338. 1827. *Geranium grevilleanum* Wall. Pl. As. Rar. 3 : 4. t. 209. 1832 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 430. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 431. 1972.

Glandular, hairy herb. Stipules bifid or in pairs. Flowers large, pale - violet.

*Fl. & Fr.* : July August.

Chamba (DD).

Temperate Himalaya from Himachal Pradesh to Sikkim.



**Geranium lucidum** L. Sp. Pl. 682. 1753 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 433. 1874 ; Collett, Fl. Siml. 70. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 429. 1972 ; Nair, Fl. Bash. Himal. 48. 1977.

Annual herb. Stem reddish. Peduncles longer than the petioles. Flowers pink.

*Fl. & Fr.* : April June.

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

Temperate Western Himalaya and Nepal.

**Geranium mascatense** Boiss. Diagn. 1 : 59. 1842. var. **himalaicum** Babu, Herb. Fl. Dehra Dun 101. 1977. *G. ocellatum* Camb. var. *himalaicum* Knuth in Engl. Pflanzenr. 53 : 62. 1912 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 429. 1972. *G. ocellatum* Camb. in Jacq. Voy. Bot. Ind. 33. t. 38. 1844 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 433 1874 ; Collett, Fl. Siml. 70. 1902 ; Nair, Fl. Bash. Himal. 49. 1977.

Annual, prostrate, hairy herb. Stem often reddish. Flowers red or purple with a dark eye at base.

*Fl. & Fr.* : April October.

Kangra (RRL), Kinnaur (BSD), Kulu (DD, RRL), Simla (BSD, DD, LWG), Una (BSD).

Temperate and subtropical Western Himalaya.

**Geranium meeboldii** Briq. Ann. Cons. & Jard. Bot. Geneve 11 12 : 184. 1908 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 429. 1972. *G. palustre* sensu Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 430. 1874.

Tall hairy perennial herb. Stipules subulate lanceolate. Flowers large, ca 4 cm across, purple.

*Fl. & Fr.* : June September.

Chamba (DD).

Western Himalaya.

**Geranium molle** L. Sp. Pl. 682. 1753 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 432. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 429. 1972.

Annual herb. Flowers pink purple, petals deeply emerginate.

*Fl. & Fr.* : June July.

Chamba (DD).

Temperate Western Himalaya.

**Geranium molle** L. var. **glandulosum** Vis. Fl. Dalm. 3 : 212. 1852 ; Nair, Fl. Bash. Himal. 48. 1977. *G. divaricatum* sensu Collett (non Ehrh. 1792), Fl. Siml. 70. 1902.

Annual hairy herb. Flowers pale purple.

*Fl. & Fr.* : June August.

Chamba (DD), Simla (DD).

Western Himalaya.

**Geranium nepalense** Sweet. Geran. 1 : t. 12. 1820 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 430. 1874 ; Collett, Fl. Siml. 69. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. Kash. 429. 1962 ; Nair, Fl. Bash. Himal. 49. 1977.

Decumbent annual herb. Peduncles 1 2 flowered. Flowers small, yellowish white.

*Fl. & Fr.* : May November.

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

Throughout the Himalaya.

**Geranium polyanthes** Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 431. 1874.

Annual slender herb. Pedicels crowded amongst the upper most leaves, sub umbellate. Flowers dark purple.

*Fl. & Fr.* : July - August.

Kulu (DD), Simla (DD).

Temperate Himalaya, Himachal Pradesh to Sikkim.

**Geranium pratense** L. Sp. Pl. 681. 1753 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 429. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 429. 1972 ; Nair, Fl. Bash. Himal. 49. 1977.

Perennial, stout, hairy herb. Stipules subulate lanceolate. Flowers large, ca 4 cm across, blue purple.

*Fl. & Fr.* : June September.

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

Temperate Western Himalaya and W. Tibet.

**Geranium rectum** Trautv. in Bull. Soc. Nat. Mosc. 33 (1) : 459. 1860 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 429. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 430. 1972.

Slender annual herb. Stem ribbed. Stipules subulate lanceolate. Sepal membranous, narrow oblong with a stout awn.

*Fl. & Fr.* : June July.

Chamba (LWG), Simla (LWG).

Western Himalaya.

**Geranium robertianum** L. Sp. Pl. 681. 1753 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 432. 1874 ; Collett, Fl. Siml. 70. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 430. 1972 ; Nair, Fl. Bash. Himal. 49. 1977.

Erect, hairy herb. Leaves triangular oblong. Flowers small, pink.

*Fl. & Fr.* : June October.

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

Temperate Western Himalaya.

**Geranium rotundifolium** L. Sp. Pl. 683. 1763 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 432. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 430. 1972 ; Nair, Fl. Bash. Himal. 49. 1977.

Slender, annual herb. Stem pinkish. Leaves reniform. Flowers pink.

*Fl. & Fr.* : April July.

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

Temperate Western Himalaya.

**Geranium sibiricum** L. Sp. Pl. 683. 1753 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 431. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 430. 1972.

Slender, excessively branched, prostrate herb. Branches flaccid. Leaves 5 partite. Stipules subulate. Sepals long awned equalling or exceeding the notched petals.

*Fl. & Fr.* : March May.

Chamba (DD).

Western Himalaya.

**Geranium tuberaria** Camb. in Jacq. Voy. Bot. Ind. 33. t. 37. 1844 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 431. 1874 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 430. 1972.

Erect herb. Rootstock tuberous. Peduncles 2 flowered, terminal umbelled, very hairy and glandular.

*Fl. & Fr.* : June August.

Temperate Western Himalaya.

**Geranium wallichianum** D. Don ex Sweet, Geran. 1 : t. 90. 1821 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 430. 1874 ; Collett, Fl. Siml. 69. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 430. 1972 ; Nair, Fl. Bash. Himal. 49. 1977.

Creeping to procumbent herb. Stipules broad. Flowers large, blue or purple.

*Fl. & Fr.* : June October.

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

Temperate Himalaya.

**Pelargonium hortorum** Bailey, Stand. Cycl. Hort. 3 : 2531. 1916 ; Nair, Fl. Bash. Himal. 25. 1977.

Annual herb. Flowers red.

*Fl. & Fr.* : June July.

Kinnaur (BSD).

Planted for flowers, sometimes runs wild.

## BIEBERSTEINIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Biebersteinia odora** Steph. ex Fisch. Mem. Soc. Nat. Mose. 1 : 126. t. 9. 1806 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 427. 1972. **B. emodi** Jaub. & Spach. Ill. Pl. Or. 2 : 109. 1842 57 et in Ann. Sc. Nat. ser. 3. 6 : 137. 1846 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 427. 1874.

Strongly aromatic, viscid perennial herb. Leaves pinnatisect. Flowers yellow.

*Fl. & Fr.* : June August.

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

Alpine Himachal Pradesh to Tibet.

## OXALIDACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Oxalis acetosella** L. Sp. Pl. 433. 1753 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 436. 1874 ; Collett, Fl. Siml. 71. 1902 ; Y. Nasir in Fl. West Pakistan 4 : 2. 1971 ; Nair, Fl. Bash. Himal. 52. 1977.

Pubescent herb. Flowers pale pink, veined with purple. Capsule glabrous.

*Fl. & Fr.* : May October.

Kulu (DD).

Temperate Himalaya.

**Oxalis corniculata** L. Sp. Pl. 435. 1753 ; Edgew. & Hook. f. in Hook. f. Fl. Brit. India 1 : 436. 1874 ; Collett, Fl. Siml. 71. 1902 ; Y. Nasir in Fl. West Pakistan 4 : 2. 1971 ; Nair, Fl. Bash. Himal. 52. 1977.

*O. repens* Thunb. Diss. Oxal. 16. 1781. *O. villosa* M. Bieb. Fl. Taur. Cacc. 1 : 355. 1808. *O. foliosa* Blatt. in J. Ind. Bot. Soc. 9 : 203. 1930.

Procumbent hairy herb. Flowers yellow. Capsule tomentose, cylindrical.

*Fl. & Fr.* : May October.

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

Throughout India.

***Oxalis corymbosa*** DC. Prodr. 1 : 696. 1824 ; Y. Nasir in Fl. West Pakistan 4 : 6. 1971. *O. maritima* Zucc. in Denkschr. Akad. Muench. 9 : 144. No. 6. 1823 1824. *O. bipunctata* R. Grah. in Edin. N. Phil. Journ. 3. 12. 176. 1827.

Herb. Flowers rose purple.

*Fl. & Fr.* : April August.

Kangra (RRL).

Temperate Himalaya.

***Oxalis dehradunensis*** Raizada, Suppl. Duthie's Fl. Upper Gang. Plain 37. 1976. *O. intermedia* A. Rich. Eass. Fl. Cuba 315. 1845 (non Steud. 1841). *O. latifolia* auct. (non H. B. K. 1821. Nov. Gen. et. Sp. 5 : 184. t. 467. 1821) Calder in Rec. Bot. Surv. India 6 (8) : 337. 1919 ; Nair, Fl. Bash. Himal. 52. 1977.

Acaulescent herb. Flowers white or pink turning to purple or violet on drying.

*Fl. & Fr.* : June August.

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

Throughout India.

***Oxalis pes - caprae*** L. Sp. Pl. 434. 1753 ; Y. Nasir in Fl. West Pakistan 4 : 4. 1971. *O. cernua* Thunb. Diss. Oxal. 12. 1781. *O. abyssinica* Turcz. Bull. Soc. Nat. 21. 1 : 432. 1858.

Herb with bulbous root stocks. Flowers golden - yellow. The plant produces a number of bulbils on the rootstock for propagation.

*Fl. & Fr.* : May September.

Chamba (BSD).

Himalayas.

**Oxalis tetraphylla** Cav. *Icon.* 3 : 19. 1795 ; Calder in *Rec. Bot. Surv. India* 6 (8) : 334. 1919.

*Fl. & Fr.* : July September.

Simla (DD).

Himalaya.

### BALSAMINACEAE

H. J. CHOWDHERY, B. P. UNIYAL AND B. M. WADHWA

**Impatiens amphorata** Edgew. in *Tr. Linn. Soc.* 20 : 39. 1846 ; Hook. f. *Fl. Brit. India* 1 : 475. 1875.

Glabrous herb. Leaves alternate. Flowers pink, spur short, incurved.

*Fl. & Fr.* : June September.

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

Temperate Himalaya.

**Impatiens amplexicaulis** Edgew. in *Tr. Linn. Soc.* 20 : 37. 1846 ; Hook. f. *Fl. Brit. India* 1 : 469. 1875 ; Hara in *Oheshi Fl. E. Himal.* 3 : 78. 1975 ; Nair, *Fl. Bash. Himal.* 50. 1977.

Erect glabrous herb. Lower leaves opposite upper alternate, amplexicaul. Flowers pink, spur short.

*Fl. & Fr.* : June - August.

Kinnaur (DD), Kulu (BSD), Lahul and Spiti (DD), Simla (BSD, DD), Sirmur (Hook, 1904).

Temperate Himalaya.

**Impatiens arguta** Hook. f. & Th. in *Jour. Linn. Soc.* 4 : 137. 1860 ; Hook. f. *Fl. Brit. India* 1 : 470. 1875 Nair, *Fl. Bash. Himal.* 50. 1977.

Erect slender herb. Petioles glandular. Flowers large, spur short, incurved.

*Fl. & Fr.* : June September.

Kinnaur (DD).

Temperate Himalaya.

***Impatiens balsamina*** L. Sp. Pl. 938. 1753 ; Hook. f. Fl. Brit. India 1 : 453. 1874 ; Collett, Fl. Siml. 72. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 464. 1972 ; Nair, Fl. Bash. Himal. 50. 1977.

Erect gregarious herb. Leaves alternate. Flowers axillary, pink purple, orange red, spur long.

*Fl. & Fr.* : August September.

Simla (DD), Una (BSD).

Throughout India.

***Impatiens bicolor*** Royle, Ill. Bot. Himal. Mount. 151. t. 28. 1834 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 464. 1972 ; Nair, Fl. Bash. Himal. 50. 1977. *I. amphorata* Edgew. var. *umbrosa* (Edgew.) Hook. f. Fl. Brit. India 1 : 476. 1875.

Slender herb. Stipular glands sessile. Capsule subtorulose.

*Fl. & Fr.* : June August.

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

***Impatiens bicornuta*** Wall. in Roxb. Fl. Ind. ed Carey 2 : 460. 1824 ; Hook. f. Fl. Brit. India 1 : 475. 1875.

Erect herb. Leaves alternate. Flowers purplish, spur incurved.

*Fl. & Fr.* : July September.

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

Temperate Himalaya.

***Impatiens brachycentra*** Kar. & Kir. in Bull. Soc. Nat. Mose. 15 : 179. 1843 ; Hook. f. Fl. Brit. India 1 : 481. 1875 ; Collett, Fl. Siml. 75. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 464. 1972 ; Nair, Fl. Bash. Himal. 50. 1977.

Gregarious herb. Leaves alternate. Flowers white, small, spur minute or absent.



*Fl. & Fr.* : May October.

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

Temperate Himalaya.

**Impatiens cristata** Wall. in Roxb. Fl. Ind. ed. Carey 2 : 456. 1824 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972.

Herb. Leaves alternate. Flowers yellow.

*Fl. & Fr.* : July September.

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

Temperate Himalaya.

**Impatiens edgeworthii** Hook. f. Fl. Brit. India 1 : 476. 1875 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 464. 1972.

Robust herb. Leaves alternate, serrate, serratures gland tipped. Flowers large, yellow, spur incurved.

*Fl. & Fr.* : July September.

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

Western temperate Himalaya.

**Impatiens glandulifera** Royle, Ill. Bot. Himal. Mount. 151. t. 28. t. 2. 1834 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 465. 1972 ; Nair, Fl. Bash. Himal. 51. 1977. *I. roylei* Walp. Repert. 1 : 475. 1842 ; Hook. f. Fl. Brit. India 1 : 468. 1875 ; Collett, Fl. Siml. 73. 1902.

Tall herb. Leaves whorled or opposite, toothed, teeth gland tipped. Flowers pink or purple, spur short. Capsule clavate.

*Fl. & Fr.* : June October.

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

Temperate Himalaya.

**Impatiens glauca** Hook. f. & Thoms. in Journ. Linn. Soc. 4 : 155. 1860 ; Hook. f. Fl. Brit. India 1 : 482. 1875.

Tall glabrous herb. Leaves white beneath. Peduncles stout, very long. Flowers greenish.

*Fl. & Fr.* : July August.

Chamba (BSD), Kulu (BSD).

Temperate Himalaya.

***Impatiens laxiflora*** Edgew. in Trans. Linn. Soc. 20 : 40. 1846 ; Hook. f. Fl. Brit. India 1 : 479. 1875 ; Collett, Fl. Siml. 75. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 465. 1972 ; Nair, Fl. Bash. Himal. 51. 1977. *I. micranthum* Edgew. in Trans. Linn. Soc. 20 : 40. 1846 ; Hook. f. Fl. Brit. India 1 : 481. 1875 ; Collett, Fl. Siml. 75. 1902 ; Nair, Fl. Bash. Himal. 51. 1977.

Tall herb. Leaves alternate. Flowers yellow, about 2.5 cm long, spur long, curved.

*Fl. & Fr.* : August September.

Chamba (DD), Kinnaur (DD).

Temperate Himalaya.

***Impatiens lemanni*** Hook. f. & Thoms. in Journ. Linn. Soc. 4 : 154. 1860 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 465. 1972.

Herb. Flowers pale yellow.

*Fl. & Fr.* : August October.

Simla (DD).

Temperate Himalaya.

***Impatiens racemosa*** DC. Prodr. 1 : 688. 1824 ; Hook. f. Fl. Brit. India 1 : 479. 1875 ; Collett, Fl. Siml. 75. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972 ; Nair, Fl. Bash. Himal. 51. 1977.

Glabrous herb. Leaves alternate. Flowers yellow, small (less than 1.5 cm long including the spur), spur long, straight or slightly curved.

*Fl. & Fr.* : July October.

Kulu (DD), Simla (DD).

Temperate Himalaya.

***Impatiens scabrida*** DC. Prodr. 1 : 687. 1824 ; Hook. f. Fl. Brit. India 1 : 472. 1875 ; Collett, Fl. Siml. 75. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972 ; Nair, Fl. Bash. Himal. 51. 1977.

Fleshy erect herb. Leaves alternate. Flowers over 2.5 cm long, yellow, spur curved.

*Fl. & Fr.* : July October.

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

Temperate Himalaya.

***Impatiens serrata*** Benth. ex Hook. f. & Thoms. in Journ. Linn. Soc. 4 : 136. 1860 ; Hook. f. Fl. Brit. India 1 : 473. 1875. *I. serrulata* Hook. f. in Rec. Bot. Surv. India 4 : 7 & 10. 1904.

Erect, glabrous herb. Flowers yellow or white, spotted with red.

*Fl. & Fr.* : August October.

Chamba (DD).

Temperate Himalaya.

***Impatiens sulcata*** Wall. in Roxb. Fl. Ind. ed Carey 2 : 458. 1824 ; Hook. f. Fl. Brit. India 1 : 469. 1875 et in Rec. Bot. Surv. India 4 : 13 & 19. 1905. *I. gigantea* Edgew. in Tr. Linn. Soc. 20 : 38. 1846 ; Collett, Fl. Siml. 73. 1902 ; Nair, Fl. Bash. Himal. 51. 1977.

Tall, erect herb. Leaves opposite or whorled, crenate, glandular between the crenatures. Flowers pink. Capsule linear.

*Fl. & Fr.* : June September.

Kinnaur (BSD), Kulu (BSD, DD), Lahul & Spiti (BSD, DD), Mandi (BSIP), Simla (DD).

Temperate Himalaya.

***Impatiens thomsoni*** Hook. f. in Journ. Linn. Soc. 4 : 128. 1860 ; Hook. f. Fl. Brit. India 1 : 469. 1875 ; Collett, Fl. Siml. 73. '1902 : Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972 ; Nair, Fl. Bash. Himal. 52. 1977.

Erect gregarious herb. Leaves whorled or opposite, toothed, provided with a gland between the teeth. Flowers pink or purple, spur short. Capsule linear or slightly clavate.

*Fl. & Fr.* : July October.

Kinnaur (BSD), Lahul & Spiti (BSD), Simla (LWG).

Temperate Himalaya.

**Impatiens thomsonii** Var. **ecalcarata** Hook. f. in Rec. Bot. Surv. India 4 (1) : 8. 1905 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972.

Kangra (Vide Hook. f. l. c.).

Temperate Himalaya.

**Impatiens tingens** Edgew. in Tr. Linn. Soc. 20 : 41. 1946 ; Hook. f. in Rec. Bot. Surv. India 4 (1) : 9. 1905. *I. laxiflora* Edgew. var. *stracheyi* Hook. f. Fl. Brit. India 1 : 480. 1875.

Slender herbs. Stipulary glands many. Flowers yellow, lateral wing lobes large, spreading, terminal short.

Simla (vide Hook. f. l. c.).

Temperate Himalaya.

## TROPAEOLACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Tropaeolum majus** L. Sp. Pl. 345. 1753 ; Burges in Tutin et al. Fl. Eur. 2 : 204. 1968 ; Nair, Fl. Bash. Himal. 52. 1977.

Suberect trailing or decumbent annual herb. Leaves orbicular. Flowers yellow, orange or red, long spurred.

*Fl. & Fr.* : July September.

Kinnaur (BSD).

Temperate Western Himalaya.

## RUTACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Aegle marmelos** (L.) Correa in Trans. Linn. Soc. 5 : 223. 1800 ; Hook. f. Fl. Brit. India 1 : 516. 1875. *Crateva marmelos* L. Sp. Pl. 444. 1753.

Small deciduous, glabrous trees. Flowers greenish white, sweet scented. Fruits globose, oblong or pyriform.

*Fl. & Fr.* : April - July.

Kangra (RRL).

Throughout India, wild and cultivated for its fruits.

**Boenninghausenia albiflora** (Hook. f.) Reichenb. ex Meissn. Conspectus. 197. 1828 ; Hook. f. Fl. Brit. India 1 : 486. 1875 ; Collett, Fl. Siml. 76. 1902 ; Nair, Fl. Bash. Himal. 53. 1977. *Ruta albiflora* Hook. Exot. 1 : t. 79. 1823.

Perennial herbs. Flowers white.

*Fl. & Fr.* : July - November.

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

Temperate Himalaya.

Used as flea killer.

**Citrus aurantium** L. Sp. Pl. 783. 1753 ; Hook. f. Fl. Brit. India 1 : 515. 1875.

Small tree or shrubs. Flowers pure white. Fruit globose, generally oblate non mamillate.

*Fls. & Fr.* : April - August.

Kangra (RRL).

Hot valleys along the foot of Himalaya.

**Citrus medica** L. Sp. Pl. 782. 1753 ; Hook. f. Fl. Brit. India 1 : 514. 1875 [Parker, For. Fl. Punj. ed. 3. 63. 1956 ; Nair, Fl. Bash. Himal. 53. 1977.

Shrub or small trees. Flowers pinkish white. Fruits globose, ovoid or oblong and usually mamillate at the apex.

*Fl. & Fr.* : April September.

Kangra (RRL), Kinnaur (DD).

Valley along the foot of Himalaya.

**Dictamnus albus** L. Sp. Pl. 383. 1753 ; Hook. f. Fl. Brit. India 1 : 487. 1875 ; Collett, Fl. Siml. 77. 1902 ; Nair, Fl. Bash. Himal. 53. 1977. *D. himalayanus* Royle, Ill. Bot. Himal. Mount. 156. t. 29. 1834.

Perennial, strongly scented herbs. Flowers pink white, showy.

*Fl. & Fr.* : May - August.

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

Temperate Western Himalaya.

**Murraya koenigii** Spreng. Syst. Veg. 2 : 315. 1825 ; Hook. f. Fl. Brit. India 1 : 503. 1875 ; Collett, Fl. Siml. 79. 1902 ; Parker, For. Fl. Punj. ed. 3. 66. 1956 ; Nair, Fl. Bash. Himal. 53. 1977.

Small, pubescent trees. Flowers white. Fruit berry, black, wrinkled.

*Fl. & Fr.* : April November.

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

Throughout India.

Commonly known as curry leaves.

**Murraya paniculata** (L.) Jack in Mal. Misc. 1 (5) : 31. 1820. *Chalcas paniculata* L. Mant. Pl. 1 : 68. 1767. *Murraya exotica* L. Mant. Pl. 2 : 563. 1771 ; Hook. f. Fl. Brit. India 1 : 502. 1875.

Evergreen shrubs. Flowers companulate, cream - white, very fragrant.

*Fl. & Fr.* : May September.

Kangra (LWG), Simla (BSIP).

Throughout the hotter parts of India.

**Naringi crenulata** (Roxb.) Nicolson in Fl. Hassan Dist. 387. 1976. *Limonia crenulata* Roxb. Pl. Cor. t. 86. 1798. *Hesperethusa crenulata* (Roxb.) Roem. Syn. Monogr. 1 : 38. 1846 ; Nair, Fl. Punj. Plains 53. 1978. *Limonia acidissima* auct. (non L. 1762) Hook. f. Fl. Brit. India 1 : 507. 1875 ; Parker, For. Fl. Punj. ed. 3. 59. 1956.

Spinous, glabrous shrubs. Flowers white, fragrant. Fruit globose acidic.

Dry hills in various parts of India.

**Skimmia laureola** (DC.) Sieb. ex. Zucc. ex Walp. Rep. 5 : 405. 1845 ; Hook. f. Fl. Brit. India 1 : 499. 1875 ; Collett, Fl. Siml. 78. 1902 ; Parker For. Fl. Punj. ed. 3. 64. 1976 ; Nair, Fl. Bash. Himal. 53. 1977. *Limonia laureola* DC. Prodr. 1 : 536. 1824.

Glabrous shrubs. Flowers yellow or white. Fruits ellipsoid, red, fleshy.

*Fl. & Fr.* : April - October.

Chamba (DD), Kinnaur (DD), Simla (DD, LWG), Fagu (CDRI).

Throughout temperate Himalaya.

**Zanthoxylum armatum** DC. Prodr. 1 : 727. 1824. *Zanthoxylum alatum* Roxb. Fl. Ind. ed. 2. 2 : 768. 1832 ; Hook. f. Fl. Brit. India 1 : 493. 1875 ; Collett, Fl. Siml. 78. 1902 ; Parker, For. Fl. Punj. ed. 3. 61. 1956 ; Nair, Fl. Bash. Himal. 54. 1977.

Shrub or small trees. Stem and branches having long sharp prickles. Flowers small, yellow. Fruit pale red, globose drupe.

*Fl. & Fr.* : March - August.

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

Hot valleys of subtropical Himalaya.

## SIMAROUBACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Ailanthus altissima** (Mill.) Swingle in J. Wash. Acad. Sci. 6 : 996. 1916 ; Nair, Fl. Bash. Himal. 54. 1977. *Toxicodendron altissima* Mill. Gard. Dict. ed. 8. No. 10. 1768. *Ailanthus glandulosa* Desf. in Ann. Mus. Par. 265. t. 8. 1789 ; Brandis, For. Fl. N. W. & Cent. India 58. 1874.

Small trees. Fruits purplish yellow.

*Fl. & Fr.* May September.

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

Subtropical Himalaya.

**Picrasma quassioides** (D. Don) Bennett, Pl. Jav. Rar. 198. 1844 et. in Hook. f. Fl. Brit. India 1 : 520. 1875 ; Collett, Fl. Siml. 80. 1902 ; Parker, For. Fl. Punj. ed. 3. 65. 1956 ; Nair, Fl. Bash. Himal. 54. 1977. *Simaba quassioides* D. Don, Prodr. Fl. Nep. 248. 1825.

Tall shrubs. Flowers green. Petals much enlarged and coriaceous in fruit.

*Fl. & Fr.* : April July.

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

Subtropical Himalaya.

## MELIACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Azadirachta indica** A. Juss. in Mem. Mus. Nat. Hist. Paris 19 : 221. 1830. *Melia azadirachta* L. Sp. Pl. 385. 1753 ; Hiern in Hook. f. Fl. Brit. India 1 : 544. 1875 ; Parker, For. Fl. Punj. ed. 3. 78. 1956. *Melia indica* (Juss.) Brandis, For. Fl. N. W. & Cent. India 67. 1874 ; Collett, Fl. Siml. 81. 1902 ; Nair, Fl. Bash. Himal. 54. 1977.



Planted. (C. f. Nair, Fl. Bash. Himal. 54).

**Melia azedarach** L. Sp. Pl. 384. 1753 ; Hiern in Hook. f. Fl. Brit. India 1 : 543. 1875 ; Parker, For. Fl. Punj. ed. 3. 70. 1956 ; Abdulla in Fl. West Pakistan 17 : 7. 1972 ; Nair, Fl. Bash. Himal. 54. 1977.

Tree. Leaves bipinnate. Flowers honey scented.

*Fl. & Fr.* : May - October.

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

Commonly cultivated in India. Wild in the sub Himalayan traet.

**Toona ciliata** M. Roem. Syn. Monogr. 1 : 139. 1846 ; Nair, Fl. Bash. Himal. 55. 1977. *Cedrela toona* Roxb. ex Rottl. & Willd. in Ges. Naturf. Fr. Neue Schr. 4 : 198. 1803 ; Hiern in Hook. f. Fl. Brit. India 1 : 568. 1875. *p. p.* ; Parker, For. Fl. Punj. ed. 3. 71. 1956 ; Abdulla in Fl. W. Pak. 17 : 2. 1972.

Tall tree. Flowers fragrant, petals ciliate.

*Fl. & Fr.* : May June.

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

Tropical Himalaya and throughout the hilly districts of central and southern India.

**Toona serrata** (Royle) M. Roem. Syn. Monogr. 1 : 139. 1846 ; Nair, Fl. Bash. Himal. 55. 1977. *Cedrela serrata* Royle, Ill. Bot. Himal. Mount. 144. t. 25. 1834 ; Collett, Fl. Siml. 83. 1902 ; Parker, For. Fl. Punj. ed. 3. 71. 1956 ; Abdulla in Fl. W. Pak. 17 : 2. 1972.

Tree. Leaves odd pinnate. Flowers pink, petal glabrous.

*Fl. & Fr.* : June October.

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

Western Himalaya.

## AQUIFOLIACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Ilex dipyrena** Wall. in Roxb. Fl. Ind. 1 : 473. 1820 ; Brandis, For. Fl. N. W. & Cent. India 76. t. 15. 1874 ; Hook. f. Fl. Brit. India 1 : 599. 1875 ; Collett, Fl. Siml. 84. 1902 ; Parker, For. Fl. Punj. ed. 3. 73. 1956 ; Nair, Fl. Bash. Himal. 55. 1977 ; Nasir in Fl. West Pakistan 124 : 3. 1978.

An evergreen tree. Leaves spinous when young. Flowers usually bisexual. Drupe scarlet, globose.

*Fl. & Fr.* : April October.

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

Temperate Himalaya.

**Ilex excelsa** (Wall.) Hook. f. Fl. Brit. India 1 : 603. 1875 ; Nasir in Fl. West Pakistan 124 : 3. 1978. *Cassine excelsa* Wall. in Roxb. Fl. Ind. ed Carey 2 : 376. 1824. *Ilex doniana* DC. Prodr. 2 : 644. 1824 ; Parker, For. Fl. Punj. ed. 3. 74. 1956.

Tree. Leaves some what fleshy. Flowers greenish white. Drupe with trigonous stones.

*Fl. & Fr.* : May October.

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

Subtropical Himalaya.

**Ilex odorata** Buch. Ham. in D. Don, Prodr. Fl. Nepal. 189. 1825 ; Brandis, For. Fl. N. W. & Cent. India 77. 1874 ; Hook. f. Fl. Brit. India 1 : 599. 1875 ; Collett, Fl. Siml. 84. 1902 ; Parker, For. Fl. Punj. ed. 3. 76. 1956.

Small evergreen tree. Flowers white, unisexual. Drupe black.

*Fl. & Fr.* : April May.

Chamba (DD).

Temperate Himalaya.

## CELASTRACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Cassine glauca** (Rottb.) Ktze. Rev. Gen. Pl. 1 : 114. 1891 ; Siddiqi in Fl. West Pakistan 109 : 2. 1977. *Mangifera glauca* Rottb. in Nye. Samml. Vid. Selsk. Skrift. 2 : 534. t. 4. 1. 1783. *Elaeodendron glaucum* (Rottb.) Pers. Synops. 1 : 241. 1805 ; Lawson in Hook. f. Fl. Brit. India 1 : 623. 1875 ; Collett, Fl. Siml. 88. 1902 ; Parker, For. Fl. Punj ed. 3. 79. 1956. *E. roxburghii* Wt. & Ar. Prodr. Pen. Ind. Or. 157. 1834 ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 82. 1972.

Tree. Flowers yellow-brown. Drupe yellow green, ovoid.

*Fl. & Fr.* : February June.

Kangra (DD).

Throughout India.

**Celastrus paniculatus** Willd. Sp. Pl. 1 : 1125. 1797 ; Lawson in Hook. f. Fl. Brit. India 1 : 617. 1875 ; Collett, Fl. Siml. 87. 1902 ; Parker, For. Fl. Punj ed. 3. 77. 1956 ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 82. 1972 ; Siddiqi in Fl. West Pakistan 109 : 13. 1977.

Climbing shrub. Flowers pale yellow, green.

*Fl. & Fr.* : May June.

Mandi (LWG).

Tropical and subtropical Himalaya. Throughout hilly districts of India.

**Euonymus echinatus** Wall. in Roxb. Fl. Ind. ed. Carey 2 : 410. 1824 ; Lawson in Hook. f. Fl. Brit. India 1 : 611. 1875 ; Collett, Fl. Siml. 86. 1902 ; Parker, For. Fl. Punj. ed. 3. 77. 1956 ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 80. 1972 ; Siddiqi in Fl. West Pakistan 109 : 4 : 1977 ; Nair, Fl. Bash. Himal. 56. 1977.

Large climbing shrub, climbing on rocks by tufts of aerial root - lets. Flowers white. Capsule globose, prickly.

*Fl. & Fr.* : May - November.

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

Temperate Himalaya.

**Euonymus fimbriatus** Wall. in Roxb. Fl. Ind. ed. Carey 2 : 408. 1824 ; Lawson in Hook. f. Fl. Brit. India 1 : 611. 1875 ; Siddiqi in Fl. West Pakistan 109 : 8. 1977 ; Nair, Fl. Bash. Himal. 56. 1977. *E. lacerus* Buch. Ham. in D. Don, Prodr. Fl. Nep. 191. 1825 ; Collett, Fl. Siml. 86. 1902 ; Parker, For. Fl. Punj. ed. 3. 77. 1956 ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 78. 1972.

Shrub or small tree. Leaves thin, membranous. Flowers white.

*Fl. & Fr.* : May October.

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

Temperate Himalaya.

**Euonymus grandiflorus** Wall. in Roxb. Fl. Ind. ed. Carey 2 : 404. 1824 ; Lawson in Hook. f. Fl. Brit. India 1 : 608. 1875.

Small tree. Flowers white. Capsule globose yellow.

*Fl. & Fr.* : June September.

Chamba (RRL).

Western temperate Himalaya and Nepal to Khasia Hills.

**Euonymus hamiltonianus** Wall. in Roxb. Fl. Ind. ed. Carey 2 : 403. 1824 ; Lawson in Hook. f. Fl. Brit. India 1 : 612. 1875 ; Collett, Fl. Siml. 87. 1902 ; Parker, For. Fl. Punj. ed. 3. 76. 1956 ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 78. 1972 ; Siddiqi in Fl. West Pakistan 109 : 7. 1977 ; Nair, Fl. Bash. Himal. 56. 1977.

Small tree. Flowers greenish - white. Capsule deeply 4 lobed.

*Fl. & Fr.* : May October.

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

Temperate Himalaya.

**Euonymus monbeigii** W. W. Sm. in Notes Roy. Bot. Gard. Edinb. 10 : 34. 1977.

*Fl. & Fr.* : June October.

## Lahul and Spiti (DD)\*

Himalaya.

**Euonymus pendulus** Wall. in Roxb. Fl. Ind. ed. Carey 2 : 406. 1824 ; Lawson in Hook. f. Fl. Brit. India 1 : 612. 1875 ; Collett, Fl. Siml. 87. 1902 ; Parker, For. Fl. Punj. ed. 3. 75. 1956 ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 79. 1979 ; Siddiqi in Fl. West Pakistan 109 : 6. 1977 ; Nair, Fl. Bash. Himal. 56. 1977.

Small tree with drooping branches. Flowers white. Capsule with 4 broad, rounded wings.

*Fl. & Fr.* : May June.

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

Temperate Himalaya.

**Euonymus tingens** Wall. in Roxb. Fl. Ind. ed. Carey 2 : 406. 1824 ; Lawson in Hook. f. Fl. Brit. India 1 : 610. 1875 ; Collett, Fl. Siml. 86. 1902 ; Parker, For. Fl. Punj. ed. 3. 1956 ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 79. 1972 ; Nair, Fl. Bash. Himal. 56. 1977.

Small tree. Leaves thick, leathery. Flowers yellow white, purple veined.

*Fl. & Fr.* : May November.

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

Temperate Himalaya from Tibet, Himachal Pradesh to Bhutan and Assam.

**Maytenus royleanus** (Wall. ex Lawson) Cufodontis in Senck. Biol. 43 : 313. 1962 ; Siddiqi in Fl. West Pakistan 109 : 11. 1977. *Gymnosporia royleana* Wall. ex Lawson in Hook. f. Fl. Brit. India 1 : 620. 1875 ; Collett, Fl. Siml. 87. 1902 ; Parker, For. Fl. Punj. ed. 3. 78. 1956. *Maytenus royleanus* (Laws.) Rau, Bull. Bot. Surv. of India Suppl. 2 : 20. 1969 ; Nair, Fl. Bash. Himal. 57. 1977. *Celastrus spinosus* Royle, Ill. Bot. Himal. Mount. 157. 1835. *nom. nud.* ; Brandis, For. Fl. N. W. & Cent. India Repr. ed. 80. 1972.

Stiff, much branched, spinous shrub. Flowers white. Capsule 3 angled.

*Fl. & Fr.* : May November.

Kinnaur (DD), Simla (DD).

Western Himalaya.

**Maytenus senegalensis** (Lam.) Exell. in Bot. Soc. Brot. Ser. 2. 26 : 223. 1952 ; Siddiqi in Fl. West Pakistan 109 : 11. 1977. *Celastrus senegalensis* Lam. Encycl. Meth. Bot. 1 : 661. 1785. *Gymnosporia montana* (Roxb.) Benth. in Fl. Austral. 1 : 400 1863 ; Lawson in Hook. f. Fl. Brit. India 1 : 621. 1875.

Rouset, profusely armed shrubs. Fruit globose, 1-3 celled, black.

*Fl. & Fr.* : May - October.

Kulu (DD).

Throughout the drier parts of India.

## RHAMNACEAE

H. J. CHOWDHERY, R. PRASAD AND B. M. WADHWA

**Berchemia edgeworthii** Lawson in Hook. f. Fl. Brit. India 1 : 638. 1875 ; Collett, Fl. Siml. 90. 1902 ; Parker, For. Fl. Punj. ed. 3. 85. 1956 Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972.

Diffuse shrubs, twigs terete, glabrous-shining. Flowers pale-yellowish-green. Drupe ovoid cylindrical, purple-blue.

*Fl. & Fr.* : June - August.

Kinnaur (BSD).

Himalaya.

**Berchemia floribunda** (Wall.) Brongn. in Ann. Sci. Nat. Ser. 1. 10 : 357. t. 13. 1827 ; Lawson in Hook. f. Fl. Brit. India 1 : 637. 1875 ; Collett, Fl. Siml. 90. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972. *Ziziphus floribunda* Wall. in Roxb. Fl. Ind. ed. Carey 2 : 368. 1824.

Large erect or climbing shrub or small trees. Flowers in small axillary or terminal clusters. Fruits oblong, purple.

*Fl. & Fr.* : June - September.

Chamba (DD).

Tropical Himalaya, Khasia hills and Bengal.

**Helinus lanceolatus** Wall. ex Brandis, For. Fl. N. W. & Cent. India 574. 1874 ; Lawson in Hook. f. Fl. Brit. India 1 : 644. 1875 ; Collett, Fl. Siml. 93. 1902 ; Parker, For. Fl. Punj. ed. 3. 90. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 466. 1972.

Slender, unarmed shrubs, climbing by means of terminal tendrils. Flowers greenish. Fruit globose, ultimately dehiscent, 3-seeded.

*Fl. & Fr.* : June September.

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

Punjab, Uttar Pradesh and Western Himalaya.

**Hovenia acerba** Lindl. in Bot. Reg. 6 : t. 501. 1820. *H. dulcis* (non Thunb.) Roxb. Fl. Ind. 2 : 414. 1824 ; Lawson in Hook. f. Fl. Brit. India 1 : 640. 1875 ; Parker, For. Fl. Punj. ed. 3. 88. 1956.

Deciduous, unarmed trees. Leaves alternate. Flowers greenish-white. Fruit globose, supported by the persistent calyx-tube, 3-lobed, 3-seeded.

*Fl. & Fr.* : June August.

Chamba (DD), Kinnaur (DD).

Subtropical Himalaya, but often cultivated.

**Rhamnus procumbens** Edgew. in Trans. Linn. Soc. 20 : 43. 1846 ; Lawson in Hook. f. Fl. Brit. India 1 : 640. 1875 ; Parker, For. Fl. Punj. ed. 3. 87. 1956 ; Collett, Fl. Siml. 92. 1902 ; Nair, Fl. Bash. Himal. 57. 1977.

Small prostrate shrubs. Flowers bisexual, green. Fruit black, shining.

*Fl. & Fr.* : June August.

Simla (DD).

Himalaya.

**Rhamnus prostrata** Jacquem. ex Parker in Kew Bull. 1921 : 217. 1921 et For. Fl. Punj. ed. 3. 87. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 467. 1972. *R. persicus* Lawson in Hook. f. Fl. Brit. India 1 : 638. 1875. (non Boiss).

Dwarf, rigid shrubs or small trees. Flowers minute, solitary, axillary, green. Fruit obovoid, black.

*Fl. & Fr.* : June August.

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

Temperate Himalaya.

**Rhamnus purpureus** Edgew. in Trans. Linn. Soc. 20 : 44. 1846 ; Lawson in Hook. f. Fl. Brit. India 1 : 639. 1875 ; Collett, Fl. Siml. 91. 1902 ; Parker, For. Fl. Punj. ed. 3. 86. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 467. 1972 ; Nair, Fl. Bash. Himal. 57. 1977.

Medium sized, unarmed trees. Branches purplish. Flowers green. Fruits obovoid. Seeds black, heart shaped with a shallow wide open groove.

*Fl. & Fr.* : May - August.

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

North-western Himalaya and Nepal.

**Rhamnus triqueter** (Wall. ex Roxb.) Lawson in Hook. f. Fl. Brit. India 1 : 639. 1875 ; Collett, Fl. Siml. 91. 1902 ; Parker, For. Fl. Punj. ed. 3. 87. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 467. 1972 ; Nair, Fl. Bash. Himal. 57. 1977. *Ceanothus triquetra* Wall. ex Roxb. Fl. Ind. ed. Carey 2 : 376. 1824.

Shrub with young shoots tomentose. Flowers greenish-white. Fruits. obovoid, 3-lobed.

*Fl. & Fr.* : May August.

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

North-Western Himalaya and Nepal.

**Rhamnus virgatus** Roxb. Fl. Ind. ed. Carey 2 : 351. 1824 ; Collett, Fl. Siml. 91. 1902 ; Parker, For. Fl. Punj. ed. 3. 86. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 467. 1972 ; Nair, Fl. Bash. Himal. 58. 1977. *R. dahuricus* Lawson in Hook. f. Fl. Brit. India 1 : 639. 1875 (non-Pallas).

Shrub or small trees. Flowers numerous, fascicled in the axil of the leaves, green. Fruits obovoid. Seeds 2-4, dark brown, shining.

*Fl. & Fr.* : April August.

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



Temperate Himalaya and Western peninsula.

**Sageretia filiformis** (Roth. ex Schult.) G. Don, Gen. Sys. 2 : 29. 1832. *Rhamnus filiformis* Roth. ex Schult. Syst. Veg. 5 : 282. 1820. *Rhamnus parviflorus* Klein ex Willd. ex Schult. Syst. Veg. 5 : 295. 1820. *Sageretia parviflora* (Klein ex Willd.) G. Don, Gen. Sys. 2 : 29. 1832; Nair, Fl. Bash. Himal. 58. 1977. *Sageretia oppositifolia* (Wall.) Brongn. Mem. Fam. Rham. 53. t. 2. 2. 1826 ; Lawson in Hook. f. Fl. Brit. India 1 : 641. 1875 ; Collett, Fl. Siml. 92. 1902 ; Parker, For. Fl. Punj. ed. 3. 88. 1956.

Shrub or small trees. Flowers in large terminal panicles, greenish-yellow. Fruits obovoid, black when ripe, edible.

*Fl. & Fr.* : June September.

Simla (DD).

Throughout India.

**Sageretia thea** (Osbeck) M. C. Johnston in J. Arn. Arb. 49 : 378. 1968. *Rhamnus thea* Osbeck, Dagb. Ostind. Resa 232. 1757. *Sageretia theezans* (Vahl) Brongn. Mem. Fam. Rhamn. 53. 1826 ; Lawson in Hook. f. Fl. Brit. India 1 : 641. 1875 ; Collett, Fl. Siml. 92. 1902 ; Parker, For. Fl. Punj. ed. 3. 89. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 468. 1972 ; Nair, Fl. Bash. Himal. 58. 1977.

Evergreen shrub. Flowers green. Fruit black, sweet, edible.

*Fl. & Fr.* : July - October.

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

Western Himalaya.

**Ziziphus hysudrica** Hole in Ind. For. 44 : 505. 1918 ; Parker, For. Fl. Punj. ed. 3. 83. 1956 ; Nair in Rec. Bot. Surv. India 21 (1) : 59. 1978. *Z. jujuba* Lamk. var. *hysudricus* Edgew. in Journ. Linn. Soc. 6 : 201. 1862 ; Lawson in Hook. f. Fl. Brit. India 1 : 633. 1875.

Medium sized tree. Leaves glabrous above, light tomentose below. Fruits globose, greenish-red when ripe.

*Fl. & Fr.* : September March.

Chamba (DD).

Northern India.

**Ziziphus jujuba** Mill. Gard. Dict. ed. 8. no. 1. 1768 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 469. 1972. *Z. sativa* Gaertn. DC. Fruct. 1 : 202. 1788 ; Parker, For. Fl. Punj. ed. 3. 83. 1956. *Z. vulgaris* Lamk. Encycl. Meth. Bot. 3 : 316. 1789 ; Lawson in Hook. f. Fl. Brit. India 1 : 633. 1875.

Small glabrous, deciduous tree. Flowers in axillary clusters. Fruits ellipsoid, red or black, shining.

*Fl. & Fr.* : June August.

Chamba (BSD, DD).

Throughout India.

**Ziziphus mauritiana** Lamk. Encycl. Meth. Bot. 3 : 319. 1789 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 469. 1972 ; Nair, Fl. Bash. Himal. 58. 1977. *Z. jujuba* (L.) Gaertn. Fruct. 1 : 203. 1788 ; Lamk. Encycl. Meth. Bot. 3 : 318. 1789 (non Mill. 1768) ; Lawson in Hook. f. Fl. Brit. India 1 : 632. 1875 ; Collett, Fl. Siml. 90. 1902 ; Parker, For. Fl. Punj. ed. 3. 81. 1956.

Medium sized tree or large shrubs. Branches spreading, drooping. Flowers greenish-yellow. Fruits yellow-orange or red when ripe.

*Fl. & Fr.* : July January.

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

Throughout India.

**Ziziphus nummularia** (Burm. f.) Wt. & Arn. Prodr. Fl. Ind. Or. 162. 1834 ; Lawson in Hook. f. Fl. Brit. India 1 : 633. 1875 ; Parker, For. Fl. Punj. ed. 3. 82. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 469. 1972. *Rhamnus nummularia* Burm. f. Fl. Ind. 61. 1768. *Ziziphus rotundifolia* Lamk. Encycl. Meth. Bot. 3 : 319. 1789.

Bushy shrub. Leaves elliptic or orbicular, more or less densely pubescent above. Fruits globose, red or black when ripe.

*Fl. & Fr.* : September - March.

Kangra (DD).

Throughout India.

**Ziziphus oenoplia** (L.) Mill. Gard. Dict. n. 3. 1768 ; Lawson in Hook. f. Fl. Brit. India 1 : 634. 1875 ; Parker, For. Fl. Punj. ed. 3. 82. 1956. *Rhamnus oenoplia* L. Sp. Pl. 282. 1753.

Scandent shrub. Flowers green to yellowish - green. Fruits green black on maturity.

*Fl. & Fr.* : October - February.

Una (BSD).

Throughout the hotter parts of India.

**Ziziphus oxyphylla** Edgew. in Trans Linn. Soc. 20 : 43. 1846 ; Lawson in Hook. f. Fl. Brit. India 1 : 634. 1875 ; Collett, Fl. Siml. 90. 1902 ; Parker, For. Fl. Punj. ed. 3. 83. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 470. 1972 ; Nair, Fl. Bash. Himal. 59. 1977.

Erect, deciduous shrub. Flowers in small axillary, few flowered sessile clusters. Fruits ovoid, orange.

*Fl. & Fr.* : June - September.

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

North - Western Himalaya and Nepal.

## VITACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Ampelocissus divaricata** (Wall. ex Law.) Planch. in DC. Monogr. Phan. 5 : 378. 1887 ; Nair, Fl. Bash. Himal. 59. 1977. *Vitis divaricata* Wall. ex Lawson in Hook. f. Fl. Brit. India 1 : 657. 1875 ; Collett, Fl. Siml. 95. 1902 ; Parker, For. Fl. Punj. ed. 3. 98. 1956.

Pubescent climber. Flowers red - brown. Berry black.

*Fl. & Fr.* : July - October.

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

Temperate North - Western Himalaya and Nepal.

**Ampelocissus latifolia** (Roxb.) Planch. in J. Vigne Am. 1884 : 374. 1884. *Vitis latifolia* Roxb. Fl. Ind. ed. 2. 1 : 661. 1832 ; Lawson in Hook. f. Fl. Brit. India 1 : 652. 1875 ; Brandis, For. Fl. N. W. & Cent. India 99. 1874.

Glabrous climber with hollow stem. Flowers small, reddish brown. Berry black.

*Fl. & Fr.* : May September.

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

North Western India and Nepal.

**Ampelocissus rugosa** (Wall.) Planch. in J. Vigne Am. 1884 : 374. 1884. *Vitis rugosa* Wall. in Roxb. Fl. Ind. ed Carey, 2 : 480. 1924. *Vitis lanata* Roxb. var. *rugosa* (Wall.) Lawson in Hook. f. Fl. Brit. India 1 : 651. 1875.

Climber, more or less covered with red-brown wool. Flowers yellow-green. Berry purple.

*Fl. & Fr.* : May June.

Chamba (DD), Kinnaur (DD).

Tropical Himalaya.

**Ampelopsis vitifolia** (Boiss.) Planch. in DC. Monogr. Phan. 5 : 453. 1887. *Cissus vitifolia* Boiss. Diagn. Pl. Or. Nov. Ser. 1. 6 : 31. 1845. *Vitis persica* Boiss. Fl. Or. 1 : 955. 1867.

*Fl. & Fr.* : May September.

Chamba (DD).

Temperate Himalaya.

**Parthenocissus semicordata** (Wall.) Planch. in DC. Monogr. Phan. 5 : 451. 1887. *Vitis semicordata* Wall. in Roxb. Fl. Ind. ed Carey, 2 : 481. 1824. *Vitis himalayana* Brandis var. *semicordata* (Wall.) Lawson in Hook. f. Fl. Brit. India 1 : 636. 1875.

Climber, young shoots and petioles hispidly pubescent. Flowers large.

*Fr. & Fl.* : June October.

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

Temperate Himalaya.

**Parthenocissus semicordata** (Wall.) Planch. var. **roylei** (King) Raizada et Saxena in Indian Forester 92 : 319. 1966 ; Nair, Fl. Bash. Himal. 59. 1977. *Vitis semicordata* var. *roylei* King in Journ. As. Soc. Bengal 65 : 113. 1895.

Glabrous climber. Adhesive disc present on tendril tips.

*Fl. & Fr.* : June September.

Chamba (DD), Simla (DD).

North Western India.

**Tetrastigma serrulatum** (Roxb.) Planch. in DC. Monogr. Phan. 5 : 432. 1887 ; Nair, Fl. Bash. Himal. 60. 1977. *Cissus serrulata* Roxb. Fl. Ind. ed. Carey. 1 : 432. 1820. *Vitis capriolata* D. Don, Prodr. Fl. Nepal. 188. 1825 ; Lawson in Hook. f. Fl. Brit. India 1 : 659. 1875 ; Collett, Fl. Siml. 95. 1902 ; Parker, For. Fl. Punj. ed. 3. 99. 1956. *Cissus capriolata* Royle, Ill. Bot. Himal. Mount. 1 : 149. t. 26. f. 2. 1839. *Vitis serrulata* Wall. ex Miq. Ann. Mus. Bot. Lugd. Bot. 1 : 77 1863. *Tetrastigma affine* (Gagnep. ex Osmaston) Raizada et Saxena in Indian For. 92 : 325. 1966. *Vitis affine* Gagnep. ex Osmaston in For. Fl. Kumaon 119. 1927.

Glabrous, wiry creeper. Flowers yellow green. Berry black.

*Fl. & Fr.* : September November.

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

Temperate Himalaya.

**Vitis lanata** Roxb. Fl. Ind. ed. Carey 1 : 660. 1820 ; Brandis, For. Fl. N. W. & Cent. India 99. 1874 ; Lawson in Hook. f. Fl. Brit. India 1 : 651. 1875 ; Collett, Fl. Siml. 94. 1902 ; Parker, For. Fl. Punj. ed. 3. 60. 1956.

Softly pubescent climber. Flowers small, green. Berry purple.

*Fl. & Fr.* : May October.

Kinnaur (BSD).

Tropical Himalaya.

**Vitis lanata** Roxb. var. **glabra** Lawson in Hook. f. Fl. Brit. India 1 : 651. 1875 ; Nair, Fl. Bash. Himal. 60. 1977.

Leaves glabrous beneath. Stem more slender than the type species.

*Fl. & Fr.* : April September.

Kinnaur (DD).

Tropical Himalaya.

**Vitis parvifolia** Roxb. Fl. Ind. ed. Carey 2 : 475. 1824 ; Brandis, For. Fl. N. W. & C. India 9. 1874 ; Lawson in Hook. f. Fl. Brit. India 1 : 652. 1875 ; Collett, Fl. Siml. 94 : 1902 ; Parker, For. Fl. Punj. ed. 3. 1956 ; Nair, Fl. Bash. Himal. 60. 1977. *Vitis flexuosa* Thunb. var. *parvifolia* (Roxb.) Planch. in DC. Monogr. Phan. 5 : 348. 1887.

Glabrous, trailing shrub. Flowers green. Berry black.

*Fl. & Fr.* : May September.

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

North - western Himalaya and Nepal.

**Vitis vinifera** L. Sp. Pl. 292. 1753 ; Lawson in Hook. f. Fl. Brit. India 1 : 652. 1875 ; Brandis, For. Fl. N. W. & Cent. India 98. 1874 ; Parker, For. Fl. Punj. ed. 3. 96. 1956 ; Nair, Fl. Bash. Himal. 60. 1977.

Cultivated for grapes.

*Fl. & Fr.* : May July.

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

Cultivated.

## LEEACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Leea crispa** van Royan ex. L. Syst. Nat. ed. 12. 2 : 627. 1767 & Mant. Pl. 124. 1767 ; Ridsdale in Blumea 22 : 188. 1974. *Leea aspera* (in Roxb. Fl. Ind. ed. Carey 2 : 468. (1824) nom. nud. ad. nota) Edgew. in Trans. Linn. Soc. 20 : 36. 1846 (non Wall. ex G. Don, 1831) ; Lawson in Hook. f. Fl. Brit. India 1 : 665. 1875 ; Brandis, For. Fl. N. W. & Cent. India 102. 1874. *Leea edgeworthii* Sant. Fl. Khandala 54. 1953.

Erect, pubescent herbs. Flowers in small, pubescent cymes. Fruit black, succulent.

*Fl. & Fr.* : July August.

Kangra (RR), Mandi (DD).

Tropical Himalaya.

## SAPINDACEAE

B. M. WADWHA AND H. J. CHOWDHERY

**Aesculus indica** Colebr. ex Camb. in Jacq. Voy Bot. 31. t. 35. 1844 ; Brandis, For. Fl. N. W. & Cent. India 103. 1874 ; Hiern in Hook f. Fl. Brit. India 1 : 675. 1875 ; Collett, Fl. Siml. 97. 1902 ; Parker, For. Fl. Punj. ed. 3. 103. 1956 ; Nair, Fl. Bash. Himal. 62. 1977.

Tree. Leaves glabrous, digitately compound. Flowers white, yellow with red streaks at the base. Capsule smooth, brown, globose.

*Fl. & Fr.* : May September.

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

Western Himalaya.

**Cardiospermum halicacabum** L. Sp. Pl. 366. 1753 ; Hiern in Hook. f. Fl. Brit. India 1 : 670. 1875 ; Collett, Fl. Siml. 96. 1902 ; P. Abdulla in Fl. West Pakistan 39 : 8. 1973 ; Nair, Fl. Bash. Himal. 62. 1977.

Climbing herb. Flowers small, white. Capsule globose, membranous. Seeds spherical, black, bearing a conspicuous, white, heart shaped excrescence.

*Fl. & Fr.* : August November.

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

Throughout India.

**Dodonaea viscosa** (L.) Jacq. Enum. Pl. Carib. 19. 1760 ; Brandis, For. Fl. N. W. & Cent. India 113. 1874 ; Hiern in Hook. f. Fl. Brit. India 1 : 697. 1875 ; Collett, Fl. Siml. 100. 1902 ; Parker, For. Fl. Punj. ed. 3. 105. 1956 ; P. Abdulla in Fl. West Pakistan 39 : 3. 1973. *Ptelea viscosa* L. Sp. Pl. 118. 1753. *Dodonaea dioica* Roxb. Fl. Ind. 324. 1832. *D. burmaniana* DC. Prodr. 1 : 616. 1824.

Evergreen shrub. Leaves and young shoots viscid with yellow, resinous dots. Flowers small, yellow. Capsule compressed, membranous.

*Fl. & Fr.* : February - April.

Bilaspur (DD), Solan (BSD), Una (BSD).

Throughout India.

**Sapindus mukorossi** Gaertn. Fruct. 1 : 342. t. 70. 1788 ; Brandis, For. Fl. N. W. & Cent. India 97. 1874 ; Hiern in Hook. f. Fl. Brit. India 1 : 683. 1875 ; Collett, Fl. Siml. 97. 1902 ; Parker, For. Fl. Punj. ed. 3. 104. 1956 ; P. Abdulla in Fl. West Pakistan 39 : 5. 1973 ; Nair, Fl. Bash. Himal. 62. 1977.

Trees. Flowers numerous, small, purple. Drupe yellow, smooth, globose.

*Fl. & Fr.* : April September.

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

Cultivated.

## ACERACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Acer acuminatum** Wall. ex D. Don, Prodr. Fl. Nep. 249. 1825 ; Parker, For. Fl. Punjab ed. 3. 102. 1956 ; Murray in Fl. West Pakistan 92 : 6. 1975 ; Nair, Fl. Bash. Himal. 60. 1977. *A. caudatum* sensu Brandis, For. Fl. N. W. & Cent. India 112. 1874 ; Hiern in Hook. f. Fl. Brit. India 1 : 695. 1875 (non Wall. 1830).

Huge tree. Leaf 5 lobed, pale beneath. Flowers greenish.

*Fl. & Fr.* : April September.

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

Temperate Himalaya.

**Acer caesium** Wall. ex Brandis, For. Fl. N. W. & Cent. India 111. t. 21. 1874 ; Hiern in Hook. f. Fl. Brit. India 1 : 695. 1875 ; Collett, Fl. Siml. 98. 1902 ; Parker, For. Fl. Punjab ed. 3. 101. 1956 ; Murray in Fl. West Pakistan 92 : 5. 1975 ; Nair, Fl. Bash. Himal. 61. 1977.

Trees. Leaves cordate, 5 lobed, sharply toothed, yellow beneath. Flowers white.



*Fl. & Fr.* : April December.

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

Temperate Western Himalaya and Nepal.

**Acer cappadocicum** Gleditsch, Schrift. Ges. Freund. Berl. 6 : 116, t. 2. 1785 ; Murray in Fl. West Pakistan 92 : 3. 1975. *A. pictum* auct (non Thunb. 1784) Hiern in Hook. f. Fl. Brit. India 1 : 696. 1875 ; Brandis, For. Fl. N. W. & Cent. India 112. 1874 ; Parker, For. Fl. Punjab ed. 3. 102. 1956 ; Nair, Fl. Bash. Himal. 61. 1977. *A. cultratum* Wall. Pl. As. Raro. 2 : 4. 1820 ; Collett, Fl. Siml. 99. 1902.

Large tree. Leaf 5-7 lobed, entire. Flowers greenish-yellow.

*Fl. & Fr.* : April October.

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

Temperate Himalaya Kashmir to Bhutan.

**Acer laevigatum** Wall. Pl. As. Rar. 2 : 3. t. 104. 1830 ; Brandis, For. Fl. N. W. & Cent. India 110. 1874 ; Hiern in Hook. f. Fl. Brit. India 1 : 693. 1875.

Tree. Leaves undivided, green on both sides. Flowers white.

*Fl. & Fr.* : April September.

Simla (DD).

Temperate Himalaya.

**Acer negundo** L. Sp. Pl. 1056. 1753 ; Parker, For. Fl. Punjab ed. 3. 102. 1956 ; Murray in Fl. West Pakistan 92 : 7. 1975.

Small tree of southern United States cultivated in gardens. Leaves pinnate.

**Acer oblongum** Wall. ex DC. Prodr. 1. 593. 1824 ; Hiern in Hook. f. Fl. Brit. India. 1 : 693. 1875 ; Brandis, For. Fl. N. W. & Cent. India 110. 1874 ; Parker, For. Fl. Punjab ed. 3. 100. 1956 ; Murray in Fl. West Pakistan 92 : 3. 1975 ; Nair, Fl. Bash. Himal. 61. 1977.

Tree. Leaves entire, lower surface white.

*Fl. & Fr.* : April - June.

Kinnaur (DD), Simla (DD).

Temperate Himalaya, Kashmir to Sikkim.

**Acer pentapomicum** Stewart ex Brandis, For. Fl. N. W. and Cent. India 111. 1874 ; Hiern in Hook. f. Fl. Brit. India 1 : 694. 1875 ; Parker, For. Fl. Punjab ed. 3. 100. 1956 ; Murray in Fl. West Pakistan 92 : 6. 1975 ; Nair, Fl. Bash. Himal. 61. 1977.

Small tree. Flowers greenish-white.

*Fl. & Fr.* : April July.

Kinnaur (DD), Mandi (CDRI).

North Western, temperate Himalaya.

**Acer pseudoplatanus** L. Sp. Pl. 1054. 1753.

*Fl. & Fr.* : April - August.

Simla (DD).

Planted.

**Acer saccharum** Marsh. Arbust. 4. 1784 ; Parker, For. Fl. Punjab ed. 3. 102. 1956.

Large tree. Leaves 3-5 lobed. Flowers apetalous.

Sugar maple, sugar is extracted from the sap.

**Acer villosum** Wall. Pl. As. Rar. 2 : 4. 1830 ; Hiern in Hook. f. Fl. Brit. India 1 : 695. 1875 ; Brandis, For. Fl. N. W. & Cent. India 111. 1874 ; Parker, For. Fl. Punjab ed. 3. 101. 1956 ; Nair, Fl. Bash. Himal. 62. 1977.

Large trees Leaves usually 5-lobed.

*Fl. & Fr.* : April June.

Kinnaur (DD).

Temperate Himalaya, from Kashmir to Nepal.

## STAPHYLEACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Staphylea emodi** Wall. ex Brandis, For. Fl. N. W. & Cent. India 114. 1874 ; Hiern in Hook. f. Fl. Brit. India 1 : 698. 1875 ; Collett, Fl.

Siml. 100. 1902 ; Parker, For. Fl. Punjab ed. 3. 99. 1956 ; Nasir in Fl. West Pakistan 24 : 1. 1972 ; Nair, Fl. Bash. Himal. 63. 1977.

Shrub or small tree with glabrous, spotted bark. Leaves pinnately compound, finely toothed. Flowers white. Capsule membranous, inflated, yellow-white.

*Fl. & Fr.* : April July.

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

Temperate Himalaya, Kashmir to Nepal.

## SABIACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Meliosma dilleniifolia** (Wall. ex Wt. & Arn.) Walp. ssp. **dilleniifolia** Rep. 1 : 423. 1842 ; Brandis, For. Fl. N. W. & Cent. India 115. 1874 ; Hook. f. Fl. Brit. India 2 : 4. 1876 ; Collett, Fl. Siml. 102. 1902 ; Parker, For. Fl. Punjab ed. 3. 107. 1956 ; Nair, Fl. Bash. Himal. 63. 1977. *Millingtonia dilleniifolia* Wall. ex Wt. & Arn. in Edinb. New Phil. J. 15 : 179. 1833 ; Wight, Illu. Ind. Bot. 1 : 144. 1840.

Small tree covered with rusty pubescence. Leaves membranous. Flowers white. Fruit a drupe, globose.

*Fl. & Fr.* : June - October.

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

Himalaya, temperate regions.

**Meliosma simplicifolia** (Roxb.) Walp. Rep. 1 : 423. 1842. ssp. **pungens** (Walp) Beusekom in Blumea 19 (3) : 462. 1971. *Millingtonia simplicifolia* Roxb. Pl. Cor. t. 2441. 1920. *Meliosma pungens* (Wall. ex Wt. & Arn.) Walp. Rep. 1 : 423. 1842. *Millingtonia pungens* Wall. ex Wt. & Arn. in Edinb. New. Phil. J. 15 : 178. 1833. et Prodr. 1: 115. 1834 ; Wight, Icon. 3 : t. 964/3. 1845 ; Collett, Fl. Siml. 102. 1902 ; Parker, For. Fl. Punjab ed. 3 : 107. 1956 ; Nair, Fl. Bash. Himal. 63. 1977. *M. wightii* Planch. ex Brandis, For. Fl. N. W. & Cent. India 116. 1874 ; Hook. f. Fl. Brit. India 2 : 4 : 1876.

Small tree, clothed with rusty pubescence. Leaves of the flowering twigs usually entire. Flowers densely fasciated on the ultimate branches. Fruit a drupe, globose.

*Fl. & Fr.* : January July.

Chamba (DD), Kulu (DD).

Subtropical and temperate Himalaya.

**Meliosma simplicifolia** (Roxb.) Walp. Rep. 1 : 423. 1842. ssp. **thomsonii** (King ex Brandis) Beausekom in Blumea 19. (3) : 469. 1971. *M. thomsonii* King ex Brandis, Indian Trees 195. 1906.

Differs from the *M. simplicifolia* ssp. *pungens* in having leaves of the flowering twigs usually with many teeth.

*Fl. & Fr.* : April July.

Kangra (DD).

Tropical Himalaya.

**Sabia campanulata** Wall. in Roxb. Fl. Ind. 2 : 311. 1824 ; Brandis, For. Fl. N. W. & Cent. India 116. 1874 ; Hook. f. Fl. Brit. India 2 : 1. 1876 ; Collett, Fl. Siml. 101. 1902 ; Parker, For. Fl. Punjab ed. 3. 106. 1956 ; Ghafoor in Fl. West Pakistan 91 : 2. 1975 ; Nair, Fl. Bash. Himal. 63. 1977.

Glabrous climbing shrubs. Flowers brown-purple. Drupe flattened, wrinkled, solitary or in pairs.

*Fl. & Fr.* : April - July.

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

Temperate Himalaya.

## ANACARDIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Buchanania lanzan** Spreng. J. B. 2 : 234. 1800 ; Ramamoorthy in Fl. Hasan Dist. 374. 1976. *B. latifolia* Roxb. Fl. India 2 : 385. 1832 ; Hook. f. Fl. Brit. India 2 : 23. 1976.

Tree. Flowers greenish-white. Drupe slightly compressed, black, stone hard.

Hot, drier parts of India.

**Cotinus coggygia** Scop. Fl. Carn. ed. 2. 1 : 220. 1772 ; Nair, Fl. Bash. Himal. 64. 1977. *Rhus cotinus* L. Sp. pl. 383. 1753 ; Hook. f. Fl. Brit. India 2 : 9. 1876 ; Collett, Fl. Siml. 104. 1902 ; Parker, For. Fl. Punjab ed. 3. 112. 1956.

Small tree or shrubs. Flowers pale-purple in drooping, hairy panicles. Drupe hairy, cordate, unequally lobed.

*Fl. & Fr.* : March - August.

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

Western subtropical Himalaya and Nepal.

**Lannea coromandelica** (Houtt.) Merrill in J. Arn. Arbor. 19 : 353. 1939 ; Nair, Fl. Bash. Himal. 64. 1977. *Dialicum coromandelicum* Houtt. Nat. Hist. Ser. 2. 2 : 39. t. 5. f. 2. 1774. *Odina wodier* Roxb. Fl. Ind. 2 : 293. 1832 ; Hook. f. Fl. Brit. India 2 : 29. 1876 ; Collett, Fl. Siml. 106. 1907. *Lannea wodier* (Roxb.) Parker, For. Fl. Punj. ed. 3. 118. 1956.

Tree with very thick trunk. Flowers yellow-green. Drupe oblong, red.

*Fl. & Fr.* : April - June.

Kinnaur (BSD, DD), Mandi (LWG).

Throughout the hotter parts of India.

**Mangifera indica** L. Sp. Pl. 200. 1753 ; Hook. f. Fl. Brit. India 2 : 13. 1876.

Large trees. Flowers yellow, odorous. Drupe compressed yellow.

*Fl. & Fr.* : March - June.

Kangra (RRL).

Tropical Himalaya.

Cultivated throughout India.

**Pistacia chinensis** Bunge in Mem. Acad. Sci. St. Petersb. 2 : 89. 1833. ssp. **integerrima** (J. L. Stewart) Rech. f. in Fl. Iran. 63 : 8. 1969. *P. integerrima* J. L. Stewart in Brandis, For. Fl. N. W. & Cent. India 122. 1874 ; Hook. f. Fl. Brit. India 2 : 13. 1876 ; Collett, Fl. Siml. 106. 1902. *P. chinensis* Bunge var. *integerrima* (Stewart) Zohary in Palest. Jour. Bot. 5 : 216. 1952. *Rhus integerrima* Wall. Cat. No. 8474. 1828.

Tree. Flowers red, 1 sexual, male and female flowers on different trees. Drupe glabrous, wrinkled, globose, grey.

*Fl. & Fr.* : June September.

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

Simla (BSD, DD, LWG), Solan (LWG, RRL).

Western Himalaya.

**Pistacia khinjuk** Stocks in Kew Journ. Bot. 4 : 143. 1852 ; Reichinger, Fl. Iran. 63 : 6. 1969.

*Fl. & Fr.* : July November.

Rampur (BSD), Simla (DD).

Himalaya, Kashmir to Nepal.

**Rhus chinensis** Miller Gard. Dict. ed. 8. No. 7. 1768 ; Nair, Fl. Bash. Himal. 64. 1977. *R. semialata* Murray in Comm. Gotting 6 : 27. t. 3. 1784 ; Brandis, For. Fl. N. W. & Cent. India 119. 1874 ; Hook. f. Fl. Brit. India 2 : 10. 1876 ; Collett, Fl. Siml. 105. 1902 ; Parker, For. Fl. Punjab ed. 3. 113. 1956.

Tree. Flowers pale-yellow green. Drupe tomentose, red-brown.

*Fl. & Fr.* : April - August.

Chamba (DD).

Temperate Himalaya.

**Rhus parviflora** Roxb. Fl. Ind. ed. Carey 2 : 100. 1832 ; Brandis, For. Fl. N. W. & C. India 119. 1874 ; Hook. f. Fl. Brit. India 2 : 9. 1876.

Shrub. Leaves trifoliate. Drupe ovoid, compressed, red-brown.

Western Himalaya and Nepal.

**Rhus punjabensis** Stewart ex Brandis, For. Fl. N. W. & Cent. India 120. 1874 ; Hook. f. Fl. Brit. India 2 : 10. 1876 ; Collett, Fl. Siml. 105.

1902 ; Parker, For. Fl. Punjab ed. 3. 110. 1956 ; Nair, Fl. Bash. Himal. 65. 1977.

Tree. Flowers white or pale yellowish green. Drupe red, tomentose.

*Fl. & Fr.* : June September.

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

North Western Himalaya.

**Rhus succedanea** L. Mant. Pl. 2 : 221. 1767 ; Brandis, For. Fl. N. W. & Cent. India 121. 1874 ; Hook. f. Fl. Brit. India 2 : 12. 1876 ; Collett, l. Siml. 105. 1902 ; Parker, For. Fl. Punjab ed. 3. 111. 1956 ; Nair, Fl. Bash. Himal. 65. 1977.

Tree. Flowers yellowish green. Drupe globose, glabrous, pale - yellow.

*Fl. & Fr.* : June September.

Chamba (DD), Kinnaur (DD).

Temperate Himalaya from Kashmir to Sikkim.

**Rhus wallichii** Hook. f. Fl. Brit. India 2 : 11. 1876 ; Collett, Fl. Siml. 105. 1902 ; Parker, For. Fl. Punjab ed. 3. 111. 1956 ; Nair, Fl. Bash. Himal. 65. 1977.

Tree. Flowers greenish yellow with dark veins. Drupe brown, tomentose turning to glabrous.

*Fl. & Fr.* : May September.

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

Temperate Himalaya from Himachal Pradesh to Nepal.

**Semecarpus anacardium** L. f. Suppl. Pl. 182. 1781 ; Brandis, For. Fl. N. W. & Cent. India 124. 1874 ; Hook. f. Fl. Brit. India 2 : 30. 1876.

Tree. Flowers fascicled, greenish - white. Drupe oblong, smooth, shining black.

*Fl. & Fr.* : May October.

Tropical outer Himalaya and throughout the hotter parts of India.

## CORIARIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Coriaria napalensis** Wall. Pl. Asiat. Rar. 3 : 67. t. 289. 1832 ; Hook. f. Fl. Brit. India 2 : 44. 1876 ; Collett, Fl. Siml. 107. 1902 ; Parker, For. Fl. Punjab ed. 3. 116. 1956 ; Ghaffor in Fl. West Pakistan 43 : 1. 1973 ; Nair, Fl. Bash. Himal. 65. 1977 ; Rau, Facs. Fl. India 1 : 3. 1978.

Glabrous shrub. Flowers small, petal green, stamens coral red. Fruits small, enclosed within the much enlarged purple, succulent petals.

*Fl. & Fr.* : March June.

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

Temperate Himalaya.

## MIMOSACEAE

H. J. CHOWDHERY

**Acacia catechu** (L. f.) Willd. Sp. Pl. 4 : 1079. 1806 ; Baker in Hook. f. Fl. Brit. India 2 : 295. 1878 ; Collett, Fl. Siml. 152. 1902 ; Parkar, For. Fl. Punjab ed. 3. 192. 1956 ; S. Ali. in Fl. West Pakistan 36 : 5. 1973. *Mimosa catechu* L. f. Suppl. Plant. Syst. Veg. 439. 1781.

Trees with recurved prickles inserted below the leaf base. Flowers white or pale yellow. Pods stalked, glabrous, oblong.

*Fl. & Fr.* : May July.

Kangra (RRL).

Throughout Northern India.

**Acacia dealabata** Link, Enum. Hort. Berol. 445. 1821. 1822.



*Fl. & Fr.* : June - December.

Kulu (BSD, DD).

(Cultivated).

***Acacia decurrens*** (Wendl.) Willd. Sp. Pl. 4 : 1072. 1806 ; S. Ali in Fl. West Pakistan 36 : 17. 1973. *Mimosa decurrens* Wendl. Bot. Beobacht. 57. 1798.

*Fl. & Fr.* : June - September.

Simla (DD, LWG).

Introduced in India (Himachal Pradesh).

***Acacia farnesiana*** (L.) Willd. Sp. Pl. 4 : 1083. 1805 ; Baker in Hook. f. Fl. Brit. India 2 : 292. 1878 ; Collett, Fl. Siml. 151. 1902 ; Parkar, For. Fl. Punjab ed. 3. 189. 1956 ; Nair, Fl. Bash. Himal. 66. 1977 ; S. Ali in Fl. West Pakistan 36 : 13. 1973. *Mimosa farnesiana* L. Sp. Pl. 521. 1753.

Large shrubs. Heads globose, yellow, fragrant. Pods fleshy, cylindrical.

*Fl. & Fr.* : June - August.

Kulu (BSD), Simla (BSD).

Throughout India.

***Acacia gageana*** Craib in Kew Bull. 1915 : 406. 1915 ; Parker, For. Fl. Punjab. ed. 3. 195. 1956 ; S. Ali in Fl. West Pakistan 36 : 8. 1973.

Large scrambling shrubs. Flowers pale-creamy-white. Pods pubescent when young, ultimately glabrous.

*Fl. & Fr.* : July - October.

Kulu (BSD).

Outer Himalayan tract.

***Acacia intsia*** (L.) Willd. Sp. Pl. 4 : 1091. 1806 ; Baker in Hook. f. Fl. Brit. India 2 : 297. 1878. *Mimosa intsia* L. Sp. Pl. 522. 1753.

Climbing herbs. Heads yellow, calyx funnel-shaped. Pods straight, strap shaped, glabrous.

Tropical Himalaya.

**Acacia mearnsii** De Wild. Pl. Bequaert. 3 : 61. 1925 ; S. Ali in Fl. West Pakistan 36 : 18. 1973. *Acacia decurrens* Willd. var. *mollis* Lindl. in Bot. Reg. t. 371. 1819.

*Fl. & Fr.* : June September.

Simla (DD).

Outer Himalayan tracts.

**Acacia modesta** Wall. Pl. As Rar. 2 : 27. t. 130. 1831 ; Baker in Hook. f. Fl. Brit. India 2 : 296. 1878 ; Collett, Fl. Siml. 152. 1902 ; Parker, For. Fl. Punjab ed. 3. 193. 1956 ; S. Ali in Fl. West Pakistan 36 : 6. 1973.

Small trees. Flowers white to pale-yellow. Pods stalked, glabrous, flat, oblong.

*Fl. & Fr.* : April May.

Simla (LWG).

Foot of the Western and Central Himalaya.

**Acacia nilotica** (L.) Willd. ex Delile, Fl. Aegypt. 111. 79. 1813. ssp. **indica** (Benth.) Brenan in Kew Bull. 12 : 84. 1957 ; S. Ali in Fl. West Pakistan 36 : 11. 1973. *Acacia arabica* (Lam.) Willd. var. *indica* Benth. in Hook. Land. J. Bot. 1 : 500. 1842. *Acacia nolotica* var. *indica* (Benth.) A. F. Hill in Bot. Mus. Leaflet. Harvard Univ. 8 : 99. 1940. *Acacia arabica* auct. (non Willd., 1806) Baker in Hook. f. Fl. Brit. India 2 : 293. 1878 ; Collett, Fl. Siml. 151. 1902 ; Parkar, For. Fl. Punjab ed. 3. 190. 1956.

Trees. Flowers yellow, fragrant, crowded on long stalked, globose heads. Pods stalked, grey tomentose, flat, contracted between the seeds.

*Fl. & Fr.* : July September.

Throughout India.

**Acacia torta** (Roxb.) Carib in Kew Bull. 1915 : 410. 1915 ; Parkar, For. Fl. Punjab ed. 3. 194. 1956 ; S. Ali in Fl. West Pakistan 36 : 8. 1973. *Mimosa torta* Roxb. Fl. Ind. 2 : 566. 1832. *A. intsia* Willd. var. *caesia* Wt. & Ar. Prodr. Fl. Ind. Or. 1 : 278. 1834 ; Baker in Hook. f. Fl. Brit. India 2 : 297. 1878 ; Collett, Fl. Siml. 152. 1902.

Large climbers. Prickles hooked. Flowers pale yellow in dense round heads. Pods thin, flat, tomentose.

*Fl. & Fr.* : April August.

Throughout India.

***Albizia chinensis*** (Osbeck) Merr. in Amer. Jour. Bot. 3 : 575. 1916 ; S. Ali in Fl. West Pakistan 36 : 21. 1973 ; Nair, Fl. Bash. Himal. 66. 1977. *Mimosa chinensis* Osbeck, Dag. Ostind. Resa 233. 1757. *Albizzia stipulata* Boivin in Encycl. 19 Siecl. 2 : 33. 1838 ; Baker in Hook. f. Fl. Brit. India 2 : 300. 1878 ; Collett, Fl. Siml. 153. 1902 ; Parkar, For. Fl. Punjab ed. 3. 184. 1956.

Trees. Leaves with many glands on the rachis. Heads yellow, calyx and corolla silky pubescent. Pods thin, pale brown.

*Fl. & Fr.* : May June.

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

Tropical Himalaya.

***Albizia julibrissin*** Durazz. in Mag. Tosc. 3 (9) : 11. 1772 ; Baker in Hook. f. Fl. Brit. India 2 : 300. 1878 ; Parker, For. Fl. Punjab ed. 3. 186. 1956 ; S. Ali in Fl. West Pakistan 36 : 21. 1973.

Medium sized trees. Flowers pink in peduncled heads. Pods thin, pubescent, pale brown or yellowish.

*Fl. & Fr.* : May September.

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

Throughout Himalaya.

***Albizia julibrissin*** Durazz. ssp. *mollis* (Wall.) Ali & Saeeda Quaraishi in Pak. J. For. 17 (3) : 368. 1967 ; S. Ali in Fl. West Pakistan 36 : 22. 1973. *Acacia mollis* Wall. Pl. As. Rar. 2 : 76. t. 177. 1831. *Albizia mollis* Boiv. in Encyc. 19. Siecl. 2 : 33. 1838 ; Nair, Fl. Bash. Himal. 66. 1977. *A. julibrissin* Durazz. var. *mollis* (Wall.) Benth. ex Baker in Hook. f. Fl. Brit. India 2 : 300. 1878.

Small trees. Leaflets coriaceous, pubescent. Flowers rose red. Pods glabrous, membranous, grey to pale brown.

*Fl. & Fr.* : May August.

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

Throughout the Himalaya.

**Albizia lebbeck** (L.) Benth. in Hook. Lond. Journ. Bot. 3 : 87. 1844 ; Baker in Hook. f. Fl. Brit. India 2 : 298. 1878 ; Collett, Fl. Siml. 153. 1902 ; S. Ali in Fl. West Pakistan 36 : 23. 1973. *Mimosa lebbeck* L. Sp. Pl. 516. 1753.

Trees. Flowers white, calyx pubescent, corolla glabrous. Pods glabrous.

*Fl. & Fr.* : April May.

Throughout India.

**Albizia odoratissima** (L. f.) Benth. in Hook. Lond. J. Bot. 3 : 88. 1844 ; Baker in Hook. f. Fl. Brit. India 2 : 299. 1878 ; Collett, Fl. Siml. 153. 1902 ; Parker, For. Fl. Punjab ed. 3. 186. 1956 ; S. Ali in Fl. West Pakistan 36 : 22. 1973. *Mimosa odoratissima* L. f. Suppl. Pl. 437. 1781.

Trees. Flowers pale yellow, calyx and corolla hairy. Pods brown, tomentose, ultimately glabrous.

*Fl. & Fr.* : April - June.

Mandi (BSIP).

Throughout India.

**Desmanthus virgatus** (L.) Willd. Sp. Pl. 4 (2) : 1047. 1806 ; Baker in Hook. f. Fl. Brit. India 2 : 290. 1878 ; Parker, For. Fl. Punjab ed. 3. 198. 1956 ; S. Ali in Fl. West Pakistan 36 : 34. 1973. *Mimosa virgata* L. Sp. Pl. 519. 1753.

Glabrous, erect shrub. Flowers sessile in the axil of a cuspidate bract. Pods linear, compressed, glabrous.

*Fl. & Fr.* : June September.

Simla (DD).

Scattered throughout India.

**Leucaena leucocephala** (Lam.) de Wit in *Taxon* 10 (2) : 53. 1961 ; S. Ali Fl. West Pakistan 36 : 36. 1973. *Mimosa leucocephala* Lam. Encycl. 1 : 12. 1783. *Leucaena glauca* sensu Benth. in Baker in Hook. f. Fl. Brit. India 2 : 290. 1878 ; Parker, For. Fl. Punjab ed. 3. 199. 1956.

Small trees. Leaves bipinnate, ending in a weak bristle. Flowers yellowish white. Pods thin, flat.

*Fl. & Fr.* : September - November.

Throughout India.

**Mimosa himalayana** Gamble in Kew Bull. 1920 : 4. 1920 ; S. Ali in Fl. West Pakistan 36 : 27. 1983.

Simla (DD).

Himalaya.

**Mimosa rubicaulis** Lamk. Encyc. Meth. 1 : 20. 1783 ; Baker in Hook. f. Fl. Brit. India 2 : 291. 1878 ; Collett, Fl. Siml. 150. 1902 ; Parker, For. Fl. Punjab ed. 3. 197. 1956.

Large straggling, deciduous shrubs. Flowers purple later changing to white.

*Fl. & Fr.* : August September.

Kangra (DD).

Western Himalaya.

## CAESALPINIACEAE

H. J. CHOWDHERY

**Bauhinia malabarica** Roxb. Fl. Ind. 2: 321. 1832; Baker in Hook. f. Fl. Brit. India 2: 277. 1878 ; Parker, For. Fl. Punjab ed. 3. 178. 1956.

Erect, bushy trees. Flowers white. Pods flat, flexible.

*Fl. & Fr.* : August October.

Chamba (LWG).

Western and Central Himalaya.

**Bauhinia purpurea** L. Sp. Pl. 375. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 284. 1878; Collett, Fl. Siml. 150. 1902 ; Parker, For. Fl. Punjab ed. 3. 179. 1956; Ali in Fl. West Pakistan 54: 5. 1973.

Small trees. Flowers rose to purple, showy. Pod glabrous, flat.

*Fl. & Fr.* : September November.

Simla (DD).

Throughout India.

**Bauhinia retusa** Roxb. Fl. Ind. 2. 322. 1832 ; Baker in Hook. f. Fl. Brit. India 2 : 279. 1878; Collett, Fl. Siml. 149. 1902; Parker, For. Fl. Punjab ed. 3. 177. 1956 ; Ali in Fl. West Pakistan 54 : 4. 1973 ; Nair, Fl. Bash. Himal. 66. 1977. *Phanera retusa* (Roxb.) Benth. in Miq. Pl Jungh. 263. 1852. *Lasiobema retusa* (Roxb.) de Wit. in Reinwardtia 3: 538. 1956. *Bauhinia semla* Wunderlin in Taxon 25 : 362. 1976.

Trees. Leaves notched at the apex. Flowers pale yellow. Pods dehiscent.

*Fl. & Fr.* : September October.

Simla (DD).

Western Himalaya and Nepal.

**Bauhinia vahlii** Wt. & Ar. Prodr. Fl. Ind. Or. 297. 1834; Baker in Hook. f. Fl. Brit. India 2: 279. 1878 ; Collett, Fl. Siml. 149. 1902 ; Parker, For. Fl. Punjab ed. 3. 179. 1956; Ali in Fl. West Pakistan 54: 3. 1973 ; Nair, Fl. Bash. Himal. 67. 1977.

Large climbers with densely pubescent branchlets and abundant circinate tendrils. Flowers white changing into cream-yellow. Pods sublignose, rusty downy.

*Fl. & Fr.* : April June.

Chamba (DD), Sirmur (BSD).

Foot of Himalaya.

**Bauhinia variegata** L. Sp. Pl. 375. 1753 ; Baker in Hook. f. Fl. Brit. India 2: 284. 1878 ; Collett, Fl. Siml. 150. 1902 ; Parker, For. Fl. Punjab

ed. 3. 180. 1956 ; Ali in Fl. West Pakistan 54 : 5. 1973 ; Nair, Fl. Bash. Himal. 67. 1977.

Small trees. Flowers in raceme, white to purplish-white. Pods glabrous.

*Fl. & Fr.* : February-April.

Chamba (DD), Simla (DD).

Throughout India.

**Caesalpinia bonduc** (L.) Roxb. Fl. Ind. ed. Carey, 2. 2: 362. 1832; Ali in Fl. West Pakistan 54 : 30. 1973. *Guilandina bonduc* L. Sp. Pl. 381. 1753. *Caesalpinia crista* L. Sp. Pl. 380. 1753. *C. bonducella* (L.) Fleming in Asiat. Res. 11 : 159. 1810 ; Baker in Hook. f. Fl. Brit. India 2 : 254. 1878 ; Parker, For. Fl. Punjab ed. 3. 172. 1956. *Guilandina bonducella* L. Sp. Pl. ed. 2. 545. 1762.

Large scandant or scrambling shrubs. Flowers yellow. Pods shortly stalked, densely covered with wiry prickles.

*Fl. & Fr.* : July November.

Throughout India.

**Caesalpinia decapetala** (Roth.) Alston in Trim. Handbk. Fl. Ceyl. 6 (Suppl.): 89. 1931 ; Ali in Fl. West Pakistan 54: 31. 1973. *Reichardia decapetala* (Roth.) Nov. Pl. Sp. 212. 1821; Nair, Fl. Bash. Himal. 67. 1977. *Caesalpinia sepiaria* Roxb. Fl. Ind. 2 : 360. 1832 ; Baker in Hook. f. Fl. Brit. India 2 : 256. 1878 ; Collett, Fl. Siml. 146. 1902; Parker, For. Fl. Punjab ed. 3. 172. 1956.

Prickly climbing shrubs. Flowers bright yellow. Pods glabrous, flat. Seeds mottled.

*Fl. & Fr.* : June - August.

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

Throughout India.

**Caesalpinia pulcherrima** (L.) Swartz, Obs. Bot. 166. 1791 ; Baker in Hook. f. Fl. Brit. India 2: 255. 1878; Parker, For. Fl. Punjab ed. 3. 173. 1956; Ali in Fl. West Pakistan 54: 32. 1973. *Poinciana pulcherrima* L. Sp. Pl. 380. 1753.

Large shrubs with beautiful orange-yellow flowers. Pods sub-sessile, smooth, flattened.

*Fl. & Fr.* : May-October.

Universally cultivated throughout India.

**Cassia absus** L. Sp. Pl. 376. 1753; Baker in Hook. f. Fl. Brit. India 2: 265. 1878; Collett, Fl. Siml. 148. 1902 ; Ali in Fl. West Pakistan 54 : 20. 1973 ; Nair, Fl. Bash. Himal. 67. 1977.

Erect annual herbs. Flowers reddish-yellow, very small. Pods oblique, ligulate with grey bristly hairs.

*Fl. & Fr.* : August September.

Kangra (DD).

Throughout India.

**Cassia fistula** L. Sp. Pl. 377. 1753; Baker in Hook. f. Fl. Brit. India 2 : 261. 1878 ; Collect, Fl. Siml. 147. 1902 ; Ali in Fl. West Pakistan 54 : 12. 1973.

Medium size trees. Flowers yellow in drooping racemes. Pods cylindrical about 30 cm long.

*Fl. & Fr.* : March July.

Chamba (LWG).

Throughout India, also planted for showy flowers.

**Cassia floribunda** Cavan. Descr. 132. 1802; Ali in Fl. West Pakistan 54: 29. 1973. *Cessia laevigata* Willd. Enum. Hort. Berol. 2. 441. 1809; Parker, For. Fl. Punjab ed. 3. 176. 1956.

Erect shrubs. Flowers yellow. Pods cylindrical, finely transversely striate with a thick stipe.



*Fl. & Fr.* : June August.

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

Throughout India.

**Cassia kleinii** Wt. & Ar. Prodr. Fl. Ind. Or. 293. 1834. *Cassia dimidiata* Klein, Wall. Cat. No. 5328 (non Don) Baker in Hook. f. Fl. Brit. India 2: 266. 1878; Collett, Fl. Siml. 149. 1902.

Very much like *C. pumila* but more robust. Pods recurved, blackish, glabrescent.

*Fl. & Fr.* : August October.

Simla (DD).

Throughout India.

**Cassia mimosoides** L. Sp. Pl. 379. 1753 ; Baker in Hook. f. Fl. Brit. India 2: 266. 1878; Collett, Fl. Siml. 148. 1902; Nair, Fl. Bash. Himal. 67. 1977. var. **mimosoides**.

Prostrate herbs. A gland is present between the lowest pair of leaflets. Flowers yellow. Pod flat, hairy.

*Fl. & Fr.* : August September.

Simla (DD).

Throughout India.

**Cassia mimosoides** L. Sp. Pl. 379. 1753 var. **wallichiana** (DC.) Baker in Hook. f. Fl. Brit. India 2: 266. 1878 ; Nair, Fl. Bash. Himal. 68. 1977. *C. wallichiana* DC. Prodr. 2 : 505. 1825.

Diffuse perennial shrubs with finely downy branches. Flowers large, yellow. Pods strap shaped, finely downy.

*Fl. & Fr.* : June - August.

Kinnaur (BSD), Simla (BSD).

Himalaya.

**Cassia occidentalis** L. Sp. Pl. 377. 1753; Baker in Hook. f. Fl. Brit. India 2 : 262. 1878 ; Parker, For. Fl. Punjab ed. 3. 175. 1956; Ali in Fl. West Pakistan 54 : 17. 1973 ; Nair, Fl. Bash. Himal. 68. 1977.

Diffuse undershrubs. Flowers pale lilac. Pods recurved, glabrous, torulose, flat.

*Fl. & Fr.* : July August.

Kinnaur (BSD).

Throughout India.

**Cassia obtusifolia** L. Sp. Pl. 377. 1753; Collett, Fl. Siml. 148. 1902 ; Ali in Fl. West Pakistan 54 : 17. 1973 ; Nair, Fl. Bash. Himal. 68. 1977. *C. tora* (non L.) Baker in Hook. f. Fl. Brit. India 2 : 263. 1878 *p. p.*

Annual herbs with bad odour. Flowers in subsessile parts in the axile of the leaf, yellow. Pods cylindrical, elongate.

*Fl. & Fr.* : June November.

Chamba (DD), Kinnaur (BSD).

Throughout India.

**Cassia pumila** Lamk. Encycl. Meth. 1 : 651. 1765; Baker in Hook. f. Fl. Brit. India 2 : 266. 1878; Ali in Fl. West Pakistan 54 : 20. 1973 ; Nair, Fl. Bash. Himal. 68. 1977.

Very diffuse, low shrubs with finely downy branches. Pods straight, flat glabrescent of finely downy.

*Fl. & Fr.* : June - August.

Kinnaur (BSD).

Throughout India.

**Cassia sophera** L. Sp. Pl. 379. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 262. 1878 ; Parker, For. Fl. Punjab ed. 3. 176. 1956 ; Ali in Fl. West Pakistan 54 : 27. 1973.

Closely allied to *C. occidentalis* but differing in being more woody. Flowers orange yellow.

*Fl. & Fr.* : August December.

Chamba (LWG).

Throughout India.

**Cassia surattensis** Burm. f. Fl. Ind. 97. 1768; Ali in Fl. West Pakistan 54 : 29. 1973. *C. glauca* Lamk. Encycl. Meth. 1 : 647 : 1785 ; Baker in Hook. f. Fl. Brit. India 2 : 265. 1878 ; Parker, For. Fl. Punjab ed. 3. 177. 1956. var. **surattensis**.

Tall trees. Flowers large, bright yellow. Pods thin, strap shaped, glabrous.

*Fl. & Fr.* : April August.

Throughout India, cultivated.

**Cassia surattensis** Burm. f. Fl. Ind. 97. 1768 var. **suffruticosa** (Koen. ex Roth) Ali in Fl. West Pakistan 54 : 29. 1973. *C. suffruticosa* Koen. ex Roth, Nov. Sp. Pl. 213. 1821. *Cassia glauca* Lamk. var. *suffruticosa* (Koen. ex Roth) Baker in Hook. f. Fl. Brit. India 2 : 265. 1878.

Trees with glabrous, terete branchlets. Leaflets, flowers and pods much smaller.

*Fl. & Fr.* : April September.

Simmur (BSD).

Throughout India.

**Cassia tora** L. Sp. Pl. 376. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 263. 1878 ; Ali in Fl. West Pakistan 54 : 19. 1973.

Annual weed, undershrubs. Flowers bright yellow. Pods membranous, long.

*Fl. & Fr.* : June August.

Kinnaur (BSD).

Universally distributed in wild state throughout India.

**Gleditschia triacanthos** L. Sp. Pl. 1056. 1753 ; Parker, For. Fl. Punjab ed. 3. 182. 1956 ; Ali in Fl. West Pakistan 54 : 45. 1973 ; Nair, Fl. Bash. Himal. 68. 1977.

Large erect, deciduous trees. Flowers greenish, on the dwarf leafy shoots. Pods curved or straight, flat.

*Fl. & Fr.* : April June.

Cultivated.

**Parkinsonia aculeata** L. Sp. Pl. 375. 1753; Baker in Hook. f. Fl. Brit. India 2 : 260. 1878 ; Parker, For. Fl. Punjab ed. 3. 173. 1956; Ali in Fl. West Pakistan 54 : 41. 1973.

Small evergreen trees. Flowers yellow. Pods moniliform, slender, attenuated at both ends.

*Fl. & Fr.* : April July.

Universally cultivated and often naturalized.

**Tamarindus indica** L. Sp. Pl. 34. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 273. 1878 ; Parker, For. Fl. Punjab ed. 3. 183. 1956 ; Ali in Fl. West Pakistan 54 : 35. 1973.

Large trees. Flowers yellow, striped red. Pods pulpy, acidic.

*Fl. & Fr.* : February-April.

Throughout India.

## PAPILIONACEAE

H. J. CHOWDHERY

**Abrus precatorius** L. Syst. Nat. ed. 12 : 472. 1767 ; Baker in Hook. f. Fl. Brit. India 2 : 176. 1876 ; Parker, For. Fl. Punjab. ed. 3. 156. 1956 ; Nair, Fl. Bash. Himal. 68. 1977 ; Ali in Fl. W. Pak. 100 : 258. 1977.

Woody climbers. Leaves pinnate. Flowers reddish or white. Seeds-bright scarlet with a black spot on the hilum.

*Fl. & Fr.* : May August.

Kulu (DD).

Throughout India.

***Aeschynomene indica*** L. Sp. Pl. 713. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 151. 1876 ; Collett, Fl. Siml. 129. 1902 ; Nair, Fl. Bash. Himal 69. 1977 ; Ali in Fl. W. Pak. 100 : 338. 1977.

Suffruticose herbs. Leaves odd pinnate. Flowers yellow with purple streaks. Pods flat, lower margins indented.

*Fl. & Fr.* : July September.

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

Himalaya.

***Alysicarpus bupleurifolius*** (L.) DC. Prodr. 2 : 352. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 158. 1876 ; Ali in Fl. W. Pak. 100 : 344. 1977. *Hedysarum bupleurifolium* L. Sp. Pl. 745. 1753.

Herbs. Leaflets glabrous. Calyx ciliated. Pods stalked, glabrous.

*Fl. & Fr.* : July September.

Kangra (DD).

Throughout India.

***Alysicarpus rugosus*** (Willd.) DC. Prodr. 2 : 353. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 159. 1876 ; Collett, Fl. Siml. 130. 1902 ; Ali in Fl. W. Pak. 100 : 342. 1977. *Hedysarum rugosum* Willd. Sp. Pl. 3 (2) : 1172. 1802.

Herbs. Leaflets subglabrous below. Flowers adpressed to the rachis. Pods glabrous, marked with prominent transverse ribs.

*Fl. & Fr.* : June - September.

Kangra (DD).

Throughout India.

**Alysicarpus vaginalis** (L.) DC. Prodr. 2 : 353. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 158. 1876 ; Collett, Fl. Siml. 130 : 1902 ; Nair, Fl. Bash. Himal. 69. 1977. *Hedysarum vaginale* L. Sp. Pl. 746. 1753.

Decumbent herbs. Flowers flesh coloured. Pods moniliform, reticulately veined.

*Fl. & Fr.* : June - August.

Kinnaur (BSD).

Throughout India.

**Amphicarpaea edgeworthii** Benth. in Miq. Pl. Jungh. 231. 1852 ; Baker in Hook. f. Fl. Brit. India 2 : 181. 1876 ; Collett, Fl. Siml. 137. 1902.

Pubescent herbs. Flowers pale lilac, sometimes 1 sexual. Pods flat, hairy.

*Fl. & Fr.* : August September.

Simla (vide Collett, 1902).

**Argyrolobium flaccidum** (Royle) Jaub. et Spach in Ann. Sci. Nat. Ser. 2. 19 : 48. 1843 ; Baker in Hook. f. Fl. Brit. India 2 : 63. 1876 ; Collett, Fl. Siml. 113. 1902 ; Nair, Fl. Bash. Himal. 69. 1977 ; Ali in Fl. W. Pak. 100 : 37. 1977. *Cytisus flaccidus* Royle, Ill. Bot. Himal. Mount. 197. 1835.

Densely silky undershrubs. Flowers yellow. Pods densely silky.

*Fl. & Fr.* : June October.

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

Tropical and temperate tracts of North Western India.

**Argyrolobium roseum** (Camb.) Jaub. et Spach. in Ann. Sc. Nat. Ser. 2. 19 : 51. 1843 ; Baker in Hook. f. Fl. Brit. India 2 : 64. 1876 ; Collett, Fl. Siml. 113. 1902 ; Nair, Fl. Bash. Himal. 69 : 1977 ; Ali in Fl. W. Pak. 100 : 37. 1977. *Cytisus roseus* Camb. in Jacq. Voy. Bot. 4 : 35. t. 40. 1835.

Prostrate, thinly silky herbs. Flowers yellow, tinged with red or purplish-pink. Pods glabrous.

*Fl. & Fr.* : April June.

Kangra (DD).

Tropical and subtemperate tracts of the North Western India.

**Astragalus amherstianus** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 199. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 119. 1876 ; Collett, Fl. Siml. 122. 1902 ; Nair, Fl. Bash. Himal. 70. 1977 ; Ali in Fl. W. Pak. 100 : 127. 1977.

Trailing, hairy tomentose herbs. Flowers pale yellow or pink. Pods linear, turgid, recurved, thinly pubescent.

*Fl. & Fr.* : June September.

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

Western Himalaya, temperate regions.

**Astragalus bicuspis** Fischer in Bull. Soc. Nat. Moscou. 26 : 406. 1853 ; Baker in Hook. f. Fl. Brit. India 2 : 135. 1876 ; Parker, For. Fl. Punjab ed. 3. 142. 1956 ; Ali in Fl. W. Pak. 100 : 192. 1977.

A copiously branched undershrub.

*Fl. & Fr.* : June - August.

Lahul and Spiti (BSD).

Nepal, Western Tibet and Himachal Pradesh.

**Astragalus candolleanus** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 199. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 132. 1876 ; Parker, For. Fl. Punjab ed, 3. 136. 1956 ; Ali Nair, Fl. Bash. Himal. 69. 1977 ; in Fl. W. Pak. 100 : 184. 1977.

Sub - erect or prostrate shrubs. Flowers yellow. Calyx tubulose. Pods linear - oblong.

*Fl. & Fr.* : June September.

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

Western Himalaya and Western Tibet.

**Astragalus chlorostachys** Lindl. in Trans. Hort. Soc. 7 : 249. 1828 ; Baker in Hook. f. Fl. Brit. India 2 : 128. 1876 ; Collett, Fl. Siml. 125. 1902 ; Nair, Fl. Bash. Himal. 70. 1977 ; Ali in Fl. W. Pak. 100 : 174. 1977.

Tall undershrubs with pubescent hairy branches. Flowers pale - green, tinged with lilac.

*Fl. & Fr.* : June September.

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

Himalaya, alpine and temperate regions.

**Astragalus coluteocarpus** Boiss. Diagn. Pl. Orient. Nov. 1 (9) : 65. 1849 ; Baker in Hook. f. Fl. Brit. India 2 : 130. 1876 ; Nair, Fl. Bash. Himal. 71. 1977 ; Ali in Fl. W. Pak. 100 : 130. 1977.

Tall undershrubs. Leaflets pilose at both sides. Flowers yellow. Pods glabrous.

*Fl. & Fr.* : June September.

Lahul and Spiti (DD).

North Western Himalaya and Western Tibet.

**Astragalus confertus** Benth. ex Bunge in Astrag. 1 : 23. 1868 ; Baker in Hook. f. Fl. Brit. India 2 : 123. 1876 ; Ali in Fl. W. Pak. 100 : 160. 1977.

White, pubescent herbs.

*Fl. & Fr.* : July September.

Lahul and Spiti (BSD).



Western Tibet and Himachal Pradesh.

**Astragalus grahamianus** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 199. 1835 ; Nair, Fl. Bash. Himal. 70. 1977 ; Ali in Fl. W. Pak. 100 : 190. 1977. *A. cicerifolius* Royle ex Fischer in Bull. Soc. Nat. Moscou 24 : 404. 1853 ; Baker in Hook. f. Fl. Brit. India 2 : 134. 1876 ; Parker, For. Fl. Punjab ed. 3. 141. 1956.

Undershrubs. Flowers yellow. Pods oblong, densely silky.

*Fl. & Fr.* : May July.

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

Western Himalaya and Ladakh, temperat and alpine regions.

**Astragalus graveolens** Buch. Ham. ex Benth. in Royle, Ill. Bot. Himal. Mount. 199. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 131. 1876 ; Ali in Fl. W. Pak. 100 : 177. 1977.

Undershrubs. Stipules foliaceous. Flowers yellowish white. Pods glabrous, straight, membranous.

*Fl. & Fr.* : May September.

Western Himalaya temperate regions.

**Astragalus himalayanus** Klotsch in Klotsch and Garcke. Bot. Ergeb. Reise. Walldemar. 160. 1862 ; Baker in Hook. f. Fl. Brit. India 2 : 126. 1876 ; Ali in Fl. W. Pak. 100 : 179. 1977.

Herbs with slender, weak, glabrous stem. Calyx clothed with white and black hairs. Pods linear oblong.

*Fl. & Fr.* : May August.

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

Western Himalaya and Nepal.

**Astragalus hosackioides** (Royle ex Benth.) Benth. in Benth. & Hook. f. Gen. Pl. 1 (2) : 507. 1865 ; Baker in Hook. f. Fl. Brit. India 2 : 123. 1876 ; Collett, Fl. Siml. 125. 1902 ; Ali in Fl. W. Pak. 100 : 185. 1977.

*Podolotus hosackioides* Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 198. 1835.

Glabrous herbs. Flowers yellow, solitary or in pairs. Pods stalked, straight and constricted between the seeds.

*Fl. & Fr.* : June - September.

Simla (DD).

Western Himalaya.

***Astragalus leucocephalus*** Grah. ex Benth. in Royle, Ill. Bot. Himal. Mount. 198. t. 33. f. 2. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 128. 1876 ; Collett, Fl. Siml. 125. 1902 ; Ali in Fl. W. Pak. 100 : 147. 1977.

Herbs, densely covered with silvery white hairs. Flowers pale - yellow. Pods minute, sessile, finely downy, included in the calyx.

*Fl. & Fr.* : May - October.

Simla (BSD, DD).

Western Himalaya, temperate and tropical regions.

***Astragalus malacophyllus*** Benth. ex Bunge in Astrag. 1 : 36. 1868 ; Baker in Hook. f. Fl. Brit. India 2 : 133. 1876 ; Nair, Fl. Bash. Himal. 71. 1977 ; Ali in Fl. W. Pak. 100 : 168. 1977.

Herbs with well developed stems. Leaflets densely silky. Pod oblong, narrowed suddenly at both the ends, silky, bilocular.

*Fl. & Fr.* : June - August.

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

Western Himalaya, temperate regions.

***Astragalus maxwellii*** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 198. 1835 ; Ali in Kew Bull. 1958 : 308. 1958. et Fl. W. Pak. 100 : 181. 1977. *A. ciliolatus* Benth. ex Bunge in Astrag. 1 : 27. 1868 ; Baker in Hook. f. Fl. Brit. India 2 : 129. 1876.

Erect, glabrous, hollow herbs. Flowers yellow tinged with lilac. Pods oblong, stalked, turgid.

*Fl. & Fr.* : May August.

Chamba (DD).

Western Himalaya, temperate regions.

**Astragalus melanostachys** Benth. ex Bunge in *Astrag.* 1 : 21. 1868 ; Baker in *Hook. f. Fl. Brit. India* 2 : 125. 1876 ; Ali in *Fl. W. Pak.* 100 : 159. 1977.

Glabrous herbs. Leaf petioled. Calyx clothed with black, silky hairs. Pods sessile, oblong, clothed with finely silky black hairs.

*Fl. & Fr.* : June September.

Lahul and Spiti (BSD, DD).

Western Himalaya - alpine regions.

**Astragalus munroi** Benth. ex Bunge in *Astrag.* 1 : 30. 1868 ; Baker in *Hook. f. Fl. Brit. India* 2 : 128. 1876 ; Ali in *Fl. W. Pak.* 100 : 180. 1977.

Herbs with stout, fusiform, woody rhizome and covered throughout with dense, white hairs. Flowers pale yellow. Pods membranous, oblong, inflated.

*Fl. & Fr.* : July September.

Lahul and Spiti (BSD, DD).

Himalaya, alpine region, Tibet and Ladakh.

**Astragalus nivalis** Kar. & Kir. in *Bull. Soc. Nat. Moscou* 15 : 34. 1842 ; Baker in *Hook. f. Fl. Brit. India* 2 : 136. 1876 ; Ali in *Biologia* 7 : 69. 1961 et *Fl. W. Pak.* 100 : 198. 1977.

Under shiubs with thick, woody roots and densely caespitose stems. Pods oblique, silky, stalked.

*Fl. & Fr.* : June July.

Lahul and Spiti (BSD, DD),

Ladakh, Tibet and Himachal Pradesh alpine regions.

**Astragalus peduncularis** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 199. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 136. 1876 ; Nair, Fl. Bash. Himal. 71. 1977 ; Ali in Fl. W. Pak. 100 : 203. 1977.

Suberect or prostrate shrubs. Leaf rachis ending in a leaflet. Flowers yellow. Pods sessile, glabrous, very turgid.

*Fl. & Fr.* : June August.

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

Himachal Pradesh and Western Tibet.

**Astragalus polyacanthus** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 199. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 134. 1876. *p.p.* Parker, For. Fl. Punjab 142. 1956 ; Ali in Fl. W. Pak. 100 : 193. 1977. *A. jacquemontii* Bunge, Astrag. 1 : 44. 1868.

Glabrous shrubs. Leaves hispid beneath. Flowers solitary or 2 in axil of a leaf, yellow.

*Fl. & Fr.* : June July.

Lahul and Spiti (DD).

Western Himalaya and Nepal.

**Astragalus psilocentros** Fisch. in Bull. Soc. Nat. Moscou 26 (2) : 405. 1853 ; Parker, For. Fl. Punjab 140. 1924 ; Ali in Biologia 7 : 62. 1961 et Fl. W. Pak. 100 : 188. 1977 ; Nair, Fl. Bash. Himal. 72. 1977. *A. polyacanthus* (non Royle) Baker in Hook. f. Fl. Brit. India 2 : 134. 1876 *p.p.*

Copiously branched under shrubs. Leaves paripinnate. Leaflets subglabrous beneath. Pods sessile, bilocular.

*Fl. & Fr.* : June August.

Kinnaur (DD).

Common from the plains of Punjab to North - Western Himalaya.

**Astragalus rhizanthus** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 200. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 131. 1876 ; Parker, For. Fl. Punjab. ed. 3. 139. 1956 ; Nair, Fl. Bash. Himal. 72. 1977 ; Ali in Fl. W. Pak. 100 : 170. 1977.

Tufted shrubs. Stipule longer than the internodes. Flowers yellow. Pods densely silky, oblong, turgid.

*Fl. & Fr.* : June August.

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

Western Himalaya, temperate and alpine regions.

***Astragalus strictus*** Grah. ex Benth. in Royle, Ill. Bot. Himal. Mount. 198. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 124. 1876 ; Ali in Fl. W. Pak. 100 : 160. 1977.

Herbs with densely caespitose stem. Pods recurved, hairy.

*Fl. & Fr.* : June September.

Lahul and Spiti (BSD, DD).

Throughout the Himalaya, alpine regions.

***Astragalus strobiliferus*** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 199. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 135. 1876 ; Parker, For. Fl. Punjab ed. 3. 137. 1956 ; Ali in Biologia 7 : 18. 1961 et Fl. W. Pak. 100 : 194. 1977.

Undershrubs, densely armed with the ascending spine tipped, stramineous petioles. Flowers yellow. Pods sessile and silky.

*Fl. & Fr.* : August September.

Lahul and Spiti (BSD.)

Western Himalaya, temperate and alpine regions.

***Astragalus subuliformis*** DC. Astrag. 134 1802 ; Ali in Kew Bull. 1958 : 316. 1958 et Fl. W. Pak. 100 : 211. 1977. *Astragalus subulatus* Pallas, Astrag. 22. t. 20. 1900 (non Desfontaines, 1799) ; Baker in Hook. f. Fl. Brit. India 2 : 136. 1876.

Undershrubs with stem 2-3 times dichotomously branched and thinly covered with minute white bristles. Pods cylindrical, slightly recurved.

*Fl. & Fr.* : July - August.

Lahul and Spiti (BSD).

Western Tibet and Himachal Pradesh.

***Astragalus tibetanus*** Benth. ex Bunge in Astrag. 1 : 52. 1868 ; Baker in Hook. f. Fl. Brit. India 2 : 124. 1876 ; Ali in Biologia 7 : 43. 1961 et Fl. W. Pak. 100 : 180. 1977.

Pubescent herbs. Flowers violet. Fruits recurved.

*Fl. & Fr.* : June August.

Chamba (DD).

Western Tibet, Ladakh and Himachal Pradesh.

**Astragalus trichocarpus** Grah. ex Benth. in Royle, *Ill. Bot. Himal. Mount.* 199. 1835 ; Baker in Hook. *f. Fl. Brit. India* 2 : 121. 1876 ; Nair, *Fl. Bash. Himal.* 72. 1977 ; Ali in *Fl. W. Pak.* 100 : 202. 1977.

Erect shrubs with hollow stem. Leaves imparipinnate. Flowers pinkish white. Pods oblong, 2 celled.

*Fl. & Fr.* : May August.

Simla (DD).

North Western and Central Himalaya, temperate regions.

**Astragalus webbianus** Grah. ex Benth. in Royle, *Ill. Bot. Himal. Mount.* 199. 1835 ; Baker in Hook. *f. Fl. Brit. India* 2 : 132. 1876 ; Nair, *Fl. Bash. Himal.* 72. 1977 ; Ali in *Fl. W. Pak.* 100 : 156. 1977.

Tufted shrub, leaflets 30 50, caducous. Pods glabrous.

*Fl. & Fr.* : June August.

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

Himachal Pradesh and Western Tibet alpine regions.

**Atylosia mollis** Benth. in Miq. *Pl. Jungh.* 243. 1852 ; Baker in Hook. *f. Fl. Brit. India* 2 : 213. 1876 ; Collett, *Fl. Siml.* 142. 1902 ; Ali in *Fl. W. Pak.* 100 : 220. 1977.

Densely pubescent or tomentose shrubs. Flowers yellow. Corolla persisting until the pod is fully developed. Pod grey, pubescent.

*Fl. & Fr.* : July - September.

Simla (DD).

Throughout India.

**Atylosia platycarpa** Benth. in Miq. *Pl. Jungh.* 243. 1852 ; Baker in Hook. *f. Fl. Brit. India* 2 : 216. 1876 ; Collett, *Fl. Siml.* 142. 1902 ; Nair, *Fl. Bash. Himal.* 73. 1977 ; Ali in *Fl. W. Pak.* 100 : 220. 1977.

Long trailing herbs. Leaflets orbicular. Flowers yellow. Pods thinly hairy, flat.

*Fl. & Fr.* : May August.

Kinnaur (BSD).

North Western and Central Himalaya.

***Atylosia scarabaeoides*** (L.) Benth. in Miq. Pl. Jungh. 242. 1852 ; Baker in Hook. f. Fl. Brit. India 2 : 215. 1876 ; Parker, For. Fl. Punjab ed. 3. 162. 1956 ; Ali in Fl. W. Pak. 219. 1977. *Dolichos scarabaeoides* L. Sp. Pl. 726. 1753.

Trailing or twining, densely grey downy herbs. Flowers yellow. Pods straight, distinctly lineate, clothed with fine, short, deciduous, spreading hairs.

*Fl. & Fr.* : May September.

Simla (DD).

Throughout India.

***Butea monosperma*** (Lam.) Kuntze, Rev. Gen. Pl. 1 : 202. 1891 ; Taub. in Engler & Prantl, Pflanzenfam. 3 (3) : 366. 1894 ; Ali in Fl. W. Pak. 100 : 237. 1977. *Erythrina monosperma* Lam. Encycl. 1 : 391. 1785. *Butea frondosa* Koenig ex Roxb. in Asiat. Res. 3. 469. 1792 ; Baker in Hook. f. Fl. Brit. India 2 : 194. 1876 ; Collett, Fl. Siml. 139. 1902 ; Parker, For. Fl. Punjab ed. 3. 159. 1956.

Trees. Young branches tomentose or downy. Leaves trifoliate, leaflets with unequal sides. Flowers orange red. Pods velvety.

*Fl. & Fr.* : March May.

Kulu (DD).

Throughout India.

***Cajanus cajan*** (L.) Huth in Helios 11 : 133. 1893 ; Millsp. in Publ. Field Mus. Nat. Hist. Bot. Ser. 2 : 53. 1900 ; Ali in Fl. W. Pak. 100 : 218. 1977. *Cytisus cajan* L. Sp. Pl. 739. 1753. *Cajanus indicus* Spreng. in Syst. Vég. 3 : 248. 1826 (nom. illeg) ; Baker in Hook. f. Fl. Brit. India 2 : 217. 1876 ; Parker, For. Fl. Punjab ed. 3. 171. 1956.

Erect shrubs with grey silky branchlets. Flowers yellow, sometimes veined with red. Pods finely pubescent.

Cultivated throughout India.

**Campylotropis eriocarps** (DC.) Schindler in Fedde Reper. 11. 431. 1921 ; Nair, Fl. Bash. Himal. 73. 1977. *Lespedeza eriocarpa* DC. Prodr. 2 : 349. 1825; Baker in Hook. f. Fl. Brit. India 2 : 144. 1876 ; Collett, Fl. Siml. 128. 1902 ; Parker, For. Fl. Punjab ed. 3. 146. 1956.

Erect shrubs with adpressedly grey, pubescent branches. Flowers deep purple. Pods mucronate.

*Fl. & Fr.* : July-October.

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

Himalaya temperate and tropical regions.

**Campylotropis meeboldii** (Schindler) Schindler in Fedde Report. Sp. Nov. 11 : 424. 1912 ; Ali in Biologia 12 : 44. 1966 et Fl. W. Pak. 100 : 364. 1977. *Lespedeza meeboldii* Schindler in Fedde. Repert. 9 : 514. 1911 ; Parker, For. Fl. Punjab ed. 3. 146. 1956. *Lespedeza eriocarpa* DC. var. *falconeri* Prain in J. As. Soc. Beng. 66 : 376. 1897. *Campylotropis falconeri* (Prain) Schindler in Fedde Report. Sp. Nov. 11 : 424. 1912.

Copiously branched, erect shrubs. Flowers deep purple. Pods clothed with appressed, silky hair.

*Fl. & Fr.* : June -September.

Chamba (DD), Simla (DD).

Temperate and tropical regions of Himalaya.

**Campylotropis stenocarpa** (Klotzsch) Schindler in Fedde Report. Sp. Nov. 11 : 345. 1912 ; Parker, For. Fl. Punjab ed. 3. 146. 1956 ; Ali in Biologia 12 : 44. 1966 et Fl. W. Pak. 100 : 364. 1977. *Oxyramphis stenocarpa* Klotzsch & Garcke in Bot. Ergeb. Reise Waldemar 158. t. 1. f. 2. 1862. *Lespedeza stenocarpa* (Klotzsch) Maxim. in Acta. Horti Petropol. 2 : 349. 1873.

Densely tomentose, woody shrubs. Flowers deep red. Pods longer than calyx.



*Fl. & Fr.* : February -September.

Kinnaur (DD), Simla (BSD).

Himalaya, tropical and temperate zones.

**Caragana brevispina** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 198. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 116. 1876 ; Collett, Fl. Siml. 124. 1902 ; Parker, For. Fl. Punjab ed. 3. 135. 1956 ; Nair, Fl. Bash. Himal. 73. 1977 ; Ali in Fl. W. Pak. 100 : 102. 1977.

Shrubs. Leaves pinnate, leaflets entire, glabrous on the upper surface. Flowers bright yellow. Pods glabrous, linear, wooly within.

*Fl. & Fr.* : May August.

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

Western Himalaya temperate regions.

**Caragana gerardiana** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 198. t. 34. f. 1. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 116. 1876 ; Nair, Fl. Bash. Himal. 74. 1977 ; Parker, For. Fl. Punjab ed. 3. 134. 1956 ; Ali in Fl. W. Pak. 100 : 100. 1977.

Shrubs. Branches densely hairy when young. Leaves imparipinnate. Pods woolly within, pubescent out side.

*Fl. & Fr.* : May August.

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

Western Himalaya temperate and alpine regions.

**Caragana polyacantha** Royle, Ill. Bot. Himal. Mount. 198. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 116. 1876 ; Nair, Fl. Bash. Himal. 74. 1977.

Shrubs, densely downy when young. Flowers yellow. Pods linear, densely pubescent.

*Fl. & Fr.* : June August.

Kinnaur (BSD).

North Western and Central Himalaya alpine and temperate regions.

**Caragana sukiensis** C. K. Schn. Bull. Herb. Boiss. Ser. 2.7 : 313. 1907 ; Nair, Fl. Bash. Himal. 74. 1977.

Shrubs.

*Fl. & Fr.* : June August.

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

Himalaya - temperate regions.

**Caragana versicolor** (Wall.) Benth. in Royle, Ill. Bot. Himal. Mount. 198. t. 34. f. 2. 1835 ; Parker, For. Fl. Punjab ed. 3. 334. 1956 ; Ali in Fl. W. Pak. 100 : 100. 1977. *Genista versicolor* Wall. in Royle, Ill. Bot. Himal. Mount. t. 34. 1834. *Caragana pygmaea* 'auct. non DC. 1825 ; Baker in Hook f. Fl. Brit. India 2 : 116. 1876 ; Nair, Fl. Bash. Himal. 75. 1977.

Young twigs furrowed. Leaflets more or less digitate. Flowers bright reddish yellow. Pods linear, glabrous.

*Fl. & Fr.* : June-September.

Lahul and Spiti (BSD, DD).

Nepal, Western Himalaya temperate and alpine regions, Tibet.

**Chesneya cuneata** (Benth.) Ali in Scientist (Karachi) 3 (1) : 3. 1959 et Fl. W. Pak. 100 : 105. 1977. *Gueldonstaedia cuneata* Benth. in Royle, Ill. Bot. Himal. Mount. 200. 1835. *Caragana cuneata* (Benth.) Baker in Hook. f. Fl. Brit. India 2 : 117. 1876.

Herbs with thick woody roots. Leaflets 11-13, densely pubescent. Pods straight, linear, glabrous.

*Fl. & Fr.* : July - August.

Lahul and Spiti (BSD, DD).

Temperate and alpine Western Himalaya and Tibet.

**Cicer arietinum** L. Sp. Pl. 738. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 176. 1876 ; Collett, Fl. Siml. 108. 1902 ; Nair, Fl. Bash. Himal. 74. 1977 ; Ali in Fl. W. Pak. 100 : 260. 1977.

Small herbs. Leaves imparipinnately compound. Flowers purplish. Pods oblong.

*Fl. & Fr.* : November March

Lahul and Spiti (BSD).

Commonly cultivated.

**Cicer microphyllum** Benth. in Royle, Ill. Bot. Himal. Mount. 200. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 176. 1876 ; Ali in Fl. W. Pak. 100 : 262. 1977. *Cicer songaricum* auct. (non Steph. ex DC.) Baker in Hook. f. Fl. Brit. India 2 : 176. 1876.

Herbs with finely pubescent or subglabrous stem. Leaves ending in a spiral tendril. Corolla twice the calyx. Pods linear oblong.

*Fl. & Fr.* : June September.

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

Western Himalaya, temperate and alpine regions.

**Clitoria ternatea** L. Sp. Pl. 753. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 208. 1876 ; Ali in Fl. W. Pak. 100 : 254. 1977.

Climbers with slender, downy stems. Flowers bright blue with orange centre.

*Fl. & Fr.* : May - August.

Tropical regions from the Himalaya to throughout India.

**Colutea nepalensis** Sims in Bot. Mag. 53 : t. 2622. 1826 ; Collett, Fl. Siml. 123. 1902 ; Parker, For. Fl. Punjab ed. 3. 141. 1956 ; Nair, Fl. Bash. Himal. 75. 1977 ; Ali in Fl. W. Pak. 100 : 92. 1977. *C. arborescens* var. *nepalensis* (Sims) Baker in Hook. f. Fl. Brit. India 2 : 103. 1876.

Shrubs. Flowers yellow, stamens diadelphous. Pods inflated, bladder like, splitting at the tip.

*Fl. & Fr.* : June September.

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

Temperate Central, Western Himalaya and Tibet.

**Crotalaria alata** Buch. Ham. ex D. Don, Prodr. Fl. Nep. 241. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 69. 1876.

Undershrubs. Stem and leaves clothed below with short, silky pubescence. Flowers yellow. Pods linear oblong, glabrous.

*Fl. & Fr.* : July September.

Chamba (DD), Kangra (DD).

Himalaya.

**Crotalaria albida** Heyne ex Roth, Nov. Pl. Sp. 333. 1821 ; Baker in Hook. f. Fl. Brit. India 2 : 71. 1876 ; Collett, Fl. Siml. 115. 1902 ; Nair, Fl. Bash. Himal. 75. 1977 ; Ali in Fl. W. Pak. 100 : 47. 1977.

Undershrubs. Leaves linear, upper surface minutely dotted, lower white pubescent. Flowers pale yellow. Pods oblong, glabrous.

*Fl. & Fr.* : July October.

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

Throughout India.

**Crotalaria calycina** Schrank, Pl. Rar. Hort. Monac. t. 12. 1817 ; Baker in Hook. f. Fl. Brit. India 2 : 72. 1876 ; Ali in Biologia 12 : 26. 1966 et Fl. W. Pak. 100 : 45. 1977.

Copiously branched herbs. Flowers pale yellow. Pods sessile, glabrous.

*Fl. & Fr.* : July August.

Kangra (DD).

Tropical regions of Himalaya.

**Crotalaria ferruginea** Grah. ex Benth. in Hook. London Journ. Bot. 2 : 476. 1843 ; Baker in Hook. f. Fl. Brit. India 2 : 68. 1876.

Copiously branched, finely silky herbs. Flowers yellow. Pods short stalked, linear oblong, glabrous.

*Fl. & Fr.* : August September.

Kangra (BSIP).

Himalaya.

**Crotalaria hirsuta** Willd. Sp. Pl. 3 : 978. 1802 ; Baker in Hook. f. Brit. India 2 : 68. 1876 ; Collett, Fl. Siml. 114. 1902 ; Nair, Fl. Bash. Himal. 75. 1977.

Undershrubs. Leaves membranous, slightly oblique. Flowers yellow. Pods oblong, finely downy.

Simla (vide Collett, 1902).

Tropical regions of Central and North Western Himalaya.

**Crotalaria humifusa** Grah. (in Wall. Cat. n. 5421) ex Benth. in Hook. Lond. Journ. Bot. 2 : 476. 1843 ; Baker in Hook. f. Fl. Brit. India 2 : 67. 1876 ; Collett, Fl. Siml. 114. 1902 ; de munk in Reinwardtia 6 : 205. 1961 ; Babu, Herb. Fl. Dehra Dun 126. 1977.

Perennial herbs. Stem slender, prostrate. Flowers yellow. Pods oblong, glabrous.

*Fl. & Fr.* : July September.

Simla (BSD, DD).

Throughout India.

**Crotalaria medicaginea** Lamk. Encycl. Meth. 2 : 201. 1786 ; Baker in Hook. f. Fl. Brit. India 2 : 81. 1876 ; Collett, Fl. Siml. 115. 1902 ; Nair, Fl. Bash. Himal. 75. 1977 ; Ali in Fl. W. Pak. 100 : 41. 1977.

Herbs. Leaves trilobed. Flowers yellow, in racemes. Pods globose, pubescent.

*Fl. & Fr.* : June - September.

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

Throughout India.

**Crotalaria mysorensis** Roth, Nov. Pl. Sp. 338. 1821 ; Baker in Hook. f. Fl. Brit. India 2 : 70. 1876 ; Collett, Fl. Siml. 114. 1902 ; Ali in Fl. W. Pak. 100 : 47. 1977.

Densely hairy, erect undershrub. Flowers yellow. Pods oblong, glabrous.

*Fl. & Fr.* : July September.

Simla (DD).

Throughout India.

***Crotalaria prostrata*** Rottl. in Willd. Enum. Hort. Ber. 747. 1809 ; Baker in Hook. f. Fl. Brit. India 2 : 67. 1876 ; Collett, Fl. Siml. 114. 1902 ; Nair, Fl. Bash. Himal. 75. 1977 ; Ali in Fl. W. Pak. 100 : 49. 1977. *C. prostrata* Roxb. ex D. Don, Prodr. Fl. Nep. 241. 1825.

Herbs. Leaves obovate oblong, red hairy on the lower surface. Flowers yellow. Pod oblong, glabrous.

*Fl. & Fr.* : February September.

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

Throughout India.

***Crotalaria sessiliflora*** L. Sp. Pl. ed. 2. 1004. 1763 ; Baker in Hook. f. Fl. Brit. India 2 : 73. 1876 ; Collett, Fl. Siml. 115. 1902 ; Nair, Fl. Bash. Himal. 76. 1977 ; Ali in Fl. W. Pak. 100 : 46. 1977.

Herbs. Leaves simple, linear, acute. Flowers pale-blue. Pods oblong, glabrous.

*Fl. & Fr.* : August November.

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

Throughout Northern India.

***Crotalaria spectabilis*** Roth. Nov. Pl. Sp. 341. 1821 ; Ali in Biologia 12 : 26. 1966 et Fl. W. Pak. 100 : 46. 1977. *Crotalaria sericea* Retz. Obs. 5 : 26. 1789 (non Burm. f. 1768) ; Baker in Hook. f. Fl. Brit. India 2 : 75. 1876 ; Collett, Fl. Siml. 115. 1902.

Erect, silky, pubescent shrubs. Flowers yellow. Pods oblong, nearly glabrous.

*Fl. & Fr.* : July October.

Simla (BSIP).

Throughout India.

**Cytisus scoparius** (L.) Link. Enum. Hort. Berol. Alt. 2 : 241. 1822 ; Parker, For. Fl. Punjab. ed. 3. 170. 1956 ; Nair, Fl. Bash. Himal. 76. 1977. *Spartium scoparium* L. Sp. Pl. 709. 1753. *Sarothamnus scoparium* (L.) Wimmer ex Koch. Syn. Fl. Germ. 154. 1835.

Small shrubs with angular, almost winged twigs. Flowers yellow, large.

*Fl. & Fr.* : April August.

Chamba (LWG).

Throughout India.

**Dalbergia lanceolaria** L. f. Suppl. Pl. Syst. Veg. 316. 1781 ; Baker in Hook. f. Fl. Brit. India 2 : 235. 1876 ; Parker, For. Fl. Punjab ed. 3. 167. 1956 ; Ali in Fl. W. Pak. 100 : 57. 1977.

Trees with glabrous branches. Pods glabrous, bright brown, flexible.

*Fl. & Fr.* : May - September.

Chamba (BSIP), Simla (LWG).

Throughout India.

**Dalbergia sissoo** Roxb. Fl. Ind. ed. 2. 3 : 223. 1832 ; Baker in Hook. f. Fl. Brit. India 2 : 231. 1876 ; Collett, Fl. Siml. 133. 1902 ; Parker, For. Fl. Punjab ed. 3. 166. 1956 ; Nair, Fl. Bash. Himal. 76. 1977 ; Ali in Fl. W. Pak. 100 : 56. 1977.

Erect trees with rough bark. Leaf rachis zig-zig. Flowers light yellow. Pods strap shaped.

*Fl. & Fr.* : May - August.

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

Throughout India.

**Desmodium concinnum** DC. Prodr. 2 : 335. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 170. 1876 *p. p.* ; Collett, Fl. Siml. 133. 1902 ; Parker, For. Fl. Punjab ed. 3. 152. 1956 ; Nair, Fl. Bash. Himal. 76. 1977 ; Ali in Fl. W. Pak. 100 : 354. 1977.

Tall shrubs. Leaves trifoliate, adpressed, silky above. Flowers dark blue. Pods sessile, minutely hairy.

*Fl. & Fr.* : August September.

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

Himalaya.

**Desmodium elegans** DC. in Ann. Sci. Nat. 4 : 100. 1825 ; Ali in Fl. W. Pak. 100 : 350. 1977. *Desmodium tiliaefolium* (D. Don) G. Don, Syst. 2 : 297. 1832 ; Baker in Hook. f. Fl. Brit. India 2 : 168. 1876 ; Collett, Fl. Siml. 132. 1902 ; Nair, Fl. Bash. Himal. 78. 1977. *Hedysarum tiliaefolium* D. Don, Prodr. Fl. Nep. 244. 1825. *Desmodium nutans* Wall. ex Hook. in Bot. Mag. 55 : t. 2867. 1828 ; Parker, For. Fl. Punjab ed. 3. 151. 1956.

Erect shrubs with finely downy branches. Leaves trifoliate. Flowers dark purple. Pods densely pubescent.

*Fl. & Fr.* : May October.

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

Himalaya.

**Desmodium gangeticum** (L.) DC. Prodr. 2 : 327. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 168. 1876 ; Collett, 132. 1902 ; Parker, For. Fl. Punjab ed. 3. 155. 1956 ; Nair, Fl. Bash. Himal. 77. 1977 ; Ali in Fl. W. Pak. 100 : 347. 1977. *Hedysarum gangeticum* L. Sp. Pl. 746. 1753. *H. maculatum* L. Sp. Pl. 746. 1753. *Desmodium gangeticum* (L.) DC. var. *maculatum* (L.) Baker in Hook. f. Fl. Brit. India 2 : 168. 1876.

Suberect undershrubs. Leaves simple, entire, glabrescent above. Flowers purple to white. Pods falcate, deeply indented between the seeds.

*Fl. & Fr.* : January August.

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

Himalaya, up to the sub Himalayan tracts.

**Desmodium heterocarpon** (L.) DC. Prodr. 2 : 337. 1825 ; Nair, Fl. Bash. Himal. 77. 1977. *Hedysarum heterocarpon* L. Sp. Pl. 747. 1753. *D.*



*polycarpum* DC. var. *trichocaulon* Baker in Hook. f. Fl. Brit. India 2 : 171. 1876. *D. polycarpum* (non DC.) Collett, Fl. Siml. 133. 1902 ; Parker, For. Fl. Punjab ed. 3. 153. 1956.

Suberect, hairy undershrubs. Leaves trifoliate, glabrous above. Flowers purple or some times white. Pods sessile, straight, hairy.

*Fl. & Fr.* : July September.

Simla (DD).

Himalaya, Himachal Pradesh to Bhutan.

***Desmodium laxiflorum*** DC. in Ann. Sci. Nat. Paris Ser. 1. 4 : 100. 1825. et. Prodr. 2 : 335. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 164. 1876 ; Parker, For. Fl. Punjab ed. 3. 152. 1956 ; Ali in Fl. W. Pak. 100 : 353. 1977.

Erect undershrubs with branches densely clothed with short hairs. Pods some times slightly constricted at the joints and clothed with minute hooked hairs.

*Fl. & Fr.* : August September.

Kangra (DD).

Himalaya temperate and tropical regions.

***Desmodium microphyllum*** (Thunb.) DC. Prodr. 2 : 337. 1825. *Hedysarum microphyllum* Thunb. Fl. Jap. 284. 1784. *Desmodium parvifolium* DC. Prodr. 2 : 334. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 174. 1876 ; Collett, Fl. Siml. 134. 1902 ; Nair, Fl. Bash. Himal. 77. 1977 ; Ali in Fl. W. Pak. 100 : 351. 1977.

Trailing herbs. Leaves trifoliate, entire, upper surface glabrous. Flowers purple-blue. Pods sessile, curved, glabrous.

*Fl. & Fr.* : September - October.

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

Throughout India.

***Desmodium motorium*** (Houtt.) Merrill in J. Arn. Arb. 1938 : 345. 1938 ; Ali in Fl. W. Pak. 100 : 348. 1977. *Hedysarum motorium* Houtt. Nat. Hist. 2 (10) : 246. 1779. *Hedysarum gyrans* L. f. Suppl. Pl. Syst.

Veg. 332. 1781 ; Baker in Hook. f. Fl. Brit. India 2 : 174. 1876 ; Parker, For. Fl. Punjab ed. 3. 155. 1956. *Desmodium gyrana* (L. f.) DC. Prodr. 2 : 326. 1825.

Undershrubs with subterete, glabrous branches. Flowers hidden by the large, ovate, deciduous bract. Pods straight, 6-10 jointed, falcate.

*Fl. & Fr.* : July-September.

Chamba (DD).

Himalaya.

***Desmodium multiflorum*** DC. in Ann. Sci. Nat. Paris Ser. 1. 4 : 100. 1825 ; Ali in Fl. W. Pak. 100 : 353. 1977. *D. floribundum* G. Don, Gen. Syst. 2 : 297. 1832 ; Baker in Hook. f. Fl. Brit. India 2 : 167. 1876 ; Collett, Fl. Siml. 132. 1902. *Desmodium sambuense* (D. Don) DC. Prodr. 2 : 335. 1825 ; Parker, For. Fl. Punjab ed. 3. 152. 1956 ; Nair, Fl. Bash. Himal. 76. 1977. *Hedysarum sambuense* D. Don, Prodr. Fl. Nep. 243. 1825.

Large, erect shrubs. Leaves trifoliolate, hairy on both the sides. Flowers pink or purple. Pods sessile, hairy.

*Fl. & Fr.* : July-October.

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

Himalaya tropical and temperate regions.

***Desmodium parvifolium*** DC. Prodr. 2 : 334. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 174. 1876 ; Collett, Fl. Siml. 135. 1902.

Shrubs. Flowers purple-blue with densely hairy calyx. Pods sessile, straight, pubescent.

*Fl. & Fr.* : August-October.

Simla (vide Collett, 1902).

Throughout India.

***Desmodium podocarpum*** DC. in Ann. Sci. Nat. 4 : 102. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 165. 1876 ; Collett, Fl. Siml. 132. 1902 ; Parker, For. Fl. Punjab ed. 3. 153. 1956 ; Nair, Fl. Bash. Himal. 77. 1977 ; Ali in Fl. W. Pak. 100 : 349. 1977. *D. racemosum* (Thunb.) DC. Prodr. 2 : 337. 1825. *Hedysarum racemosum* Thunb. Fl. Jap. 285. 1784.

Erect, pubescent, small shrubs. Leaves trifoliolate. Flowers pink. Pods stalked and bent at right angles to its stalk.

*Fl. & Fr.* : June August.

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

Temperate and tropical Himalaya.

**Desmodium polycarpum** DC. Prodr. 2 : 334. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 171. 1876.

Erect, hairy undershrubs. Flowers purple sometimes white. Pods sessile, crowded, straight, hairy.

*Fl. & Fr.* : July August.

Chamba (LWG).

Throughout India.

**Desmodium sequax** Wall. Pl. As. Rar. 2 : 46. t. 157. 1831 ; Baker in Hook. f. Fl. Brit. India 2 : 170. 1876 ; Collett, Fl. Siml. 133. 1902 ; Parker, For. Fl. Punjab ed. 3. 151. 1956 ; Nair, Fl. Bash. Himal. 78. 1977.

Tall shrubs. Leaves trifoliolate, long pointed, leaflets pubescent above. Pods straight, sessile.

*Fl. & Fr.* : August September.

Simla (DD).

Himalaya.

**Desmodium triflorum** (L.) DC. Prodr. 2 : 334. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 173. 1876 ; Collett, Fl. Siml. 133. 1902 ; Nair, Fl. Bash. Himal. 78. 1977 ; Ali in Fl. W. Pak. 100 : 351. 1977. *Hedysarum triflorum* L. Sp. Pl. 749. 1753.

Prostrate or trailing shrubs. Leaves trifoliolate, entire, obovate, upper surface glabrous. Flowers purple - blue. Pods straight, sessile, glabrescent.

*Fl. & Fr.* : August September.

Chamba (DD), Kinnaur (BSD).

Throughout India.

**Desmodium triquetrum** (L.) DC. Prodr. 2 : 326. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 163. 1876. *Hedysarum triquetrum* L. Sp. Pl. 746. 1753. *Desmodium pseudotriquetrum* DC. in Ann. Sci. Nat. Ser. 1. 4 : 100. 1825 ; Parker, For. Fl. Punjab ed. 3. 1956.

Undershrubs. Branches triquetrous. Leaves simple, ovate or lanceolate. Pods 6-8 jointed, glabrous or pubescent, joints nearly square.

*Fl. & Fr.* : August September.

Kangra (DD).

Himalaya.

**Dolichos falcatus** Klein ex Willd. Sp. Pl. 3 : 1047. 1803 ; Baker in Hook. f. Fl. Brit. India 2 : 211. 1876 ; Nair, Fl. Bash. Himal. 78. 1977.

Climbing herbs. Stem glabrous. Leaves trifoliate. Flowers pinkish, strongly nerved.

*Fl. & Fr.* : Simla (DD).

Himalaya.

**Dumasia villosa** DC. in Ann. Sci. Nat. 4 : 96. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 183. 1876 ; Collett, Fl. Siml. 138. 1902 ; Nair, Fl. Bash. Himal. 78. 1977 ; Ali in Fl. W. Pak. 100 : 255. 1977.

Densely hairy, twining herbs. Flowers yellow or purplish. Pods flat, constricted between the seeds.

*Fl. & Fr.* : June September.

Kinnaur (DD), Simla (DD).

Himalaya.

**Erythrina glabrescens** (Prain) Parker in Indian For. 46 : 647. 1920 et For. Fl. Punjab ed. 3. 159. 1956 ; Ali in Fl. W. Pak. 100 : 236. 1977 ; Nair, Fl. Bash. Himal. 79. 1977. *E. suberosa* Roxb. var. *glabrescens* Prain in Journ. As. Soc. Beng. 66 : 410. 1897.

Prickly trees. Blooms when leafless. Petals red. Dorsal suture of young fruits pinkish.

*Fl. & Fr.* : March May.

Kinnaur (BSD).

Throughout India.

**Erythrina suberosa** Roxb. Fl. Ind. ed. 2. 3 : 253. 1832 ; Baker in Hook. f. Fl. Brit. India 2 : 189. 1876 ; Parker, For. Fl. Punjab ed. 3. 158. 1956 ; Ali in Fl. W. Pak. 100 : 235. 1977.

Trees with corky, deeply cracked bark. Branches armed with yellowish - white prickles. Leaves trifoliolate. Flowers scarlet. Pods stalked, subterete, torulose.

*Fl. & Fr.* : March June.

Kinnaur (DD).

Throughout India.

**Flemingia bracteata** (Roxb.) Wight, Icon. Ind. Or. t. 268. 1840 ; Parker, For. Fl. Punjab ed. 3. 165. 1956 ; Ali in Fl. W. Pak. 100 : 223. 1977. *Hedysarum bracteata* Roxb. Fl. Ind. 3 : 351. 1832. *Moghania bracteata* (Roxb.) Li in Amer. Jour. Bot. 31 (4) : 225. 1944 ; Nair, Fl. Bash. Himal. 84. 1977. *Flemingia strobilifera* R. Br. var. *bracteata* Baker in Hook. f. Fl. Brit. India 2 : 227. 1876.

Erect shrubs. Racemes copious, dense, paniced, flowers in clusters hidden in bracts, white, streaked with pink or rosy purple.

*Fl. & Fr.* : June September.

Chamba (DD), Kinnaur (BSIP).

Himalaya.

**Flemingia congesta** Roxb. ex Aiton in Hortus Kew ed. 2. (4) : 349. 1812 ; Baker in Hook. f. Fl. Brit. India 2 : 228. 1876 (Excl. the vars.) ; Ali in Fl. W. Pak. 100 : 225. 1977. *Crotalaria macrophylla* Willd. Sp. Pl. 3 : 199. 1891 ; Nair, Fl. Bash. Himal. 85. 1977. *Flemingia prostrata* Roxb. Fl. Ind. 3 : 340. 1832 ; Parker, For. Fl. Punjab ed. 3. 165. 1956. *Flemingia macrophylla* (Willd.) Alston in Trimen Handb. Fl. Ceyl. 6. Suppl. 85. 1931 (non Bolding 1916).

Undershrub. Leaves trifoliolate. Racemes about as long as petioles. Flowers white.

*Fl. & Fr.* : June September.

Simla (DD).

North - Western and Central Himalaya.

**Flemingia fruticulosa** Wall. ex Benth. in Miq. Pl. Jungh. 245. 1852 ; Collett, Fl. Siml. 145. 1902 ; Parker, For. Fl. Punjab ed. 3. 165. 1956 ; Ali in Fl. W. Pak. 100 : 225. 1977. *Moghania fruticulosa* (Wall. ex Benth.) Mukerjee in Bull. Bot. Soc. Bengal. 6 (1) : 12. 1952 ; Nair, Fl. Bash. Himal. 84. 1977. *F. strobilifera* (L.) R. Br. var. *fruticulosa* Baker in Hook. f. Fl. Brit. India 2 : 227. 1876.

Low trailing shrubs. Leaves simple with rounded base. Flowers white, concealed within the large folded bracts.

*Fl. & Fr.* : August - September.

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

Throughout India.

**Flemingia semialata** Roxb. ex Aiton, Hort. Kew. ed. 2 (4) : 349. 1812 ; Parker, For. Fl. Punjab ed. 3. 165. 1956 ; Ali in Fl. W. Pak. 100 : 226. 1977. *Moghania semialata* (Roxb.) Mukerjee in Bull. Bot. Soc. Beng. 6 (1) : 16. 1952 ; Nair, Fl. Bash. Himal. 85. 1977. *Flemingia congesta* var *semialata* (Roxb.) Baker in Hook. f. Fl. Brit. India 2 : 229. 1876.

Erect woody shrubs. Petioles narrowly winged. Flowers purple.

*Fl. & Fr.* : May September.

Kinnaur (DD), Kulu (DD).

Throughout India.

**Flemingia vestita** Benth. ex Baker in Hook. f. Fl. Brit. India 2 : 230. 1876 ; Collett, Fl. Siml. 146. 1902. *Magahnia vestita* (Benth. ex Baker) Kuntze, Rev. Gen. Pl. 1 : 198. 1891 ; Nair, Fl. Bash. Himal. 85. 1977.

Trailing, hairy herbs. Leaves trifoliolate. Flowers red, hairy, Pods oblong, finely hairy.

*Fl. & Fr.* : August - September.

Simla (DD).

Throughout Himalaya.

**Galactia dubia** DC. Prodr. 2 : 238. 1825. *G. tenuiflora* Willd. ex Wt. & Arn. Prodr. 206. 1834 ; Baker in Hook. f. Fl. Brit. India 2 : 192. 1876.

Twining herbs with grey, downy stem. Flowers red. Pods glabrescent.

Throughout India.

**Gleditsia macrocantha** Desf. Hist. Arb. 2 : 246. 1813 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 377. 1972.

Cultivated in gardens of Northern India.

**Glycine soja** Sieb. & Zucc. Abh. Acad. Muench. 4 (2) : 119. 1845 ; Baker in Hook. f. Fl. Brit. India 2 : 184. 1876 ; Verd Court in Kew Bull. 24 : 256. 1970 ; Nair, Fl. Bash. Himal. 79. 1977.

Twining or suberect, hairy herbs. Flowers red, calyx hairy. Pods pubescent.

*Fl. & Fr.* : August - October,

Kinnaur (BSD).

Tropical regions of Himalaya.

**Hedysarum astragaloides** Benth. ex Baker in Hook. f. Fl. Brit. India 2 : 146. 1876 ; Ali in Fl. W. Pak. 100 : 337. 1977.

Erect herbs. Leaflets large, membranous, linear oblong. Flowers yellow.

*Fl. & Fr.* : June - July.

Lahul and Spiti (DD).

North - Western Himalaya alpine regions.

**Hedysarum microcalyx** Baker in Hook. f. Fl. Brit. India 2 : 147. 1876 ; Ali in Fl. W. Pak. 100 : 335. 1977.

Undershrubs with robust stem. Leaflets large, membranous. Flowers bright red.

*Fl. & Fr.* : June September.

Lahul and Spiti (BSD, DD).

Western Himalaya temperate regions.

**Indigofera astragalina** DC. Prodr. 2 : 228. 1825 ; Gillett in Kew Bull. 14 : 290. 1960 ; Nair, Fl. Bash. Himal. 79. 1977 ; Ali in Fl. W. Pak. 100 : 79. 1977.

Densely hairy herbs. Flowers red. Pods hairy.

*Fl. & Fr.* : June - August.

Kinnaur (BSD).

North Western Himalaya.

**Indigofera atropurpurea** Buch. Ham. ex Horn. Hort. Reg. Bot. Hafn. Suppl. 152. 1819 ; Baker in Hook. f. Fl. Brit. India 2 : 101. 1876 ; Collett, Fl. Siml. 122. 1902 ; Parker, For. Fl. Punjab ed. 3. 132. 1956 ; Nair, Fl. Bash. Himal. 79. 1977 ; Ali in Fl. W. Pak. 100 : 84. 1977.

Tall shrubs. Flowers shorter than the bracts, dark purple or red. Pods glabrous.

*Fl. & Fr.* : June September.

Kinnaur (DD).

Temperate and tropical regions.

**Indigofera cassiodes** Rottl. ex DC. Prodr. 2 : 225. 1825 ; Ali in Bot. Notiser 111 : 569. 1958 et in Fl. W. Pak. 100 : 83. 1977 ; Nair, Fl. Bash. Himal. 81. 1977. *Indigofera pulchella* auct. (non Roxb.) Baker in Hook. f. Fl. Brit. India 2 : 101. 1876 ; Collett, Fl. Siml. 123. 1902 ; Parker, For. Fl. Punjab ed. 3. 132. 1956.

Erect shrubs. Leaflets 11 - 21, opposite. Flowers bright pink, fading to orange violet when dry.

*Fl. & Fr.* : March - May.

Simla (DD).

Plains of Northern India.

**Indigofera cedrorum** Dunn in Kew Bull. 1920 : 337. 1920.

*Fl. & Fr.* : June September.

Chamba (DD). (Type in DD).

Western Himalaya.



**Indigofera dosua** Buch. Ham. ex D. Don, Prodr. Fl. Nepl. 244. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 102. 1876 ; Collett, Fl. Siml. 123. 1902 ; Nair, Fl. Bash. Himal. 79. 1977.

Shrubs. Leaflets 17-31, opposite, pubescent or tomentose. Flowers bright red. Pods hairy.

*Fl. & Fr.* : June - July.

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

Himalaya.

**Indigofera hamiltonii** Grah. ex Duthie & Prain in Ann. Bot. Gard. Calcutta 9 (1) : 22. t. 29. 1901 ; Ali in Bot. Notiser 111 : 573. 1958 et Fl. W. Pak. 100 : 85. 1977.

Tall shrubs. Flowers dark red. Pods glabrous, linear, turgid.

*Fl. & Fr.* : April - July.

Kangra (DD).

Tropical and temperate regions of Himalaya.

**Indigofera hebepetala** Benth. ex Baker in Hook. f. Fl. Brit. India 2 : 101. 1876 ; Collett, Fl. Siml. 123. 1902 ; Parker, For. Fl. Punjab ed. 3. 129. 1956 ; Ali in Fl. W. Pak. 100 : 85. 1977 ; Nair, Fl. Bash. Himal. 80. 1977. var. **hebepetala**.

Shrubs with branches adpressedly hairy. Leaflets with bristly hairs on both sides. Flowers crimson - red. Pods glabrous.

*Fl. & Fr.* : April - September.

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

Himalaya.

**Indigofera hebepetala** Benth. ex Baker. var. **glabra** Ali in Bot. Notiser. 111 : 572. 1958 et Fl. W. Pak. 100 : 84. 1977.

Shrubs with glabrous leaflets. Flowers crimson - red. Pods glabrous.

*Fl. & Fr.* : May August.

Simla (BSD, DD).

Himalaya.

**Indigofera heterantha** Wall. ex Brandis, For. Fl. N. W. & Cent. India 135. 1874 ; Nair, Fl. Bash. Himal. 80. 1977 ; Ali in Bot. Notiser 111 : 566. 1958 et Fl. W. Pak. 100 : 82. 1977. *Indigofera gerardiana* var. *heterantha* (Wall. ex Brandis) Baker in Hook. f. Fl. Brit. India 2 : 101. 1876.

Silvery pubescent, tomentose shrubs. Leaflets 5 9 31. Flowers red or purple. Pods glabrous.

*Fl. & Fr.* : May October.

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

Temperate and subtropical Western regions of Himalaya.

**Indigofera gerardiana** Wal. ex Baker in Hook. f. Fl. Brit. India 2 : 100. 1876 ; Parker, For. Fl. Punjab ed. 3. 128. 1956. *I. rubroviolacea* Dunn in Kew Bull. 1922 : 117. 1922.

Shrubs with silvery pubescent or tomentose branches. Leaflets 9 17. Inflorescence pedunculate raceme. Flowers pale red or purple. Pods pubescent.

*Fl. & Fr.* : May July.

Chamba (DD).

Temperate Himalaya.

**Indigofera himalayensis** Ali in Bot. Notiser 111 : 564. 1958 et Fl. W. Pak. 100 : 85. 1977.

Erect herbs. Pods glabrous.

*Fl. & Fr.* : May July.

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

Himalaya.

**Indigofera hirsuta** L. Sp. Pl. 751. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 98. 1876.

Suberect herbs with grey or brown pubescens. Flowers red. Pods short, straight, pubescent.

*Fl. & Fr.* : September - November.

Chamba (DD).

Throughout India.

**Indigofera linifolia** (L. f.) Retz. Obs. 4 : 29. 1786 ; Baker in Hook. f. Fl. Brit. India 2 : 92. 1876 ; Nair, Fl. Bash. Himal. 80. 1977 ; Ali in Fl. W. Pak. 100 : 69. 1977. *Hedysarum linifolium* L. f. Suppl. Pl. 331. 1781.

Prostrate herbs. Leaves simple, linear. Flowers red. Pods 1 seeded.

*Fl. & Fr.* : August - September.

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

Throughout India.

**Indigofera linnaei** Ali in Bot. Notiser 111 : 572. 1958 et Fl. W. Pak. 100 : 75. 1977. *I. enneaphylla* L. Mant. 2 : 272. 1771 (nom. illeg.) ; Baker in Hook. f. Fl. Brit. India 2 : 94. 1876 ; Collett, Fl. Siml. 121. 1902.

Perennial, silvery pubescent herbs. Flowers small, bright red. Pods pubescent.

*Fl. & Fr.* : June - September.

Simla (DD).

Throughout India.

**Indigofera trifoliata** L. Cent. Pl. 2 : 29. 1756 ; Baker in Hook. f. Fl. Brit. India 2 : 96. 1876 ; Collett, Fl. Siml. 121. 1902 ; Ali in Bot. Notiser 111 : 552. 1958 et Fl. W. Pak. 100 : 78. 1977. *Indigofera prostrata* Willd. Sp. Pl. ed. 4. 3 : 1226. 1803 ; Nair, Fl. Bash. Himal. 81. 1977.

Perennial herbs with spreading branches. Flowers red.

*Fl. & Fr.* : August - September.

Throughout India.

**Lablab purpureus** (L.) Sweet, Hort. Brit. ed. 1. 481. 1827 ; Ali in Fl. W. Pak. 100 : 251. 1977. *Dolichos lablab* L. Sp. Pl. 725. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 209. 1876.

Subglabrous, wide twining, perennial herbs. Flowers reddish or white. Pod tipped with the hooked persistent base of the style.

Willd and universally cultivated throughout India.

**Lathyrus aphaca** L. Sp. Pl. 729. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 179. 1876 ; Collett, Fl. Siml. 136. 1902 ; Nair, Fl. Bash. Himal. 81. 1977 ; Ali in Fl. W. Pak. 100 : 276. 1977.

Herbs. Rachis ending into a tendril. Leaflets absent. Stipules foliaceous. Flowers yellow. Pods linear, oblong, wingless.

*Fl. & Fr.* : February May.

Chamba (DD).

North Western Himalaya temperate regions.

**Lathyrus emodii** (Wall. ex Fritsch) Ali in Biologia 11 (2) : 4. 1965 et Fl. W. Pak. 100 : 277. 1977. *Orobus emodi* Wall. ex Fritsch in Sitzungsber. Akad. Wissensch. Wien. 104 : 489. 1896. *L. luteus* (L.) Peterm. Deutsch. Fl. 155. 1849 (non Moench, 1794) ; Baker in Hook. f. Fl. Brit. India 2 : 180. 1876 ; Collett, Fl. Siml. 137. 1902 ; Nair, Fl. Bash. Himal. 81. 1977.

Perennial glabrous herb. Rachis ending in a bristle. Flowers yellow tinged with red or orange. Pods linear, beaked.

*Fl. & Fr.* : May October.

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

Western Himalaya, temperate and tropical regions.

**Lathyrus erectus** Lagasca, Gen. et. Sp. Nov. 22. 1816 ; Ali in Fl. W. Pak. 100 : 276. 1977. *L. inconspicuus* auct. (non L. 1753) Baker in Hook. f. Fl. Brit. India 2 : 180. 1876 ; Collett, Fl. Siml. 137. 1902 ; Nair, Fl. Bash. Himal. 81. 1977.

Glabrous herbs. Rachis ending in a bristle. Leaflets 2, stipules narrow. Flowers red.

*Fl. & Fr.* : April May.

Simla (DD).

Western Himalaya.

**Lathyrus humilis** (Ser.) Fischer ex Sprengel. Syst. Veg. 3 : 263. 1826 ; Ali in Fl. W. Pak. 100 : 277. 1977. *L. altaicus* Ledeb. Ic. Bl. Fl. Ross. 1 : 13. t. 53. 1829 et. Fl. Alt. 3 : 355. 1831 ; Baker in Hook. f. Fl. Brit. India 2 : 180. 1876 ; Nair, Fl. Bash. Himal. 81. 1977. *L. ovatus* Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 200. 1835.

Glabrous herbs. Petiole terminating into a tendril. Flowers reddish.

*Fl. & Fr.* : May August.

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

Western Himalaya temperate regions.

**Lathyrus pratensis** L. Sp. Pl. 733. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 180. 1876 ; Collett, Fl. Siml. 136. 1902 ; Nair, Fl. Bash. Himal. 82. 1977 ; Ali in Fl. W. Pak. 100 : 276. 1977.

Hairy herbs. Rachis ending into a tendril. Leaflets 2. Flowers yellow. Pods linear.

*Fl. & Fr.* : June August.

Kinnaur (DD), Kulu (DD).

Nepal, Western Himalaya temperate regions.

**Lathyrus sativus** L. Sp. Pl. 730. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 179. 1876 ; Ali in Fl. W. Pak. 100 : 280. 1977.

Herbs. Stem winged. Leaflets 2, linear. Flowers solitary. Pods oblong, winged on the back.

*Fl. & Fr.* : May - August.

Kulu (DD).

North - Western Himalaya and Nepal. Cultivated.

**Lathyrus sphaericus** Retz. Obs. Bot. 3 : 39. 1783 ; Baker in Hook. f. Fl. Brit. India 2 : 180. 1876 ; Collett, Fl. Siml. 136. 1902 ; Ali in Fl. W. Pak. 100 : 282. 1977.

Herbs. Rachis ending in a tendril. Flowers red.

*Fl. & Fr.* : May July.

Chamba (BSD).

North Western Himalaya and Nepal.

**Lens culinaris** Medic. in Vorles Churpf. Phys. Ges. 2 : 361. 1787 ; Nair, Fl. Bash. Himal. 82. 1977 ; Ali in Fl. W. Pak. 100 : 263. 1977. *L. esculenta* Moench. Meth. 131. 1794. *Ervum lens* L. Sp. Pl. 738. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 179. 1876.

Pilose herbs. Flowers pale purple.

*Fl. & Fr.* : May August.

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

Commonly cultivated.

**Lens himalayensis** Alef. in Bonplandia 9 : 130. 1961.

*Fl. & Fr.* : April July.

Simla (DD).

Himalaya.

**Lespedeza elegans** Camb. in Jacq. Voy. Bot. 43. t. 52. 1844 ; Baker in Hook. f. Fl. Brit. India 2 : 143. 1876 ; Ali in Biologia 12 : 39. 1966. et Fl. W. Pak. 100 : 359. 1977.

Herbs. Stem finely downy. Leaflets oblong, grey silky beneath. Pods oblong, downy.

*Fl. & Fr.* : June - August.

Chamba (DD).

Temperate regions of Himalaya.

**Lespedeza gerardiana** Grah. ex Maxim. in Acta Horti Petropol. 2 : 373. 1873 ; Baker in Hook. f. Fl. Brit. India 2 : 142. 1876 ; Collett, Fl. Siml. 115. 1902 ; Parker, For. Fl. Punjab ed. 3. 145. 1956 ; Nair, Fl. Bash. Himal. 82. 1977 ; Ali in Fl. W. Pak. 100 : 360. 1977.

Shrubs. Leaflets longer than broad, grey silky below. Flowers pale yellow, keel tipped with purple. Pods shorter than calyx.

*Fl. & Fr.* : May August.

Kinnaur (BSD), Simla (DD).

Himalaya - temperate regions.

***Lespedeza juncea*** (L. f.) Pers. Syn. Pl. 2 : 318. 1807 ; Baker in Hook. f. Fl. Brit. India 2 : 142. 1876 ; Collett, Fl. Siml. 127. 1902 ; Ali in Biologia 12 : 40. 1966 et Fl. W. Pak. 100 : 360. 1977 ; Nair, Fl. Bash. Himal. 82. 1977. *Hedysarum junceum* L. f. Decas prima Pl. et. 4. 1762. *Lespedeza aitchisonii* Ricker in Lingnan Sci. J. 20. 199. 1942.

Small shrubs with crowded leaves. Flowers pale-purple. Pods small, sessile.

*Fl. & Fr.* : August October.

Kinnaur (BSD).

Western Himalaya temperate regions.

***Lespedeza juncea*** (L. f.) Pers. Syn. Pl. 2 : 318. 1807. var. ***sericea*** (Thunb.) Lace & Hemsley in J. Linn. Soc. Bot. 23 : 181. 1887 ; Ali in Biologia 12 : 40. 1966 et Fl. W. Pak. 100 : 363. 1977. *Hedysarum sericeum* Thunb. Fl. Jap. 289. 1784. (non. Mill. 1768). *L. cuneata* (du Mont de Courset) G. Don, Gen. Syst. 2 : 307. 1832 ; Nair, Fl. Bash. Himal. 82. 1977. *Anthyllis cuneata* du Mont de Courset in Bot. Cult. 6 : 100. 1811. *L. sericea* (Thunb.) Miq. in Ann. Mus. Lag. Bot. 3 : 49. 1667 ; Baker in Hook. f. Fl. Brit. India 2 : 142. 1876 ; Collett, Fl. Siml. 127. 1902 ; Parker For. Fl. Punjab ed. 3. 144. 1956.

Erect herbs or undershrubs. Leaves subsessile, leaflets wedge shaped. Flowers pale-yellow or white tinged with purple. Pods thinly silky.

*Fl. & Fr.* : June October.

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

Himalaya.

***Lespedeza tomentosa*** (Thunb.) Sieb. ex Maxim. in Acta Horti Petropol. 2 : 376. 1873 ; Baker in Hook. f. Fl. Brit. India 2 : 143. 1876 ; Ali in Biologia 12 : 38. 1966 et Fl. W. Pak. 100 : 359. 1977 ; Nair, Fl. Bash. Himal. 83. 1977. *Hedysarum tomentosum* Thunb. Fl. Jap. 286. 1784.

Densely pubescent herbs. Flowers whitish. Pods oblong, pubescent.

*Fl. & Fr.* : June September.

Kinnaur (DD).

Western Himalaya - temperate regions.

**Lotus corniculatus** L. Sp. Pl. 775. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 91. 1876 ; Collett, Fl. Siml. 120. 1902 ; Ali in Fl. W. Pak. 100 : 314. 1977.

Herbs. Leaves 5 foliate. Flowers in peduncled axillary umbels, yellow with crimson streaks. Pods cylindrical, straight.

*Fl. & Fr.* : May October.

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

Throughout India.

**Medicago falcata** L. Sp. Pl. 779. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 90. 1876 ; Collett, Fl. Siml. 119. 1902 ; Nair, Fl. Bash. Himal. 83. 1977 ; Ali in Fl. W. Pak. 100 : 307. 1977.

Erect or decumbent herbs. Leaflets shortly serrate from the middle upward. Flowers yellow. Pods glabrous, curved.

*Fl. & Fr.* : May August.

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

Western Himalaya and Nepal.

**Medicago lupulina** L. Sp. Pl. 779. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 90. 1876 ; Collett, Fl. Siml. 119. 1902 ; Nair, Fl. Bash. Himal. 84. 1977 ; Ali in Fl. W. Pak. 100 : 306. 1977.

Procumbent herbs. Leaflets obovate. Heads globose, yellow. Pods glabrous or downy, finely black.

*Fl. & Fr.* : February October.

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

Tropical and temperate tracts of North-Western India.



**Medicago polymorpha** L. Sp. Pl. 779. 1753 ; emend. Shin. in Rhodora 58 : 5. 1957 ; Ali in Fl. W. Pak. 100 : 302. 1977. *M. denticulata* Willd. Sp. Pl. 3 : 1414. 1800 ; Baker in Hook. f. Fl. Brit. India 2 : 90. 1876 ; Collett, Fl. Siml. 120. 1902 ; Nair, Fl. Bash. Himal. 83. 1977.

Glabrous, procumbent herbs. Flowers in clusters of 2 - 6, yellow. Pods prickly, spirally twisted, net veined.

*Fl. & Fr.* : May August.

Kinnaur (BSD).

Tropical regions of North Western India.

**Medicago sativa** L. Sp. Pl. 778. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 90 : 1876 ; Nair, Fl. Bash. Himal. 84. 1977 ; Ali in Fl. W. Pak. 100 : 305. 1977.

Herbs. Flowers purple to blue. Pods forming a double spiral.

*Fl. & Fr.* : May September.

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

Cultivated for forage.

**Melilotus alba** Deser. in Lamk. Ency. Meth. 4 : 63. 1796 ; Baker in Hook. f. Fl. Brit. India 2 : 89. 1876 ; Ali in Fl. W. Pak. 100 : 310. 1977.

Tall, robust herbs. Leaf toothed, pinnately 3 foliate. Flowers white.

*Fl. & Fr.* : May - September.

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

Throughout India.

**Melilotus indica** (L.) All. Fl. Pedem. 1 : 308. 1785 ; Ali in Fl. W. Pak. 100 : 308. 1977. *Trifolium indicum* L. Sp. Pl. 765. 1753. *M. parviflorus* Desf. Fl. Alt. 2 : 192. 1799 ; Baker in Hook. f. Fl. Brit. India 2 : 89. 1876.

Pubescent herbs. Flowers yellow. Pods 1 seeded.

*Fl. & Fr.* : March - September.

Simla (BSD).

Throughout India.

**Melilotus officinalis** (L.) Pallas. Deser. Reise 537. 1776 ; Baker in Hook. f. Fl. Brit. India 2 : 89. 1876 ; Ali in Fl. W. Pak. 100 : 309. 1977. *M. officinalis* L. Sp. Pl. 765. 1753.

Similar to *M. alba*. Flowers yellow.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD).

Western Himalaya.

**Millettia extensa** Benth. in Fl. Jungh. 249. 1852 ; Baker in Hook. f. Fl. Brit. India 2 : 109. 1876 ; Ali in Fl. W. Pak. 100 : 52. 1977. *M. auriculata* Baker ex Brandis, For. Fl. N.W. & Cent. India 138. 1874 ; Baker in Hook. f. Fl. Brit. India 2 : 108. 1876 ; Parker, For. Fl. Punjab ed. 3. 131. 1956 ; Nair, Fl. Bash. Himal. 84. 1977.

Large, robust, woody climbers. Flowers dull white. Pods woody.

*Fl. & Fr.* : July September.

Simla (DD).

Himalaya.

**Mucuna capitata** (Sweet, Hort. Brit. ed. 1. 482. 1826-27) Wt. & Arn. Prodr. 255. 1834 ; Baker in Hook. f. Fl. Brit. India 2 : 187. 1876.

Cultivated race of *M. pruriens*. Pods larger and bristles much shorter and deciduous.

Foothills of the Western and Eastern Himalaya.

**Mucuna nigricans** (Lour.) Steud. Nomencl. Bot. ed. 2. 2 : 163. 1841 ; Ali in Fl. W. Pak. 100 : 237. 1977. *Citta nigricans* Lour. Fl. Cochinch. 456. 1790. *Mucuna imbricata* DC. Prodr. 2 : 406. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 185. 1876 ; Parker, For. Fl. Punjab ed. 3. 157. 1956 ; Nair, Fl. Bash. Himal. 85. 1977.

Woody climbers. Flowers purple. Pods clothed with dense bristles.

*Fl. & Fr.* : June October.

Simla (DD).

Himalaya.

**Mucuna pruriens** (L.) DC. Prodr. 2 : 405. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 187. 1876 ; Ali in Fl. W. Pak. 238. 1977. *Dolichos pruriens* L. in Stickman Herb. Amb. 23. 1754.

Wide spreading climbers. Flowers purple. Pod curved upwards at the tip, densely clothed with rusty, peristant irritating bristles.

*Fl. & Fr.* : July September.

Sirmur (LWG).

Throughout India.

**Ougeinia ooginsis** (Roxb.) Hochr. in Bull. Soc. Ann. Cons. Jard. Bot. Geneve 13 : 51. 1909 ; Ali in Fl. W. Pak. 100 : 341. 1977 ; Nair, Fl. Bash. Himal. 86. 1977. *Dalbergia oogeinsis* Roxb. Fl. Ind. 3 : 220. 1832. *O. dalbergioides* Benth. Pl. Jungh. 216. 1851 ; Baker in Hook. f. Fl. Brit. India 2 : 161. 1876 ; Collett, Fl. Siml. 130. 1902 ; Parker, For. Fl. Punjab ed. 3. 148. 1956.

Deciduous trees. Leaves trifoliate. Flowers white or rosy. Pod linear, smooth with distinct joints.

*Fl. & Fr.* : March - May.

Chamba (DD), Simla (DD).

Hilly tracts of Northern India.

**Oxytropis cachemirica** Camb. in Jacq. Voy. Bot. 38. t. 44. 1864 ; Baker in Hook. f. Fl. Brit. India 2 : 139. 1876 ; Ali in Fl. W. Pak. 100 : 111. 1977.

Herbs. Leaflets densely pilose, hairs silky. Heads long-peduncled. Pods sessile, inflated, round oblong.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD).

Western Himalaya and Western Tibet.

**Oxytropis humifusa** Kar. & Kir. in Bull. Soc. Nat. Mosc. 15 : 535. 1842 ; Ali in Fl. W. Pak. 100 : 119. 1977. *O. lapponica* var. *humifusa* (Kar. & Kir.) Baker in Hook. f. Fl. Brit. India 2 : 137. 1876. *O. lapponica* var. *jacquemontiana* Benth. ex Baker in Hook. f. Fl. Brit. India 2 : 137. 1876.

Dwarf, stemless herbs. Heads 1 3 flowered, flowers bright purple.

*Fl. & Fr.* : June July.

Lahul and Spiti (DD).

Western Himalaya alpine region.

**Oxytropis lapponica** (Wahl.) Gay, Correspondence, Flora 10 : 30. 1827 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 416. 1972 ; Ali in Fl. W. Pak. 100 : 114. 1977. *Phaca lapponica* Wahl. Veg. Clim. Helv. 131. 1813. *Oxytropis lapponica* var. *xanthantha* Baker in Hook. f. Fl. Brit. India 2 : 137. 1876.

Stemless or short stemed herbs. Flowers bright purple, 6-20 in dense rounded heads. Pod linear-oblong, clothed with few obscure black or white hairs.

*Fl. & Fr.* : June August.

Lahul and Spiti (DD).

Western Himalaya alpine and temperate regions and Nepal.

**Oxytropis microphylla** (Pallas) DC. Astrag. 83. 1802 ; Baker in Hook. f. Fl. Brit. India 2 : 139. 1876 *p.p.* ; Ali in Fl. W. Pak. 100 : 109. 1977. *Phaca microphylla* Pallas, Reise 3 : 744. t. 10. f. 1. 1776.

Stemless, erect herbs with densely caespitose tufts. Leaves short petioled, leaflets crowded. Flowers bright purple. Pods half bilocular, sessile, linear, recurved, densely gland dotted, glabrous.

*Fl. & Fr.* : April August.

Lahul and Spiti (BSD, DD).

Himalaya alpine regions.

**Oxytropis mollis** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 198. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 137. 1876 ; Nair, Fl. Bash. Himal. 86. 1977 ; Ali in Fl. W. Pak. 100 : 118. 1977. *O. thomsonii* Benth. ex Bunge in Mem. Acad. Imp. Sci. St. Petersburg. Ser. 7. 22 (1) : 72. 1874.

Tufted herbs. Leaves long petioled, densely clothed with persistent, adpressed, white silky hairs on both sides.

*Fl. & Fr.* : May - August.

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

Western Himalaya alpine regions and Nepal.

**Oxytropis tatarica** Camb. ex Bunge in Mem. Acad. Imp. Sci. St. Petersb. Ser. 7. 22 (1) : 16. 1874 ; Baker in Hook. f. Fl. Brit. India 2: 138. 1876 ; Ali in Fl. W.Pak. 100: 111. 1977.

Densely tufted, stemless herbs. Leaves densely matted with white, silky hairs. Flowers yellow with purple tint sometimes. Pods much inflated, membranous with dense, white silky hairs.

*Fl. & Fr.* : July August.

Lahul and Spiti (BSD, DD).

Western Himalaya and Western Tibet.

**Parochetus communis** Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 240. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 86. 1876 ; Collett, Fl. Siml. 116. 1902 ; Nair, Fl. Bash. Himal. 86. 1977.

Prostrate hairy herbs. Flowers deep violet.

*Fl. & Fr.* : May September.

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

Himalaya alpine and temperate regions.

**Phaseolus coccineus** L. Sp. Pl. 724. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 200. 1876 ; Bailey, Man. Cult. Pl. (rev. ed.) 574. 1968 ; Ali. in Fl. W. Pak. 100 : 241. 1977. *P. multiflorus* Willd. Sp. Pl. 3 : 1030. 1810.

Herbaceous twiners. Flowers bright scarlet or sometimes white, arranged in long racemes.

*Fl. & Fr.* : July August.

Lahul and Spiti (DD).

Cultivated.

**Phaseolus lunatus** L. Sp. Pl. 724. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 200. 1876 ; Verdcourt in Fl. Trop. E. Afr. 4 : 651. 1971 ; Ali in Fl. W. Pak. 100 : 240. 1977.

Tall twiners, easily distinguishable from all the other species by the shape of pod with the upper suture recurved and the lower broadly rounded.

Commonly cultivated.

**Phaseolus vulgaris** L. Sp. Pl. 723. 1753; Baker in Hook. f. Fl. Brit. India 2 : 200. 1876 ; Collett, Fl. Siml. 140. 1902 ; Verdcourt in Fl. Trop. E. Afr. 4 : 614. 1971; Ali in Fl. W. Pak. 200 : 240. 197.

Herbaceous twiners. Flowers white or lilac-purple. Pods linear, recurved.

*Fl. & Fr.* : July September.

Kinnaur (BSD).

Cultivated throughout India.

**Piptanthus nepalensis** (Hook.) D. Don in Sweet, Brit. Flower Gard. 3 : t. 264. 1828 ; Baker in Hook. f. Fl. Brit. India 2 : 62. 1876 ; Collett, Fl. Siml. 112. 1902 ; Nair, Fl. Bash. Himal. 87. 1977. *Baptisia nepalensis* Hook. Exot. Fl. t. 131. 1824.

Shrubs. Leaves trifoliate, glabrescent. Flowers yellow. Pods flat, 3 10 seeded.

*Fl. & Fr.* : May December.

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

Temperate Himalaya.

**Pisum sativum** L. Sp. Pl. 737. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 181. 1876 ; Nair, Fl. Bash. Himal. 87. 1977 ; Ali in Fl. W. Pak. 100 : 264. 1977. var. **sativum**.

Seeds rounded.

*Fl. & Fr.* : October March.

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

Cultivated throughout India.

**Pisum sativum** L. var. **arvense** (L.) Poiret in Lamk. Encycl. Meth. Bot. 5 : 456. 1804 ; Ali in Fl. W. Pak. 100 : 164. 1977. *P. arvense* L. Sp. Pl. 727. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 181. 1876.

Seeds compressed.

*Fl. & Fr.* : July September.

Lahul and Spiti (BSD).

Cultivated commonly.

**Pueraria tuberosa** (Roxb. ex Willd.) DC. in Ann. Sci. Nat. 3 : 97. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 197. 1876 ; Collett, Fl. Siml. 139. 1902 ; Parker, For. Fl. Punjab ed. 3. 160. 1956 ; Ali in Fl. W. Pak. 100 : 234. 1977. *Hedysarum tuberosum* Roxb. ex Willd. Sp. Pl. 3 : 1197. 1803.

Twining shrubs with large tuberous roots. Flowers blue. Pods flat and clothed with long, grey, silky bristly hairs.

*Fl. & Fr.* : March July.

Sirmur (BSD).

Western Himalaya and Nepal.

**Rhynchosia aurea** DC. Prodr. 2 : 386. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 221. 1876.

Wide trailing herbs. Flowers bright yellow. Pods membranous, thinly clothed with fine, spreading hairs.

*Fl. & Fr.* : June September.

Sirmur (LWG).

Throughout India.

**Rhynchosia falconeri** Baker in Hook. f. Fl. Brit. India 2 : 224. 1876 ; Collett, Fl. Siml. 143. 1902 ; Nair, Fl. Bash. Himal. 87. 1977.

Hairy shrubs with long climbing or trailing stem. Flowers yellow. Pods hairy.

*Fl. & Fr.* : August September.

Simla (DD).

North Western Himalaya and Nepal.

**Rhynchosia himalensis** Benth. ex Baker in Hook. f. Fl. Brit. India 2 : 225. 1876 ; Collett, Fl. Siml. 143. 1902 ; Nair, Fl. Bash. Himal. 87. 1977 ; Ali in Fl. W. Pak. 100 : 228. 1977.

Climbing or trailing herbs, viscidly glandular. Flowers yellow, glabrous and very conspicuously veined with purple. Pod finely downy, recurved, narrowed at both ends.

*Fl. & Fr.* : August October.

Chamba (DD), Kinnaur (BSD).

Western and Central Himalaya.

**Rhynchosia minima** (L.) DC. Prodr. 2 : 385. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 223. 1876 ; Collett, Fl. Siml. 143. 1902 ; Nair, Fl. Bash. Himal. 87. 1977 ; Ali in Fl. W. Pak. 100 : 231. 1977. *Dolichos minimus* L. Sp. Pl. 726. 1753. *Rhynchosia laxiflora* Camb. in Jacq. Voy. Bot. 44. t. 54. 1844.

Pubescent, trailing or climbing herbs. Flowers yellow or yellow streaked purple. Pods pubescent.

*Fl. & Fr.* : June August.

Kinnaur (BSD).

Throughout India.

**Rhynchosia pseudo cajan** Camb. in Jacq. Voy. Bot. 4 : 45. t. 55. 1844 ; Baker in Hook. f. Fl. Brit. India 2 : 223. 1876 ; Collett, Fl. Siml. 143. 1902 ; Parker, For. Fl. Punjab ed. 3. 163. 1956 ; Nair, Fl. Bash. Himal. 87. 1977 ; Ali in Fl. W. Pak. 100 : 228. 1977.

Erect shrubs. Leaves white tomentose below. Flowers yellow. Pods white tomentose.

*Fl. & Fr.* : August October.

Kinnaur (DD).

Western Himalaya and Nepal.

**Rhynchosia rothii** Benth. ex Aitch. Cat. Pl. Punj. Sind. 50. 1869 ; Ali in Fl. W. Pak. 100 : 238. 1977. *R. sericea* Spanoghe in Linnaea 150 : 195. 1841 (non Gill. ex Hook. & Arnott, 1833) ; Baker in Hook. f. Fl. Brit. India 2 : 225. 1876 ; Collett, Fl. Siml. 144. 1902 ; Parker, For. Fl. Punjab ed. 3. 163. 1956 ; Nair, Fl. Bash. Himal. 88. 1977.

Twining undershrubs. Flowers red. Pods tipped with glabrous persistent style.

*Fl. & Fr.* : July September.

Chamba (DD).

Central and North - Western Himalaya.

**Rhynchosia viscosa** DC. Prodr. 2 : 387. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 225. 1876.



Woody shrubs with wide twining stem, clothed with deciduous fine short, grey, viscous, pubescence. Pods straight, finely pubescent.

Throughout India.

**Robinia pseudo acacia** L. Sp. Pl. 722. 1753 ; Collett, Fl. Siml. 108. 1902 ; Parker, For. Fl. Punjab ed. 3. 132. 1956 ; Nair, Fl. Bash. Himal. 88. 1977 ; Ali in Fl. W. Pak. 100 : 51. 1977.

Trees. Stipules spinous. Flowers dull white, fragrant, in pendulus raceme.

*Fl. & Fr.* : June October.

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

Cultivated as an ornamental plant.

**Shuteria involucrata** (Wall.) Wt. & Arn. Prodr. Fl. Pen. Ind. Or. 1 : 207. 1834 ; Ali in Fl. W. Pak. 100 : 257. 1977. *Glycine involucrata* Wall. Pl. As. Rar. 3 : 22. t. 241. 1832. *Shuteria vestita* Wt. & Arn. var. *involucrata* Baker in Hook. f. Fl. Brit. India 2 : 182. 1876 ; Collett, Fl. Siml. 137. 1902.

Hairy herbs. Flowers white, tinged with pink. Pods flat, narrow, with persistent style base.

*Fl. & Fr.* : June November.

Simla (DD).

Himalaya.

**Smithia ciliata** Royle, Ill. Bot. Himal. Mount. 201. t. 35. f. 2. 1834 ; Baker in Hook. f. Fl. Brit. India 2 : 150. 1876 ; Collett, Fl. Siml. 129. 1902 ; Nair, Fl. Bash. Himal. 88. 1977 ; Babu, Herb. Fl. Dehra Dun 162. 1977.

Erect herbs. Rachis ending in a bristle. Flowers pale blue or white.

*Fl. & Fr.* : July September.

Kangra (DD).

Himalaya.

**Sophora mollis** (Royle) Baker in Hook. f. Fl. Brit. India 2 : 251. 1878 ; Collett, Fl. Siml. 145. 1902 ; Parker, For. Fl. Punjab ed. 3. 168. 1956 ; Nair, Fl. Bash. Himal. 88. 1977 ; Ali in Fl. W. Pak. 100 : 27. 1977. *Edwardsia mollis* Royle, Ill. Bot. Himal. Mount. 196. t. 32. f. 2. 1834.

Erect shrubs. Flowers small, develop before the leaves, yellow. Pods glabrous.

*Fl. & Fr.* : March July.

Kinnaur (BSD), Simla (DD).

Northern India, Western and Central Himalaya.

**Spartium junceum** L. Sp. Pl. 708. 1753 ; Pakrer, For. Fl. Punjab ed. 3. 170. 1956 ; Ali in Fl. W. Pak. 100 : 32. 1977.

Tall shrubs. Flowers yellow in loose terminal racemes.

*Fl. & Fr.* : January June.

Simla (DD).

Western Himalaya.

**Tephrosia purpurea** (L.) Pers. Syn. Pl. 2 : 329. 1807 ; Baker in Hook. f. Fl. Brit. India 2 : 112. 1876 ; Collett, Fl. Siml. 124. 1902 ; Parker, For. Fl. Punjab ed. 3. 131. 1956 ; Ali in Biologia 10 : 29. 1964 et in Fl. West Pak. 100 : 63. 1977.

Copiously branched, suberect herbs. Flowers red. Pods sessile, pubescent, flat.

*Fl. & Fr.* : July September.

Chamba (DD).

Throughout India.

**Tephrosia strigosa** (Dalz.) Santapau & Maheshwari in Journ. Bombay Nat. Hist. Soc. 54 : 805. 1957 ; Ali in Biologia 10 : 24. 1964 et Fl. W. Pak. 100 : 59. 1967 ; Nair, Fl. Bash. Himal. 88. 1977. *Macronyx strigosus* Dalz. in Hook. Kew Journ. 2 : 35. 1950. *T. tenuis* Wall. ex Dalz. & Gibs. Bomb. Fl. 61. 1861 ; Baker in Hook. f. Fl. Brit. India 2 : 111. 1876.

Herbs with stem filiform and densely caespitose. Leaves simple. Pods linear.

*Fl. & Fr.* : May August.

Kinnanr (BSD).

Northern India.

**Teramnus labialis** (L. f.) Spreng. Syst. Veg. 3 : 235. 1826 ; Baker in Hook. f. Fl. Brit. India 2 : 184. 1876 ; Verdcourt in Kew. Bull. 24 : 266 1970. *Glycine labialis* L. f. Suppl. Pl. 325. 1781. *Teramnus debilis* (Ait.) Prain, Beng. Pl. 393. 1903. *Glycine debilis* Ait. Mort. Kew 3 : 24. 1789.

Twining herbs. Flowers red. Pod linear, glabrous, recurved.

*Fl. & Fr.* : May September.

Simla (BSIP).

Throughout India.

**Thermopsis barbata** Royle, Ill. Bot. Himal. Mount. 196. t. 32. fig. 1. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 62. 1876 ; Collett, Fl. Siml. 112. 1902 ; Nair, Fl. Bash. Himal. 89. 1977 ; Ali in Fl. W. Pak. 100 : 30. 1977.

Herbs. Leaves trilobed, glabrous or hairy, entire. Flowers dark violet or purple. Pods hairy, linear oblong.

*Fl. & Fr.* : April August.

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

Temperate to subalpine Himalaya.

**Thermopsis inflata** Camb. in Jacquem. Voy. Bot. 4 : 34. t. 39. 1843 ; Baker in Hook. f. Fl. Brit. India 2 : 63. 1876 ; Ali in Fl. W. Pak. 100 : 31. 1977.

Herbs. Leaflets finely downy. Flowers yellow. Pods broad - oblong, very much inflated.

*Fl. & Fr.* : May July.

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

Alpine Western Himalaya and Ladakh.

**Trifolium alexandrianum** L. Cent. Pl. 1 : 25. 1755 ; Nair, Fl. Bash. Himal. 89. 1977 ; Ali in Fl. W. Pak. 100 : 288. 1977.

Annual herbs. Flowers white to yellowish - white.

Cultivated as fodder crop.

**Trifolium dubium** Sibth. Fl. Oxon. 231. 1794 ; Ali in Fl. W. Pak. 100 : 289. 1977. *T. minus* Smith in Relham, Fl. Cant. ed. 2. 290. 1802 ; Baker in Hook. f. Fl. Brit. India 2 : 86. 1876 ; Collett, Fl. Siml. 116. 1902.

Herbs with trailing stem, glabrous. Flowers yellow. Pods obovoid.

*Fl. & Fr.* : April May.

Simla (DD).

Cultivated.

**Trifolium pratense** L. Sp. Pl. 768. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 86. 1876 ; Collett, Fl. Siml. 116. 1902 ; Nair, Fl. Bash. Himal. 89. 1977 ; Ali in Fl. W. Pak. 100 : 285. 1977.

Hairy herbs. Terminal leaflets sessile. Heads globose, red or purple.

*Fl. & Fr.* : April August.

Kinnaur (BSD), Kulu (BSD).

North Western Himalaya.

**Trifolium repens** L. Sp. Pl. 767. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 86. 1876 ; Collett, Fl. Siml. 116. 1902 ; Ali in Fl. W. Pak. 100 : 288. 1977.

Herbs. Leaves trifoliate, obovate, distinctly toothed. Flower white or with a pink tinge. Pod minute, linear.

*Fl. & Fr.* : May September.

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

Temperate and alpine regions of Himalaya.

**Trigonella corniculata** (L.) L. Syst. Nat. ed. 10. 2 : 1180. 1759 ; Baker in Hook. f. Fl. Brit. India 2 : 88. 1876 ; Collett, Fl. Siml. 118. 1902 ; Ali in Fl. W. Pak. 100 : 296. 1977. *Trifolium corniculatum* L. Sp. Pl. 766. 1753.

Herbs with glabrous, erect stem. Pods glabrous, deflexed, slightly curved.

*Fl. & Fr.* : June September.

Simla (DD).

Himalaya, Kashmir to Sikkim.

**Trigonella emodii** Benth. in Royle, Ill. Bot. Himal. Mount. 197. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 88. 1876 ; Collett, Fl. Siml. 118. 1902 ; Nair, Fl. Bash. Himal. 90. 1977 ; Ali in Fl. W. Pak. 100 : 298. 1977.

Herbs. Flowers yellow. Pods straight, glabrous.

*Fl. & Fr.* : May September.

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

North Western and Central Himalaya.

**Trigonella fimbriata** Royle ex Benth. in Royle, Ill. Bot. Himal. Mount. 197. 1835 ; Ali in Fl. W. Pak. 100 : 298. 1977. *T. emodi* var. *fimbriata* Sirj. in Publ. Fac. Sci. Univ. Masaryk 102 : 21. 1928.

Erect herbs. Flowers yellow. Pods with prominent veins.

*Fl. & Fr.* : May July.

Kinnaur (K). Holotype.

North - Western and Central Himalaya.

**Trigonella gracilis** Benth. in Royle, Ill. Bot. Himal. Mount. 197. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 88. 1876 ; Collett, Fl. Siml. 118. 1902 ; Nair, Fl. Bash. Himal. 90. 1977 ; Ali in Fl. W. Pak. 100 : 297. 1977.

Herbs. Stem very slender, trailing. Pods marked with distinct, close transverse veins.

*Fl. & Fr.* : June September.

Simla (DD).

Western Himalaya and Nepal.

**Trigonella incisa** Benth. ex Royle, Ill. Bot. Himal. Mount. 197. 1835 ; Jacq. Voy. Bot. t. 42. 1844 ; Kitamura, Fl. Afghan. 243, 1960 ; Nair, Fl. Bash. Himal. 90. 1977.

Weak herbs. Flowers yellow. Pods net veined.

*Fl. & Fr.* : May July.

Simla (BSD).

Western Himalaya.

**Trigonella monantha** C. A. Meyer, Verz. Pfl. Conc. 137. 1831 ssp. **incisa** (Benth.) Ali in Fl. W. Pak. 100 : 294. 1977. *T. incisa* Benth. in Royle, Ill. Bot. Himal. Mount. 197. 1835. *T. polycerata* auct. (non L. 1753) ; Baker in Hook. f. Fl. Brit. India 2 : 87. 1876 ; Collett, Fl. Siml. 117. 1902.

Herbs. Leaves trifoliolate. Flowers 2-4, umbellate. Pod long, falcate, wrinkled transversely.

*Fl. & Fr.* : May August.

Kinnaur (BSD, DD).

Northern India.

**Trigonella pubescens** Edgew. ex Baker in Hook. f. Fl. Brit. India 2 : 88. 1876 ; Collett, Fl. Siml. 118. 1902 ; Nair, Fl. Bash. Himal. 90. 1977 ; Ali in Fl. W. Pak. 100 : 297. 1977.

Diffuse herbs. Umbel stalked not tipped with awn. Pods hairy, flat, straight, transversely veined.

*Fl. & Fr.* : May October.

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

Western Himalaya and Nepal.

**Uroria lagopus** DC. in Ann. Sci. Nat. Paris Ser. 1. 4 : 100. 1825 ; Baker in Hook. f. Fl. Brit. India 2 : 156. 1876 *p.p.* ; Babu, Herb. Fl. Dehra Dun 169. 1977.

Large shrubs. Leaves trifoliolate. Flowers purple. Pods hairy, jointed.

*Fl. & Fr.* : June September.

Chamba (DD).

Himalaya.

**Uraria neglecta** Prain in Journ. Asiat. Soc. Beng. 66 : 382. 1897 ; Collett, Fl. Siml. 130. 1902 ; Babu, Herb. Fl. Dehra Dun 169. 1977 ; Nair, Fl. Bash. Himal. 90. 1977. *U. lagopus* Royle, 111. Bot. Himal. Mount. 201. 1835 (non DC. 1825). *U. lagopus* Baker in Hook. f. Fl. Brit. India 2 : 156. 1876. *p. p.* (non DC. 1825).

Perennial herbs, often woody at base. Racemes brown hairy. Pods 5-8-jointed, glabrous.

*Fl. & Fr.* : August September.

Chamba (DD).

Himalaya.

**Vicia bakeri** Ali in Bot. Notiser 120 : 52. 1967 et Fl. W. Pak. 100 : 273. 1977. *V. pallida* auct (non Turcz. 1842) Baker in Hook. f. Fl. Brit. India 2 : 178. 1876 ; Nair, Fl. Bash. Himal. 91. 1977.

Climbing herbs. Leaves ending into tendril. Flowers pale-lilac. Pods flat, glabrous, oblique.

*Fl. & Fr.* : July September.

Lahul and Spiti (DD).

Western Himalaya temperate regions and Nepal.

**Vicia faba** L. Sp. Pl. 738. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 179. 1876 ; Collett, Fl. Siml. 135. 1902 ; Ali in Bot. Notiser. 120 : 56. 1967 et Fl. W. Pak. 100 : 274. 1977 ; Nair, Fl. Bash. Himal. 91. 1977.

Cultivated - edible.

*Fl. & Fr.* : July September.

Kinnaur (DD).

Common in gardens throughout North-Western India.

**Vicia hirsuta** (L.) S. F. Gray, Nat. Arrange. Brit. Pl. 2 : 614. 1821 ; Baker in Hook. f. Fl. Brit. India 2 : 177. 1876 ; Collett, Fl. Siml. 135. 1902 ; Nair, Fl. Bash. Himal. 91. 1977 ; Ali in Fl. W. Pak. 100 : 271. 1977. *Ervum hirsutum*. L. Sp. Pl. 738. 1753.

Annual herbs. Flowers white, tinged with blue. Pods hairy, 2-seeded.

*Fl. & Fr.* : May August.

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

North-Western and Central Himalaya.

**Vicia pallida** Turcz. in Bull. Soc. Nat. Mosc. 15 : 789. 1842 ; Baker in Hook. f. Fl. Brit. India 2 : 178. 1876 ; Nair, Fl. Bash. Himal. 91. 1977.

Tall climbers. Flowers pink or purple. Pods long, flat, glabrous, oblique.

*Fl. & Fr.* : June October.

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

Western Himalaya temperate regions.

**Vicia rigidula** Royle, Ill. Bot. Himal. Mount. 200. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 178. 1876 ; Collett, Fl. Siml. 135. 1902 ; Nair, Fl. Bash. Himal. 91. 1977 ; Ali in Fl. W. Pak. 100 : 273. 1977.

Subglabrous climbers. Veins on leaflets raised. Flowers large, reddish or golden-yellow. Pods linear, glabrous.

*Fl. & Fr.* : May September.

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

Western Himalaya temperate regions.

**Vicia sativa** L. Sp. Pl. 736. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 178. 1876 (excl. var.) ; Collett, Fl. Siml. 135. 1902 ; Nair, Fl. Bash. Himal. 91. 1977 ; Ali in Fl. W. Pak. 100 : 269. 1977.

Herbs. Flowers red-blue. Pods glabrous.

*Fl. & Fr.* : April June.

Kinnaur (BSD), Una (BSD).

Throughout India.

**Vicia sepium** L. Sp. Pl. 737. 1753 ; Baker in Hook. f. Fl. Brit. India 2 : 179. 1876 ; Nair, Fl. Bash. Himal. 92. 1977 ; Ali in W. Pak. : 269. 1977.

Suberect, perennial herbs. Flowers reddish.



*Fl. & Fr.* : June August.

Simla (DD).

Western Himalaya.

**Vicia tenera** Grah. ex Benth. in Royal, Ill. Bot. Himal. Mount. 200. 1835 ; Baker in Hook. f. Fl. Brit. India 2 : 177. 1876 ; Collett, Fl. Siml. 135. 1902.

Slender, straggling, subglabrous climbers. Flowers pale-pink. Pods thin, oblique, glabrous.

*Fl. & Fr.* : May July.

Kulu (DD).

Western Himalaya.

**Vicia tenuifolia** Roth, Tent. Fl. Germ. 1 : 309. 1788 ; Baker in Hook. f. Fl. Brit. India 2 : 177. 1876 ; Ali in Fl. W. Pak. 100 : 272. 1977.

Glabrous climbers. Leaflets membranous. Flowers deep blue. Pods long with a long stalk.

*Fl. & Fr.* : May - August.

Chamba (BSD), Simla (DD).

North-Western Himalaya temperate regions.

**Vicia tetrasperma** (L.) Schreber, Spicil. Fl. Lips. 26. 1771 ; Baker in Hook. f. Fl. Brit. India 2 : 177. 1876 ; Collett, Fl. Siml. 135. 1902 ; Ali in Fl. W. Pak. 100 : 272. 1977. *Ervum tetrasperma* L. Sp. Pl. 738. 1753.

Annual, glabrous herbs. Flowers pale-blue. Pods oblong, glabrous.

*Fl. & Fr.* : April May.

Simla (DD).

North-Western Himalaya.

**Vigna aconitifolia** (Jacq.) Marechal in Bull. Jard. Bot. Nat. Belge. 39 : 160. 1969 ; Verdcourt in Kew Bull. 23 : 464. 1969 ; Ali in Fl. W. Pak. 100 : 244. 1977. *Phaseolus aconitifolius* Jacq. Obs. 3 : t. 52. 1766 ; Baker in Hook. f. Fl. Brit. India 2 : 202. 1876 ; Nair, Fl. Bash. Himal. 86. 1977.

Weak herbs often trailing. Leaflets deeply 3-lobed. Racemes capitate. Flowers yellow. Pods pubescent, glabrous on maturity.

Cultivated Lima bean.

**Vigna mungo** (L.) Hepper in Kew. Bull. 11 : 128. 1956 ; Ali in Fl. W. Pak. 100 : 250. 1977. *Phaseolus mungo* L. Mant. Pl. 1 : 101. 1767 ; Baker in Hook. f. Fl. Brit. India 2 : 203. 1876. *p. p. P. roxburghii* Wt. & Arn. Prodr. Fl. Pen. Ind. Or. 246. 1834. *P. radiatus* Roxb. Fl. Ind. 3 : 296. 1832 (non L. 1753).

Widely cultivated pulse.

**Vigna umbellata** (Thunb.) Ohwi & Ohashi in J. Jap. Bot. 44 : 31. 1969 ; Verdcourt in Kew Bull. 24 : 560. 1970 ; Ali in Fl. W. Pak. 100 : 248. 1977. *Dolichos umbellatus* Thunb. in Trans. Linn. Soc. 2 : 339. 1794. *Phaseolus calcaratus* Roxb. Fl. Ind. ed. Carey 3 : 289. 1832 ; Baker in Hook. f. Fl. Brit. India 2 : 203. 1876 ; Collett, Fl. Siml. 140. 1902 ; Nair, Fl. Bash. Himal. 86. 1977.

Suberect herbs, with hairy trailing or twining stem. Flowers pale-yellow. Pods cylindrical, curved, flat.

*Fl. & Fr.* : August September.

Kangra (DD).

Throughout India wild and cultivated.

**Vigna unguiculata** (L.) Walp. Rep. 1 : 779. 1842. *Dolichos unguiculatus* L. Sp. Pl. 725. 1753. *Dolichos biflorus* L. Sp. Pl. 727. 1753.

Widely cultivated.

**Vigna unguiculata** (L.) Walp. Repert. 1 : 779. 1842 ssp. *cylindrica* (L.) Verdcourt in Kew Bull. 24 : 544. 1970. et Kew Bull. 31 : 836. 1976 ; Ali in Fl. W. Pak. 100 : 247. 1977. *Phaseolus cylindricus* L. in Stickmann, Herb. Amb. 23. 1754 & Amoen. Acad. 4 : 132. 1759. *Dolichos cajang* Burm. f. Fl. Ind. 161. 1768. *Vigna cajang* (Burm. f.) Walp. in Linnæa 13 : 533. 1839. *nom. illegit.* ; Baker in Hook. f. Fl. Brit. India 2 : 205. 1876.

Twining or bushy herbs. Pods glabrous, pale at maturity.

Kangra (LWG).

Widely cultivated.

**Vigna vexillata** (L.) A. Rich. Hist. Fisc. Polit. Nat. Cuba 11 : 191. 1845 ; Baker in Hook. f. Fl. Brit. India 2 : 206. 1876 ; Collett, Fl. Siml. 141. 1902 ; Ali in Fl. W. Pak. 100 : 246. 1977. *Phaseolus vexillatus* L. Sp. Pl. 724. 1753.

Roughly hairy climbers. Flowers pink-red turning purple. Pods hairy.

*Fl. & Fr.* : August - September.

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

Throughout India.

**Zornia gibbosa** Span. in *Linnaea* 15 : 192. 1841 ; Ali in *Fl. W. Pak.* 100 : 356. 1977. *Zornia graminea* Span. in *Linnaea* 15 : 192. 1841.

Pubescent herbs. Flowers nearly sessile, yellow. Pods minutely prickly.

*Fl. & Fr.* : July - September.

Kinnaur (BSD).

Northern India and Himalaya.

## ROSACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Agrimonia pilosa** Ledeb. *Ind. Sem. Horti. Dorpat. Suppl.* 1. 1823. var. **nepalensis** (D. Don) Nakai in *Tokyo Bot. Mag.* 47 : 247. 1933 ; Nair, *Fl. Bash. Himal.* 92. 1977. *A. nepalensis* D. Don, *Prodr. Fl. Nep.* 229. 1825. *A. eupatorium* sensu Hook. f. *Fl. Brit. India* 2 : 361. 1878 (non L.) ; Collett, *Fl. Siml.* 167. 1902. *A. pilosa* sensu Hook. f. *Fl. Brit. India* 2 : 361. 1878 (non L.)

Hairy, perennial herb. Flowers yellow.

*Fl. & Fr.* : June - August.

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

Himalaya - Kashmir to Bhutan.

**Amygdalus communis** L. *Sp. Pl.* 473. 1753.

*Fl. & Fr.* : May - August.

Simla (BSIP).

Cultivated in cooler parts of India.

**Aruncus dioicus** (Walter) Fernald in *Rhodora* 41 : 423. 1939. *Actaea dioica* Walter, Fl. Carol. 152. 1788. *Spiraea aruncus* L. Sp. Pl. ed 490. 1753 ; Hook. f. Fl. Brit. India 2 : 323. 1878 ; Collett, Fl. Siml. 157. 1902.

Slender herb. Flowers dense, white.

*Fl. & Fr.* : June - August.

Kinnaur (DD), Simla (DD).

Western and Central Himalaya.

**Cotoneaster acuminatus** Lindl. in Trans. Linn. Soc. 13 : 101. t. 9 1821 ; Hook. f. Fl. Brit. India 2 : 385. 1878 ; Collett, Fl. Siml. 173. 1902 ; Nair, Fl. Bash. Himal. 347. 1977.

Deciduous erect shrub. Leaves hairy above. Flowers white pink. Fruit scarlet.

*Fl. & Fr.* : June October.

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

Temperate Himalaya.

**Cotoneaster affinis** Lindl. in Trans. Linn. Soc. 13 : 101. 1821 ; Nair, Fl. Bash. Himal. 93. 1977. *C. bacillaris* sensu Collett, Fl. Siml. 172. f. 48. 1902 (non Wall. ex Lindl.). *C. bacillaris* Wall. ex. Lindl. var. *affinis* Hook. f. Fl. Brit. India 2 : 384. 1878.

Bush or small tree. Cymes many flowered, puberulus. Flowers white. Fruit dark brown or black.

*Fl. & Fr.* : May October.

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

Temperate Himalaya.

**Cotoneaster aitchisonii** C. K. Schneid. Ill. Handb. Laubholz. 1 : 749. 1906 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 348. 1972 ; Nair, Fl. Bash. Himal. 93. 1977.

Pubescent shrub. Flowers white.

*Fl. & Fr.* : April July.

Chamba (DD), Kinnaur (DD), Kulu (DD), Lahul and Spiti (DD).  
Western Himalaya.

**Cotoneaster bacillaris** Wall. ex Lindl. Bot. Reg. 15 : 1229. 1829 ;  
Hook. f. Fl. Brit. India 2 : 384. 1878. *C. affinis* Lindl. var. *bacillaris*  
(Wall. ex Lindl.) C. K. Schneid. Ill. Handb. Laubholz 1 : 757. 1906 ;  
Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 347. 1972.

Bushy tree. Leaves wooly or glabrescent. Cymes many flowered.  
Fruit dark brown, globose.

*Fl. & Fr.* : May - June.

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

Temperate Himalaya.

**Cotoneaster brandisii** Klotz. in Wiss. Zeitschr. Mart. Luth. Univ.  
Halle, Math. Nat. 15 : 537. 1966.

Shrub hanging from rocks. Fruits red.

*Fl. & Fr.* : June August.

Lacca glacier, H. P. (BSD).

Western Himalaya.

**Cotoneaster buxifolia** Wall. ex Lindl. Bot. Reg. 15 subt. 1229. 1829 ;  
Hook. f. Fl. Brit. India 2 : 387. 1878.

Bushy shrub. Cymes 2 - 6 flowered. Fruits globose, scarlet.

*Fl. & Fr.* : April July.

Mandi (LWG), Simla (LWG).

Western Himalaya.

**Cotoneaster cashmirensis** Klotz. in Wiss. Zeitschr. Mart. Luth.  
Univ. Halle, Math. Nat. 12 : 778. 1963.

*Fl. & Fr.* : May August.

Shrub. Flowers pinkish white.

Kulu (DD).

Western Himalaya.

**Cotoneaster duthieanus** (C. K. Schneid.) Klotz. in Bull. Bot. Surv. India 5 : 211. 1964. *Cotoneaster disticha* var. *duthieana* Schneid. Ill. Handb. Laubh. 1 : 745. 1906.

Shrub. Leaves membranaceous, glabrous above, pubescent beneath. Fruits sub-globose.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD).

Western Himalaya.

**Cotoneaster falconeri** Klotz. Wissen. Zeit. Martin. Luther Univ. Halle, Math. Nat. 15 : 535. 1966 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 348. 1972.

Shrub.

*Fl. & Fr.* : June - August.

Lahul and Spiti (BSD, DD).

Western Himalaya.

**Cotoneaster hissarica** Pojark Not. Syst. Leningrad 16 : 126. 1954 ; H. Reidly in Rech. Fl. Iran. 66 : 23. 1969. *C. racemosa* (Desf.) Booth ex Bosse var. *hissarica* (Pajak) Kitamura, Fl. Afgha. 173. 1960.

*Fl. & Fr.* : May August.

Chamba (DD), Kinnaur (DD).

Western Himalaya.

**Cotoneaster humilis** Dunn in Kew Bull. 1924 : 384. 1924 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 348. 1972.

*Fl. & Fr.* : May August.

Chamba (DD).

Western Himalaya.

**Cotoneaster integrifolius** (Roxb.) Klotz. in Wiss. Zeitschr. Mart. Luth. Univ. Halle, Math. Nat. 12 : 779. 1963. *Crataegus integrifolia* Roxb. Fl. Ind. 2 : 509. 1832. *Cotoneaster thymifolius* Baker in Saunders Rcfug. Bot. 1 : t. 50. 1869 ; Hook. f. Fl. Brit. India 2 : 387. 1878.

Prostrate branched shrub. Flowers solitary.

*Fl. & Fr.* : May August.

Kulu (BSD, DD).

Himalaya Himachal Pradesh to Bhutan.

**Cotoneaster integerrima** Medik. *Gesch. Bot.* 85. 1783 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 349. 1972. *C. vulgaris* sensu Hook. f. *Fl. Brit. India* 2 : 385. 1878 *p. p.*

Slender, erect deciduous shrub. Cyme few flowered.

*Fl. & Fr.* : June August.

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

Western Himalaya.

**Cotoneaster meuselli** Klotz. in *Wiss. Zeitschr Mart. Luth. Univ. Halle, Math. Nat.* 12 : 777. 1963.

Shrub. Flowers pink white

*Fl. & Fr.* : June September.

Simla (DD).

Western Himalaya.

**Cotoneaster microphyllus** Wall. ex Lindl. in *Bot. Reg.* 13 : t. 1114. 1827 ; Hook. f. *Fl. Brit. India* 2 : 387. 1878 ; Collett, *Fl. Siml.* 173. 1902 ; Stewart, *Ann. Cat. Vas. Pl. W. Pak. & Kash.* 349. 1972 ; Nair, *Fl. Bash. Himal.* 93. 1977.

Procumbent, dense shrub. Flowers white. Fruits red.

*Fl. & Fr.* : June - October.

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

Temperate Himalaya, Kashmir to Bhutan.

**Cotoneaster nummularia** Fisch. & C. A. Mey. *Ind. Sem. Horti. Petrop.* 2 : 31. 1835 ; Hook. f. *Fl. Brit. India* 2 : 386. 1878 ; H. Reidl in *Rech. Fl. Iran.* 66 : 20. 1969. *C. racemiflora* (Desf.) C. Koch. var. *nummularia* (Fisch. & C. A. Mey.) Dippel, *Handb. Laubh.* 3 : 415. 1893.

Straggling or prostrate undershrub or shrub. Cymes wooly, 2 5 flowered. Fruits obovoid globose, black.

*Fl. & Fr.* : May July.

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

Western Himalaya.

**Cotonaester obtusus** Wall. ex Lindl. in Bot. Reg. Sub. tab. 1229. 1827; Nair, Fl. Bash. Himal. 93. 1977. *C. baccillaris* Hook. f. Fl. Brit. India 2 : 384. 1878 *p. p.* (non Wall. ex Lindl.)

Deciduous glabrous shrub.

*Fl. & Fr.* : April September.

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

Temperate Himalaya.

**Cotoneaster obovata** Wall. ex Dunn. in Kew Bull. 1921 : 119. 1921; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 350. 1972.

Large shrub. Fruits purple, hairy.

*Fl. & Fr.* : June September.

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

Western Himalaya.

**Cotoneaster parkeri** Klotz. in Wiss. Zeitschr. Mart. Luth. Univ. Halle, Math. Nat. 15. 850. 1966.

*Fl. & Fr.* : May August.

Kinnaur (DD).

Western Himalaya.

**Cotoneaster prostratus** Baker in Saunders, Refug. Bot. 1. t. 53. 1869; Nair, Fl. Bash. Himal. 93. 1977.

Shrub adpressed to the rocks. Fruits red.

*Fl. & Fr.* : June September.

Kinnaur (BSD).

Himalaya.

**Cotoneaster pruinosa** Klotz. Wissen. Zeit. Martin Luth. Univ. Halle, Math. Nat. 15 : 533. 1966; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 350. 1972.

Shrub. Fruits dirty purple.

*Fl. & Fr.* : April August.

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

Western Himalaya.



**Cotoneaster rosea** Edgew. in Trans. Linn. Soc. 20 : 46. 1846 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 350. 1972 ; Nair, Fl. Bash. Himal. 94. 1977. *C. multiflora* Hook. f. Fl. Brit. India 2 : 386. 1878 (non Bunge) *p. p.*

Erect, slender bush. Cymes 3 - 10 - flowered.

*Fl. & Fr.* : May - October.

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

North - Western Himalaya.

**Cotoneaster rotundifolius** Wall. ex Lindl. Bot. Reg. 15 : Sub. t. 1229. 1829 ; Hook. f. Fl. Brit. India 2 : 386. 1878.

Rigid shrub. Flower solitary, subsessile. Fruit scarlet.

*Fl. & Fr.* : May - August.

Kinnaur (DD).

Himalaya.

**Cotoneaster stracheyi** Klotz. in Wiss. Zeitsch. Mart. Luth. Univ. Halle, Math. Nat. 15 : 854. 1966.

Simla (DD).

Western Himalaya.

**Crataegus songarica** C. Koch. in Verh. Beford. Gartn. Preuss, n. s. 1 : 287. 1853 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 351. 1972. *C. oxycantha* auct (non L. 1753) Hook. f. Fl. Brit. India 2 : 383. 1878 ; Nair, Fl. Bash. Himal. 94. 1977.

Small tree, Flowers white, odorous. Fruits scarlet.

*Fl. & Fr.* : May - September.

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

Western temperate Himalaya.

**Cydonia oblonga** Mill. Gard. Dict. ed. 8. No. 1. 1768 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 351. 1972. *Pyrus cydonia* L. Sp. Pl. 480. 1753. *Cydonia vulgaris* Pers. Syn. Pl. 2 : (in corr. 40) 658. 1807 ; Hook. f. Fl. Brit. India 2 : 369. 1878 ; Nair, Fl. Bash. Himal. 94. 1977.

Large, deciduous shrub. Flowers pinkish - white.

*Fl. & Fr.* : May August.

Kinnaur (DD).

Cultivated in North - Western India.

**Duchesnea indica** (Andrews) Focke in Engl. & Prantle, Pflanzenfam. 3 : 33. 1888 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 351. 1972 ; Nair, Fl. Bash. Himal. 94. 1977. *Fragaria indica* Andrews in Bot. Rep. 7 : t. 479. 1807 ; Hook. f. Fl. Brit. India 2 : 343. 1878 ; Collett, Fl. Siml. 163. 1902.

Silky hairy herb. Flowers yellow. Fruits bright red, spongy.

*Fl. & Fr.* : April June.

Kulu (RRL, BSIP).

Temperate and Subtropical Himalaya.

**Filipendula vestita** (Wall. ex G. Don) Maxim. Acta Horti Petrop. 6 : 248. 1879 ; Nair, Fl. Bash. Himal. 94. 1977. *Spiraea vestita* Wall. ex G. Don, Gen. Syst. 2 : 521. 1832 ; Hook. f. Fl. Brit. India 2 : 323. 1878 ; Collett, Fl. Siml. 157. 1902.

Robust herb. Leaves with thick white tomentum beneath. Flowers white.

*Fl. & Fr.* : June October.

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

Temperate Himalaya.

**Fragaria vesca** L. Sp. Pl. 494. 1753 ; Hook. f. Fl. Brit. India 2 : 344. 1878 ; Collett, Fl. Siml. 163. 1902 ; Nair, Fl. Bash. Himal. 95. 1977.

Herb with creeping stolons. Leaves long petioled. Flowers white.

*Fl. & Fr.* : May October.

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

Temperate Himalaya.

**Geum elatum** Wall. ex G. Don, Gen. Syst. 2 : 526. 1832 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 352. 1972. *G. elatum* Wall. Cat. 711. 1828 (nom. nud.) ; Hook. f. Fl. Brit. India 2 : 343. 1878. *Sieversia elata* Royle, Ill. Bot. Himal. Mount. 207. t. 39. 1835.

Hairy herb. Flowers erect, yellow. Fruits hispid.

*Fl. & Fr.* : May September.

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

Sub-alpine, alpine Himalaya.

**Geum roylei** Bolle in Fedd. Repert. Beih. 72 : 66. 1933.

*Geum urbanum* (non L.) Hook. f. Fl. Brit. India 2 : 342. 1878 ; Collett, Fl. Siml. 162. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 352. 1972 ; Nair, Fl. Bash. Himal. 95. 1977.

Erect, softly hairy herb. Flowers yellow.

*Fl. & Fr.* : May September.

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

Western temperate Himalaya.

**Kerria japonica** (L) DC. in Trans. Linn. Soc. Bot. London 12 : 157. 1817 ; Parker, For. Fl. Punj. ed. 3. 230. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 352. 1972. *Rubus japonicus* L. Mant. Pl. 2 : 245. 1767.

Shrub. Leaves ovate - lanceolate, serrate. Flowers yellow, double.

*Fl. & Fr.* : May September.

Simla (DD).

Cultivated.

**Malus baccata** (L.) Borkh. Theor. Prakt. Handb. Forstbot. 2 : 1280. 1803. *Pyrus baccata* L. Mant. Pl. 75. 1767 ; Hook. f. Fl. Brit. India 2 : 373. 1878 ; Collett, Fl. Siml. 169. 1902 ; Nair, Fl. Bash. Himal. 99. 1977.

Small tree.

*Fl. & Fr.* : May September.

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

Temperate Himalaya.

**Malus pumila** (non L.) Mill. Gard. Dict. ed. 8. n. 3. 1768 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 352. 1972. *Pyrus malus* Hook. f. (non L.) Fl. Brit. India 2 : 373. 1878 ; Nair, Fl. Bash. Himal. 99. 1977.

Tree, cultivated.

*Fl. & Fr.* : May - October.

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

Cultivated in North Western India.

**Potentilla anserina** L. Sp. Pl. 495. 1753 ; Hook. f. Fl. Brit. India 2 : 350. 1878 ; Hara et Ohashi in Fl. E. Himal. 2 : 52. 1971.

Tufted herb. Leaves silky below. Racemes up *Ca* 30 cm or more long. Flowers yellow.

*Fl. & Fr.* : June - August.

Lahul and Spiti (BSD, DD).

Western Tibet and Himachal Pradesh.

**Potentilla arbuscula** D. Don, Prodr. Fl. Nepal. 256. 1825 ; Fletcher in Notes Roy. Bot. Gard. Edinb. 20 : 207. 1950 ; Nair, Fl. Bash. Himal. 95. 1977. *P. fruticosa* Hook. f. Fl. Brit. India 2 : 247. 1878 (non L.) ; Collett, Fl. Siml. 165. 1902.

Low, erect, shrubs. Flowers bright yellow. Achenes hairy.

*Fl. & Fr.* : July - September.

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

Temperate and subalpine Himalaya from Kashmir to Sikkim.

**Potentilla arbuscula** D. Don var. **pumila** (Hook. f.) Hand. Mazz. in Symb. Sin. 7 : 508. 1933 ; Fletcher in Notes Roy. Bot. Gard. Edenb. 20 : 208. 1950. *P. fruticosa* L. var. *pumila* Hook. f. Fl. Brit. India 2 : 348. 1878.

Dwarf cushion forming shrubs. Leaflets silky. Flowers yellow.

*Fl. & Fr.* : June August.

Lahul and Spiti (DD).

Temperate and sub alpine Himalaya.

***Potentilla argyrophylla*** Wall. ex Lehm. Pugillus 3 : 36. 1831 ; Hook. f. Fl. Brit. India 2 : 356. 1878 *p. p.* ; Collett, Fl. Siml. 166. 1902 ; Nair, Fl. Bash. Himal. 96. 1977.

Tall herb, clothed with white silky hairs. Flowers large, yellow.

*Fl. & Fr.* : June October.

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

Western and Central Himalaya.

***Potentilla atrosanguinea*** Lodd. Bot. Cab. 8. t. 786. 1824 ; Nair, Fl. Bash. Himal. 96. 1977. *P. argyrophylla* Wall. ex Lehm. var. *atrosanguinea* Hook. f. Fl. Brit. India 2 : 357. 1878.

Tall herb clothed with white silky hairs. Flowers large, red or purple.

*Fl. & Fr.* : July August.

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

Central and Western Himalaya.

***Potentilla atrosanguinea*** Lodd. var. *cataclines* Wolf. in Bot. Central Bl. 16 : heft. 71 : 230. 1908 ; Nair, Fl. Bash. Himal. 96. 1977. *P. argyrophylla* Wall. ex Lehm. var. *leucochora* Hook. f. Fl. Brit. India 2 : 357. 1878. *p. p.*

Small herb covered with white silky hairs. Flowers yellow or red.

*Fl. & Fr.* : May August.

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

Western and Central Himalaya.

**Potentilla biflora** Willd. ex Schlecht in Mag. Ges. Naturf. Berlin 7 : 197 1816 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 354. 1972. *P. inglisii* Royle, Ill. Bot. Himal. Mount. 207. t. 41. 1835. *P. fruticosa* var. *inglisii* (Royle) Hook. f. Fl. Brit. India 2 : 348. 1878.

Dwarf, densely tufted herb.

*Fl. & Fr.* : July August.

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

Western Himalaya.

**Potentilla bifurca** L. Sp. Pl. 497. 1753 ; Hook. f. Fl. Brit. India 2 : 353. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 354. 1972.

Small, slender herb, clothed with silky hairs.

Lahul and Spiti (BSIP, DD, RRL).

Western Himalaya.

**Potentilla cuneata** Wall. ex Lehm. Pugill. 3 : 34. 1831. *Potentilla ambigua* Camb. in Jacquem. Voy. Bot. 4 : 51. t. 62. 1844 ; Hook. f. Fl. Brit. India 2 : 348. 1878 ; Nair, Fl. Bash. Himal. 95. 1977.

Tufted, silky or glabrous herb. Flowers yellow.

*Fl. & Fr.* : June September.

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

Temperate and alpine Himalaya, Kashmir to Sikkim.

**Potentilla curviseta** Hook. f. Fl. Brit. India 2 : 358. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 355. 1972.

Rigid, thinly silky herb.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD).

Western Himalaya.

**Potentilla desertorum** Bunge in Ledeb. Fl. Alt. 2 : 257. 1830 ; Hook. f. Fl. Brit. India 2 : 355. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 355. 1972.

Silky or glabrous herbs.

*Fl. & Fr* : May August

Simla (BSIP).

Western Himalaya.

**Potentilla kleiniana** Wight, Ill. Ind. Pl. t. 85. 1831 ; Hook. f. Fl. Brit. India 2 : 359. 1878.

Sparsely silkily hairy herbs. Leaves digitately 3-5 foliate. Flowers yellow. Achenes minute, deeply wrinkled.

*Fl. & Fr.* : May August.

Simla (BSIP).

Himalaya, Kashmir to Bhutan.

**Potentilla leschenaultiana** Ser. in DC. Prodr. 2 : 584. 1825 ; Hook. f. Fl. Brit. India 2 : 350. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 357. 1972.

Robust, villous herb with soft, long spreading hairs. Flowers yellow.

*Fl. & Fr.* : June August.

Simla (DD).

Temperate Himalaya.

**Potentilla monanthes** Wall. ex Lehm. Pugillus 3 : 33. 1831 ; Hook. f. Fl. Brit. India 2 : 358. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 357. 1972.

Large, spreading, tufted herb. Flowers yellow.

*Fl. & Fr.* : June - August.

Lahul and Spiti (DD).

Alpine Himalaya.

**Potentilla multifida** L. Sp. Pl. 496. 1753 ; Hook. f. Fl. Brit. India 2 : 353. 1878 ; Nair, Fl. Bash. Himal. 97. 1977.

Leaves 3 5 foliate, leaflets pinnatifid. Flowers yellow.

*Fl. & Fr.* : June September.

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

North Western Himalaya.

**Potentilla nepalensis** Hook. Exot. Fl. 2 : t. 88. 1824 ; Hook. f. Fl. Brit. India 2 : 355. 1878 ; Collett, Fl. Siml. 165. 1902 ; Nair, Fl. Bash. Himal. 97. 1977.

Erect herb.

*Fl. & Fr.* : June - October.

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

Western temperate Himalaya. (Cultivated in the gardens.)

**Potentilla recta** L. Sp. Pl. 497. 1753. *P. pilosa* Willd. Sp. Pl. 2 : 1100. 1800.

*Fl. & Fr.* : June - August.

Chamba (BSD).

Himalaya.

**Potentilla sericea** L. Sp. Pl. 495. 1753 ; Hook. f. Fl. Brit. India 2 : 354. 1878.

White, densely silky, tomentose herb. Flowers yellow.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD, DD).

Western alpine Himalaya.

**Potentilla sundaica** (Bl.) O. Ktze. Rev. Gen. Pl. 1 : 219. 1890 ; Kalkman in Blumea 16 : 343. 1968. *Fragaria sundaica* Bl. Bijdr. Fl. Ned. Ind. 17 : 1106. 1826 27.

*Fl. & Fr.* : May - August.

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

Western Himalaya.



**Potentilla supina** L. Sp. Pl. 497. 1753 ; Hook. f. Fl. Brit. India 2 : 359. 1878 ; Collett, Fl. Siml. 167. 1902 ; Nair, Fl. Bash. Himal. 98. 1977.

Prostrate or suberect, dichotomously branched herb. Flowers yellow.

*Fl. & Fr.* : July September.

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

Throughout the warmer parts of India.

**Potentilla thomsonii** Han. Mazz. in Acta. Hort. Gotobarg. 13 : 315. 1939 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 360. 1972.

Herbs with softly white - tomentose petiole and leaves. Flowers yellow.

*Fl. & Fr.* : June September.

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

Western Himalaya.

**Prinsepia utilis** Royle, Ill. Bot. Himal. Mount. 206. t. 38. f. 1. 1834 ; Hook. f. Fl. Brit. India 2 : 323. 1878 ; Collett, Fl. Siml. 156. 1902 ; Nair, Fl. Bash. Himal. 98. 1977.

A shrub with soft pubescence. Flowers white.

*Fl. & Fr.* : June October.

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

Temperate Himalaya.

**Prunus armeniaca** L. Sp. Pl. 474. 1753 ; Hook. f. Fl. Brit. India 2 : 313. 1878 ; Parker, For. Fl. Punj. ed. 3. 204. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 361. 1972 ; Nair, Fl. Bash. Himal. 98. 1977. *Armeniaca vulgaris* Lam. Encycl. Meth. Bot. 1 : 2. 1783.

Deciduous tree. Flowers white. Fruits yellow - red.

*Fl. & Fr.* : May August.

Chamba (DD), Kinnaur (BSD), Kulu (DD), Lahul & Spiti (DD, RR L).

North Western India. Cultivated.

**Prunus avium** L. Fl. Suec. ed. 2 : 165. 1755 ; Hook. f. Fl. Brit. India 2 : 313. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 361. 1972. *Cerasus avium* (L.) Moench, Meth. 672. 1794.

Small tree. Leaves flaccid, drooping. Flowers long pedicelled, fascicled. Fruits sweet or bitter.

*Fl. & Fr.* : May August.

Solon (RRL).

Cultivated in North Western Himalaya.

**Prunus cerasifera** Ehrh. Beity. 4 : 17. 1789 ; Bailey, Stand. Cycl. Hort. 3. 2825. 1929 ; Parker, For. Fl. Punj. ed. 3. 207. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 361. 1972.

Small tree. Leaves small, thin, serrate, glabrous. Flower white or bluish. Fruit small, globose, yellow or red.

*Fl. & Fr.* : March - June.

Simla (BSD).

Cultivated in North Western Himalaya.

**Prunus cerasoides** D. Don, Prodr. Fl. Nepl. 239. 1825. *Prunus puddum* (non Miq. 1865) Roxb. ex Brandis, For. Fl. 194. 1874 ; Hook. f. Fl. Brit. India 2 : 314. 1878 ; Collett, Fl. Siml. 156. 1902.

Arboreous tree with puberulus young shoots. Flowers rose ed or white.

*Fl. & Fr.* : November - May.

Chamba (DD), Kangra (DD), Kinnaur (DD), Lahul & Spiti (BSD), Simla (BSIP).

Temperate Himalaya.

**Prunus cerasus** L. Sp. Pl. 474. 1753 ; Hook. f. Fl. Brit. India 2 : 313 1878 ; Parker, For. Fl. Punj. ed. 3. 206. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 362. 1972. *Cerasus vulgaris* Mill. Gard. Dict. ed. 8. *Cerasus* No. 1. 1768.

Small tree. Leaves erect. Flower white - pink. Fruits red to black.

*Fl. & Fr.* : May August.

Kinnaur (BSD).

North Western Himalaya.

**Prunus cornuta** (Wall. ex Royle) Steud. Nomencl. Bot. ed. 2. 2 : 403. 1841 ; Parker, For. Fl. Punj. ed. 3. 205. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 362. 1972 ; Nair, Fl. Bash. Himal. 98. 1977. *Cerasus cornuta* Wall. ex. Royle, Ill. Bot. Himal. Monut. 207. t. 38. f. 2. 1835. *Prunus padus* Hook. f. Fl. Brit. India 2 : 315. 1878 (non L.) ; Collett, Fl. Siml. 156. 1902.

Tree. Racemes many flowered, Flowers white. Drupe globose, red or nearly black.

*Fl. & Fr.* : April August.

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

Temperate Himalaya.

**Prunus domestica** L. Sp. Pl. 475. 1753 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 362. 1972.

*Fl. & Fr.* : April August.

Kangra (RRL).

Western Himalaya.

**Prunus jacquemontii** Hook. f. Fl. Brit. India 2 : 314. 1878 ; Parker, For. Fl. Punj. ed. 3. 204. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 362. 1972 ; Nair, Fl. Bash. Himal. 99. 1977. *Amygdalus humilis* Edgew. Tran. Linn. Soc. 20 : 44. 1846. (non Bunge. 1835).

Shrub. Flowers pink, appearing before or with the leaves.

*Fl. & Fr.* : April August.

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

Western Himalaya.

**Prunus persica** (L.) Batsch, Beytr. Entw. Pragm. Natur. 1 : 30. 1801 ; Hook. f. Fl. Brit. India 2 : 313. 1878 ; Parker, For. Fl. Punj. ed. 3. 204. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 363. 1972. *Amygdalus persica* L. Sp. Pl. 472. 1753.

Large deciduous or small tree. Flowers Pink. Drupe downy, succulent.

*Fl. & Fr.* : January October.

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

Cultivated in cooler parts of India.

**Prunus prostata** Labill. Icon. Pl. Syr. 1 : 15. 1791 ; Hook. f. Fl. Brit. India 2 : 313. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 363. 1972.

Shrub with hoary branches. Flowers red. Fruit red purple.

*Fl. & Fr.* : April August.

Chamba (DD).

Western temperate Himalaya.

**Pyracantha crenulata** (Roxb.) Roem. Fam. Nat. Reg. Syn. 3 : 220. 1847 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 364. 1972. *Crataegus crenulata* Roxb. Fl. Ind. ed. 2. 2 : 509. 1832 ; Hook. f. Fl. Brit. India 2 : 384. 1878.

Large, woody rigid, spinescent shrub. Flowers white.

*Fl. & Fr.* : August September.

Simla (DD).

Western Himalaya.

**Pyrus communis** L. Sp. Pl. 479. 1753 ; Hook. f. Fl. Brit. India 2 : 374. 1878 ; Nair, Fl. Bash. Himal. 99. 1977.

Tree or shrub. Flowers white.

*Fl. & Fr.* : June - August.

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

Cultivated in North Western Himalaya.

**Pyrus lindleyi** Rehder in Proc. Am. Acad. Arts Sci. 50 : 230. 1915 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 364. 1972.

*Fl. & Fr.* : June September.

Kinnaur (DD).

Western Himalaya.

**Pyrus pashia** Buch Ham. ex D. Don, Prodr. Fl. Nep. 236. 1825 ; Hook. f. Fl. Brit. India 2 : 374. 1878 ; Collett, Fl. Siml. 222. 1902 ; Nair, Fl. Bash. Himal. 100. 1977.

Deciduous tree with wooly young parts.

*Fl. & Fr.* : May August.

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

Temperate Himalaya. Cultivated.

**Rosa alba** L. Sp. Pl. 492. 1753 ; Hook. f. Fl. Brit. India 2 : 364. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 364. 1972.

Flowers large, white pale

*Fl. & Fr.* : June August.

Kangra (DD).

Cultivated.

**Rosa brunonii** Lindl. Ros. Monogr. Pl. 120. t. 14. 1820 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. Kash. 365. 1972. *R. moschata* Hook. f. Fl. Brit. India 2 : 367. 1878 ; Collett, Fl. Siml. 168. 1902 ; Nair, Fl. Bash. Himal. 100. 1977.

Tall climber. Flowers numerous, yellowish white. Fruits dark brown, glabrous.

*Fl. & Fr.* : May October.

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

Temperate Central and Western Himalaya.

**Rosa corymbifera** Borkh. Vers. Forst. Bot. Beschr. 319. 1790 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 365. 1972.

*Fl. & Fr.* : June August.

Chamba (DD).

Western Himalaya.

**Rosa damascena** Mill. Gard. Dict. ed. 8. n. 15. 1768 ; Hook. f. Fl. Brit. India 2 : 364. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 365. 1972.

Common Indian garden rose

*Fl. & Fr.* : May October.

Chamba (DD).

Cultivated.

**Rosa foetida** J. Herrmann, Diss. Bot. Med. Rosa 18. 1762 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 365. 1972.

Cultivated.

*Fl. & Fr.* : July October.

Lahul and Spiti (BSD).

Western Himalaya.

**Rosa lutea** Mill. Gard. Dict. ed. 8. n. 11- 1768.

Undershrubs.

*Fl. & Fr.* : May September.

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

Cultivated.

**Rosa indica** L. Sp. Pl. 492. 1753 ; Hook. f. Fl. Brit. India 2 : 364. 1878. *R. chinensis* Jacq. Obs. Bot. 3 : 7. 1768.

Evergreen, glabrous shrub. Flowers large, on long pedicels, purple - red to rosy - white.

*Fl. & Fr.* : May August.

Kinnaur (DD).

Cultivated.

**Rosa macrophylla** Lindl. Ros. Monogr. 35. t. 6. 1820 ; Hook. f. Fl. Brit. India 2 : 366. 1878 ; Collett, Fl. Siml. 168. 1902 ; Nair, Fl. Bash. Himal. 100. 1977.

Erect bushy shrub. Flowers bright red with very bristly calyx.

*Fl. & Fr.* : May September.

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

Temperate Himalaya.

**Rosa macrophylla** Lindl. var. **hookeriana** Hook. f. Fl. Brit. India 2 : 366. 1878 ; Nair, Fl. Bash. Himal. 100. 1977.

Unarmed bushy shrub. Leaves very pubescent. Flowers pink.

*Fl. & Fr.* April - September.

Chamba (BSD), Kinnaur (BSD).

Temperate Himalaya.

**Rosa multiflora** Thunb. Fl. Jap. 214. 1784 ; Hook. f. Fl. Brit. India 2 : 364. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 366. 1972.

Flowers double, rosy.

*Fl. & Fr.* : May - August.

Kulu (BSIP).

Cultivated.

**Rosa rubiginosa** L. Mant. Pl. 564. 1771 ; Klostersky in Tutin et al. Fl. Europea 2 : 31. 1968.

Bush. Flowers pink - white.

*Fl. & Fr.* : May - September.

Chamba (DD).

Himalaya.

**Rosa sericea** Lindl. Mongr. Ros. 105. t. 12. 1820 ; Hook. f. Fl. Brit. India 2 : 376. 1878 ; Collett, Fl. Siml. 168. 1902 ; Nair, Fl. Bash. Himal. 100. 1977.

Erect to subscandent bush with densely prickly branches. Flowers white or sometimes pink or yellowish.

*Fl. & Fr.* : May - September.

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

Temperate Himalaya.

**Rosa webbiana** Wall. ex Royle, Ill. Bot. Himal. Mount. 208. t. 42. f. 2. 1835 ; Hook. f. Fl. Brit. India 2 : 366. 1878 ; Nair, Fl. Bash. Himal. 101. 1977.

Erect bush. Flowers pink.

*Fl. & Fr.* : June September.

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

Drier inner Himalaya, Kashmir to Kumaon.

**Rubus biflorus** Buch. Ham. ex Sm. in Rees, Cyclop. 30 : 9. 1819 ; Hook. f. Fl. Brit. India 2 : 338. 1878 ; Collett, Fl. Siml. 161. 1902 ; Parker, For. Fl. Punj. ed. 3. 210. 1956.

Rambling shrub. Leaflets 1-4, white tomentose beneath. Flowers white. *Drupelets golden* - yellow, many.

*Fl. & Fr.* : April September.

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

Temperate Himalaya.

**Rubus chambica** Rolfe in Kew Bull. 132. 1920 ; Parker, For. Fl. Punj. ed. 3. 209. 1956.

Shrub. Leaflets 3, elliptic, sessile. Flowers white.

*Fl. & Fr.* : June August.

Chamba (DD).

Himachal Pradesh.

**Rubus ellipticus** Sm. in Rees, Cyclop. 30. n. 16. 1819 ; Hook. f. Fl. Brit. India 2 : 336. 1878 ; Collett, Fl. Siml. 160. 1902 ; Parker, For. Fl. Punj. ed. 3. 209. 1956.

Shrub with decumbent branches, twigs tomentose, rusty brown. Leaflets thick, coriaceous. Flowers white. Fruits golden yellow, stone rugose.

*Fl. & Fr.* : January May.

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

Temperate and subtropical Himalaya.

**Rubus foliolous** D. Don, Prodr. Fl. Nep. 256. 1825 ; Hook. f. Fl. Brit. India 2 : 340. 1878.



Prostrate herbs with villous or densely tomentose branches, petioles, inflorescence. Flowers red.

*Fl. & Fr.* : June September.

Kulu (LWG), Simla (Hara, 1982).

Himalaya.

**Rubus irritans** Focke in *Bibl. Bot.* Heft 72 : 192. 1910 ; Nair, *Fl. Bash. Himal.* 102. 1977. *R. purpureus* Hook. f. *Fl. Brit. India* 2 : 337. 1878 (*p. p.*, non Bunge); Parker, *For. Fl. Punj.* ed. 3. 210. 1956.

Prickly shrub, stem glandular. Leaflets white beneath. Flowers pale pink to white. Fruits orange.

*Fl. & Fr.* : July August.

Lahul and Spiti (BSD).

Western temperate Himalaya.

**Rubus macilentus** Camb. in *Jacq. Voy. Bot.* 4 : 49. t. 60. 1835 ; Hook. f. *Fl. Brit. India* 2 : 336. 1878 ; Collett, *Fl. Siml.* 160. 1902 ; Parker, *For. Fl. Punj.* ed. 3. 209. 1956 ; Nair, *Fl. Bash. Himal.* 102. 1977.

Suberect or trailing shrubs. Stem and twigs reddish - brown. Leaflets rigidly coriaceous. Flowers white. Fruits globose, enclosed in the calyx, yellow or red, orange.

*Fl. & Fr.* : April September.

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

Temperate Himalaya.

**Rubus niveus** Thunb. *Dissert. de Rubo* 7 & 9. fig. 3. 1813 (non Wall. ex Hook. f.) ; Nair, *Fl. Bash. Himal.* 102. 1977. *R. lasiocarpus* Smith in *Rees, Cyclop.* 30. *Rubus* 6. 1819 ; Hook. f. *Fl. Brit. India* 2 : 339. 1878 ; Collett, *Fl. Siml.* 161. 1902 ; Parker, *For. Punj.* ed. 3. 212. 1956.

Large rambling shrubs with branches rooting at the tips. Flowers dark pink. Druplets black, hoary, stone pitted.

*Fl. & Fr.* : April August.

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

Temperate Himalaya.

**Rubus paniculatus** Smith in Rees, Cyclop. 30. Rubus 41. 1819 ; Hook. f. Fl. Brit. India 2 : 329. 1878 ; Collett, Fl. Siml. 160. 1902 ; Parker, For. Fl. Punj. ed. 3. 203. 1956 ; Nair, Fl. Bash. Himal. 102. 1977.

Rambling climber, densely pubescent or tomentose. Prickles hooked, flattened. Flowers white.

*Fl. & Fr.* : May September.

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

Temperate Himalaya.

**Rubus saxatilis** L. Sp. Pl. 494. 1753 ; Hook. f. Fl. Brit. India 2 : 338. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 369. 1972.

Short, erect herbs. Flowers small, white.

*Fl. & Fr.* : July September.

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

Western temperate Himalaya.

**Rubus ulmifolius** Schott in Oken, Isis. fasc. 5 : 821. 1818 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 369. 1972. *R. fruticosus* Hook. f. Fl. Brit. India 2 : 337. 1878 (non L.) ; Parker, For. Fl. Punj. ed. 3. 211. 1956 ; Nair, Fl. Bash. Himal. 101. 1977.

Suberect rambling shrubs. Leaflets 3. Flowers pink. Druplets black, many.

*Fl. & Fr.* May September.

Kinnaur (BSD).

Western Temperate Himalaya.

**Sibbaldia cuneata** Hornemm ex O. Ktze. in Linnaea 20 : 59. 1847. *S. parviflora* (non Willd. 1799) Edgew. in Trans. Linn. Soc. 20 : 44. 1846. *Potentilla sibbaldia* Hook. f. Fl. Brit. India 2 : 345. 1878 (non Hall. f.).

Herbs covered with stiff silky hairs. Flowers yellow.

*Fl. & Fr.* : July October.

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

Alpine Himalaya.

**Sibbaldia micropetala** (D. Don) Hand. Mazz. in Karsten. et Schenck. Veg. bild. 22 (8) : 6. 1832 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 369. 1972. *Potentilla micropetala* D. Don, Prodr. Fl. Nepal. 231. 1825. *Sibbaldia potentilloides* Camb. in Jacq. Voy. Bot. 4 : 54. t. 67. 1835 ; Nair, Fl. Bash. Himal. 103. 1977. *Potentilla albifolia* Wall. ex Hook. f. Fl. Brit. India 2 : 347. 1878 ; Collett, Fl. Siml. 164. 1921.

Perennial, diffusely spreading herbs. Leaves pinnate, toothed, white tomentose beneath. Flowers solitary, yellow, achenes furrowed.

*Fl. & Fr.* : June August.

Kangra (BSD), Simla (DD).

Subalpine Himalaya from Kashmir to Sikkim.

**Sibbaldia parviflora** Willd. Gcs. Naturf. Fr. Berlin Neue Schriften 2 : 125. t. 5. f. 4. 1799.

Leaves digitately 3-5 foliate. Flowers yellow.

*Fl. & Fr.* : July October.

Chamba (DD), Kinnaur (DD).

Western Himalaya.

**Sibbaldia purpurea** Royle, Ill. Bot. Himal. Mount. 208. t. 40. f. 3. 1834 ; Nair, Fl. Bash. Himal. 103. 1977. *Potentilla purpurea* (Royle) Hook. f. Fl. Brit. India 2 : 347. 1878.

Prostrate shrubs forming mats. Leaflets 3-fid at the apex. Flowers purple or red. Achenes smooth.

*Fl. & Fr.* : June August.

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

North - Western Himalaya.

**Sorbaria tomentosa** (Lindl.) Rehder in Journ. Arn. Arb. 19 : 75. 1938 ; Nair, Fl. Bash. Himal. 103. 1977. *Schizonotus tomentosa* Lindl. in

Bot. Reg. 26. (Misc.) : 71. 1841. *Spiraea sorbifolia* Hook. f. Fl. Brit. India 2 : 324. 1978 (non L.) ; Collett, Fl. Siml. 158. 1902.

Tall shrubs. Flowers white.

*Fl. & Fr.* : May September.

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

***Sorbus foliolosa*** (Wall.) Spach, Vege. Phan. 2 : 96. 1834 ; Nair, Fl. Bash. Himal. 104. 1977. *Pyrus foliolosa* Wall. Pl. As. Rar. 2 : 81. t. 189. 1831 ; Hook. f. Fl. Brit. India 2 : 376. 1878 ; Collett, Fl. Siml. 171. 1902 ; Parker, For. Fl. Punj. ed. 3. 224. 1958.

Small, robust trees with red brown tomentum. Flowers greenish - white. Fruits globose, bluish red when ripe.

*Fl. & Fr.* : June September.

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

Temperate Himalaya.

***Sorbus lanata*** (D. Don) Schauer in Ubers. Ver. and Schles. Ges. Vatarl. Kultur 1847 : 292.. 1848 ; Nair, Fl. Bash. Himal. 104. 1977. *Pyrus lanata* D. Don, Prodr. Fl. Nepal. 237. 1825 ; Hook. f. Fl. Brit. India 2 : 375. 1878 ; Collett, Fl. Siml. 170. 1902.

Small tree with densely wooly young parts. Flowers white. Fruit red.

*Fl. & Fr.* : May August.

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

Temperate Himalaya, Kashmir to Kumaon.

***Sorbus microphylla*** Wenzig in Linnaea 38 : 76. 1873 ; Decaisne in Nouv. Arcl. Mus. Paris. 10 : 159. 1874. *Pyrus microphylla* Wall. ex Hook. f. Fl. Brit. India 2 : 376. 1878.

Slender, subsacendent tree. Fruits white to pale bluish.

*Fl. & Fr.* : June July.

Chamba (DD).

Temperate Himalaya.

**Sorbus tianshanica** Rupr. in Mem. Acad. St. Petersb. Ser. 7. 14 (4) : 46. 1869 ; Stewart, Ann. Cat. Vās. Pl. W. Pak. & Kash. 371. 1972. *Pyrus aucuparia* Hook. f. Fl. Brit. India 2 : 375. 1878 ; Collett, Fl. Siml. 170. 1902 ; Nair, Fl. Bash. Himal. 103. 1977.

Small tree. Young parts covered with white tomentum. Flowers white. Fruits globose, red.

*Fl. & Fr.* : June September.

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

Western temperate Himalaya.

**Spiraea arcuata** Hook. f. Fl. Brit. India 2 : 325. 1878 ; Parker, For. Fl. Punj. ed. 3. 214. 1956.

Shrub with stout horizontal, arching, dark brown, shining, deeply grooved, branches. Flowers red, in dense corymbs. Disk with notched glands. Ripe carpels not sunk in the calyx tube.

*Fl. & Fr.* : June - August.

Chamba (DD).

Himalaya.

**Spiraea bella** Sims in Bot. Mag. 59 : t. 2426. 1823 ; Hook. f. Fl. Brit. India 2 : 324. 1878 ; Collett, Fl. Siml. 158. 1902 ; Parker, For. Fl. Punj. 215. 1956 ; Nair, Fl. Bash. Himal. 104. 1977.

Deciduous shrub with more or less erect branches. Flowers pink or rarely white, unisexual. Ripe carpels brown, shining, not sunk in the calyx tube.

*Fl. & Fr.* : May August.

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

Temperate Himalaya from Himachal Pradesh to Sikkim.

**Spiraea canescens** D. Don, Prodr. Fl. Nepal. 227. 1825 ; Hook. f. Fl. Brit. India 2 : 325. 1878 ; Collett, Fl. Siml. 159. 1902 ; Parker, For. Fl. Punj. ed. 3. 214. 1956 ; Nair, Fl. Bash. Himal. 104. 1977.

Deciduous shrub, twigs ribbed, greyish brown or reddish - brown. Flowers pale pink or white.

*Fl. & Fr.* : May - October.

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

Temperate Himalaya from Kashmir to Sikkim.

***Spiraea gracilis*** Maxim. in Act. Hort. Petrop. 6 : 200. 1879 ; Parker, For. Fl. Punj. ed. 3. 215. 1956. *S. parvifolia* Bert. Piant. Nuov. Asiont. 2 : 10. t. 4 ; Hook. f. Fl. Brit. India 2 : 326. 1878.

Shrub with terete branches. Leaves membranous. Flowers white in corymbose panicles. Disk conspicuous. Ripe carpels half sunk in the calyx tube.

*Fl. & Fr.* : May - August.

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

Western temperate Himalaya.

***Spiraea vacciniifolia*** D. Don, Prodr. Fl. Nepal. 227. 1825 ; Hook. f. Fl. Brit. India 2 : 325. 1878 ; Collett, Fl. Siml. 159. 1902 ; Parker, For. Fl. Punj. ed. 3. 215. 1956 ; Nair, Fl. Bash. Himal. 104. 1977.

Shrub with hoary branches. Flowers white, in dense cymes. Disk conspicuous. Ripe carpels half sunk in the calyx tube.

*Fl. & Fr.* : May - July.

Kulu (DD), Simla (DD).

Western temperate Himalaya.

## SAXIFRAGACEAE

B. M. WADHWA AND H. J. CHOWDHERY

***Astilbe rivularis*** Buch. Ham. ex D. Don. Prodr, Fl. Nepal. 211. 1825 ; Clarke in Hook. f. Fl. Brit. India 2 : 389. 1878 ; Collett, Fl. Siml. 174. 1902 ; Ghazanafar in Fl. West Pakistan 108 : 3. 1977 ; Nair, Fl. Bash. Himal. 105. 1977.

Erect, hairy herb. Flowers very small, green-yellow, petals absent. Capsule small, 2 beaked.

*Fl. & Fr.* : June October.

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

Temperate Himalaya.

***Bergenia ciliata*** (Haw.) Sternb. Revi. Saxif. Suppl. 2 : 2. 1831. *Megascea ciliata* Haw. Saxif. Enum. 7. 1821 forma ***ciliata*** Yeo in Kew Bull 20 (1) : 133. 1966, 67 ; Ghazanfar in Fl. West Pakistan 108 : 4. 1977. *Saxifraga ciliata* Royle, Illust. Bot. Himal. Mount. 1 : 226. t. 49. f. 2. 1835 (non *Megascea citiata* Haw.). *Bergenia ligulata* var. *ciliata* (Royle) Engl. in Bot. Zeit. 26. 841. 1868. *S. ligulata* Wall. var. *ciliata* (Royle) Hook. f. & Thoms in J. Linn. Soc. Bot. 2 : 61. 1858 ; Clarke in Hook. f. Fl. Brit. India 2 : 398. 1878.

Herb. Leaves hirsute on both surface. Flowers white, rose, or purplish.

*Fl. & Fr.* : March April.

Sirmur (BSD), Simla (LWG), Moralkanda (LWG).

Temperate Himalaya.

***Bergenia ciliata*** (Haw.) Sternb. Revi. Saxif. Suppl. 2 : 2. 1831. forma ***ligulata*** Yeo in Kew Bulletin 20 (1) : 134. 1966-67 ; Gaznafar in Fl. West Pakistan 108 : 6. 1977. *Saxifraga ligulata* Wall. in Asiat. Res. 13 : 398 et. tab. 1820 (non Murr. in Comm. Gotting 41 : 26. 1781) *nom. illegit.* ; Clarke in Hook. f. Fl. Brit. India 2 : 398. 1878. *Bergenia ligulata* sensu Blatter, Beaut. Fl. Kashm. 1 : 125. 1928 ; Rau, Ill. W. Himal. Pl. 15. 1963 ; Nair, Fl. Bash. Himal. 105. 1977. *B. himalaica* Boriss in Acta. Inst. Bot. Acad. Sci. URSS Ser. 5. 4 : 322. 1956.

Herb. Leaves fleshy, sheathing, ciliate. Flowers brownish-white.

*Fl. & Fr.* : April August.

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

Temperate Himalayas.

**Bergenia stracheyi** (Hook. f. & Thoms.) Engl. in Bot. Zeitung 26 : 842. 1868 ; Ghazanfar in Fl. West Pakistan 108 : 6. 1977 ; Nair, Fl. Bash. Himal. 105. 1977. *Saxifraga stracheyi* Hook. f. & Thoms. in Jour. Linn. Soc. Bot. 2 : 61. 1858 ; Clarke in Hook. f. Fl. Brit. India 2 : 398. 1878.

Herb. Leaves glabrous on both the surfaces. Flowers white, rose or yellow, pedicel and calyx pubescent.

*Fl. & Fr.* : May August.

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

Western Himalaya.

**Chrysosplenium tenellum** Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 74. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 401. 1878, ; Collett, Fl. Siml. 178. 1902.

Succulent herb. Stem filiform, procumbent, interlacing, leafy. Leaves cordate reniform. Flowers scattered, green-yellow.

*Fl. & Fr.* : May July.

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

Temperate Western Himalaya and Nepal.

**Saxifraga brunonis** Wall. ex Seringe in DC. Prodr. 4 : 45. 1830 ; Ghazanfar in Fl. West Pakistan 108 : 21. 1977. *S. brunoniana* Wall. Cat. No. 444. 1824 (nom. nud.) ex Sternb. Rev. Saxifr. Suppl. 2 : 25. t. 23. 1831 ; Clarke in Hook. f. Fl. Brit. India 2 : 397. 1878 ; Collett, Fl. Siml. 176. 1902 ; Nair, Fl. Bash. Himal. 107. 1977.

Herb. Flowers yellow, terminal.

*Fl. & Fr.* : July October.

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

Temperate Himalayas.

**Saxifraga cernua** L. Sp. Pl. 403. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 390. 1878 ; Ghazanfar in Fl. West Pakistan 108 : 12. 1977.

Herb. Flowers often terminal, solitary. Bulbils purple coloured.



*Fl. & Fr.* : July August.

Chamba (BSD), Kulu (BSD).

Western Himalaya.

**Saxifraga corymbosa** Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 70. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 393. 1878.

Herb. Leaves oblong-ovate. Flowers corymbose, rarely 3 1. Capsule ovate.

*Fl. & Fr.* : June September.

Kukri, Chenab valley.

(R. Ellis. Cat. No. 275.)

Himalaya-alpine region.

**Saxifraga diversifolia** Wall. ex Seringe in DC. Prodr. 4 : 44. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 393. 1878. *p.p.* ; Nair, Fl. Bash. Himal. 108. 1977.

Herb with glandular hairy surface. Lower leaves stalked, upper sessile. Flowers yellow.

*Fl. & Fr.* : July October.

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

Alpine Himalaya.

**Saxifraga filicaulis** Wall. ex Seringe in DC. Prodr. 4 : 46. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 396. 1878 ; Collett, Fl. Siml. 175. 1902 ; Ghazanafar in Fl. West Pakistan 108 : 15. 1977 ; Nair, Fl. Bash. Himal. 108. 1977.

Glandular, pubescent herb. Leaves scattered. Flowers yellow.

*Fl. & Fr.* : August September.

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

Alpine Himalaya.

**Saxifraga fimbriata** Wall. in DC. Prodr. 4 : 45. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 396. 1878.

Herb, glabrous or sparsely ciliate below, often bearing bulbils. Flowers golden.

*Fl. & Fr.* : July September.

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

Alpine Himalaya.

**Saxifraga flagellaris** Willd. ex Sternb. Rev. Saxi. 25. t. 6. 1810 ; Clarke in Hook. f. Fl. Brit. India 2 : 397. 1878 ; Ghazanfar in Fl. West Pakistan 108 : 18. 1977.

Herb. Stem pubescent upwards. Flowers with petals often with red lines at the base.

*Fl. & Fr.* : June September.

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

Alpine Himalaya from Kashmir to Kumaon.

**Saxifraga flagellaris** Willd. ex Sternb. Rev. Saxi. 25. t. 6. 1810. subsp. *stenophylla* (Royle) Hulten in Sev. Bot. Tidskr. 58 (1) : 94. 1964 ; Ghazanfar in Fl. West Pakistan 108 : 19. 1977. *S. stenophylla* Royle, Illustr. Bot. Himal. Mount. 1 : 227. t. 50. f. 1. 1835.

Differs from *S. flagellaris* Willd. ex Sternb. in having lower leaves and stem less pubescent or nearly glabrous.

*Fl. & Fr.* : June September.

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

Alpine Himalaya from Kashmir to Kumaon.

**Saxifraga hirculus** L. Sp. Pl. 402. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 392. 1878 ; Ghazanfar in Fl. West Pakistan 108 : 15. 1977.

Herb, 1 3 - flowered, sepals strongly deflexed, base often brown, villous, petals 2 3 times the sepals, golden with red dots.

*Fl. & Fr.* : July August.

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

Western Himalaya.

**Saxifraga hirculus** L. Sp. Pl. 402. 1753 var. **alpina** Engl. monogr. Saxifrag. 124. 1872 ; Ghazanfar in Fl. West Pakistan 108 : 16. 1977. *S. hirculus* var. *indica* Clarke in Hook. f. Fl. Brit. India 2 : 392. 1878.

Differs from *S. hirculus* L. in having peduncles very brown, villous. Sepals hardly deflexed even on the ripe fruits. Petals shorter, 1 2 times the sepals.

*Fl. & Fr.* : July October.

Chamba (DD).

Himalaya, Kashmir to Sikkim.

**Saxifraga jacquemontiana** Decne. in Jacq. Voy. Bot. 4 : 68. t. 78. f. 2. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 395. 1878 ; Ghazanfar in Fl. West Pakistan 108 : 25. 1977 ; Nair, Fl. Bash. Himal. 108. 1977.

Herb with orbicular leaves. Petals twice the sepals, golden.

*Fl. & Fr.* : July August.

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

Alpine Himalaya, Kashmir to Sikkim.

**Saxifraga lychnitis** Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 68. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 391. 1878.

Glandular, pubescent herb with tufted stems, 1 flowered.

*Fl. & Fr.* : August September.

Kulu (DD).

Himalaya.

**Saxifraga moorcroftiana** (Ser.) Sternb. Revis. Saxif. Suppl. 2. 28. 1831 ; Collett, Fl. Siml. 175. 1902 ; Ghazanfar in Fl. West Pakistan 108 : 13. 1977 ; Nair, Fl. Bash. Himal. 108. 1977. *S. diversifolia* Ser. var. *moorcroftiana* Ser. in DC. Prodr. 4 : 44. 1830.

Herb, glandular-hairy. Flowers yellow, sepals glandular, reflexed in fruit.

*Fl. & Fr.* : July August.

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

Temperate Himalaya.

**Saxifraga nutans.** Hook. f. & Thoms. in Jour. Linn. Soc. 2 : 69. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 393. 1878.

Herb. Stem densely glandular pubescent upwards. Flowers pale yellow.

*Fl. & Fr.* : August September.

Lahul and Spiti (DD).

Himalaya.

**Saxifraga odontophylla** Wall. ex Hook. f. & Thoms. in Jour. Linn. Soc. 2 : 64. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 390. 1878.

Herb, laxly villose. Flowers white. Petals much exceeding the calyx.

*Fl. & Fr.* : July September.

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

Western temperate Himalaya.

**Saxifraga pallida** Wall. ex Seringe in DC. Prodr. 4 : 38. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 394. 1878 *p. p.* *S. micrantha* Edgew. in Trans. Linn. Soc. 20 : 50. 1846 ; Clarke in Hook. f. Fl. Brit. India 2 : 394. 1878.

Herb, slightly pubescent or glabrous. Flowers white.

*Fl. & Fr.* July - August.

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

Alpine Himalaya.

**Saxifraga parnassifolia** D. Don in Trans. Linn. Soc. 13 : 405. 1821 ; Clarke in Hook. f. Fl. Brit. India 2 : 393. 1878. *p. p.* ; Ghazanafar in Fl. West Pakistan 108 : 13. 1977.

*Fl. & Fr.* : July September.

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

Alpine Himalaya.

**Saxifraga pseudo pallida** Engl. & Irmsch. in Eng. Bot. Jahrb. 50. Beibl. n. 114 : 40. 1914. var. **bellidifolia** Engl. & Irmsch. in Engl. Pflanzr. Saxif. IV. 117. 53. 1916 ; Ghazanfar in Fl. West Pakistan 108 : 14. 1977.

Erect herb. Leaves sparsely villous. Flowers reddish.

*Fl. & Fr.* : July September.

Lahul and Spiti (DD).

Himalaya.

**Saxifraga pulvinaria** H. Smith in Bull. Brit. Mus. Nat. Hist. 2 (4) : 105. 1958 ; Ghazanfar in Fl. West Pakistan 108 : 25. 1977. *S. imbricata* Royle, Illustr. Bot. Himal. Mount. 226. t. 49. f. 1. 1935 (non Lam. 1778) ; Clarke in Hook. f. Fl. Brit. India 2 : 394. 1878.

Herb. Uppermost leaves with a perforated whitened pit at their apex. Flowers sessile, yellow-white.

*Fl. & Fr.* : June August.

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

Alpine Himalaya, Kashmir to Sikkim.

**Saxifraga sibirica** L. Sp. Pl. ed. 2. 577. 1763 ; Clarke in Hook. f. Fl. Brit. India 2 : 390. 1878 ; Ghazanfar in Fl. West Pakistan 108 : 10. 1977 ; Nair, Fl. Bash. Himal. 108. 1977. *S. sibirica* L. var. *eusibirica* Engl. & Irm. in Engl. Pflanzr. 4. 117. 264. 1916. *S. mollis* Sm. in Sternb. Rev. Suppl. 2: 37. 1832.

Herb. Flowers 1-10, white, calyx tube in the ripe fruit short, funnel shaped.

*Fl. & Fr.* : June September.

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

Western Himalaya.

**Saxifraga stella aurea** Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 72. 1857. *S. jacquemontiana* var. *stella aurea* (Hook. f. & Thoms.) Clarke in Hook. f. Fl. Brit. India 2 : 395. 1878.

Herb. Flowers yellow, peduncles upto 5 cm long.

*Fl. & Fr.* : July August.

Lahul and Spiti (DD).

Alpine Himalaya.

## PARNASSIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Parnassia laxmannii** Pallas ex Schultes, Syst. Veg. 6 : 696. 1820 ; Siddiqi in Fl. West Pakistan 31 : 3. 1973 ; Nair, Fl. Bash. Himal. 106. 1977. *P. ovata* auct (non Ledeb. 1830) Clarke in Hook. f. Fl. Brit. India 2 : 403. 1878.

Herb. Flowers white.

*Fl. & Fr.* : July September.

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

Temperate and alpine Himalaya.

**Parnassia nubicola** Wall. ex Royle, Ill. Bot. Himal. Mount. 227. t. 50. f. 3. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 402. 1878 ; Collett, Fl. Siml. 178. f. 51. 1902 ; Nair, Fl. Bash. Himal. 106. 1977.

Glabrous herb. Leaves simple, long stalked. Flowers white. Capsule obovoid.

*Fl. & Fr.* : July September.

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

Temperate and alpine Himalaya.

**Parnassia pusilla** Wall. ex Arn. in Comp. B. Mag. 2 : 315. 1837 ; Hook. f. & Thoms. in Jour. Linn. Soc. 2 : 81. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 403. 1878.

Herb. Leaves reniform or ovate cordate. Capsule obovoid ellipsoid.

*Fl. & Fr.* : July September.

Lahul and Spiti (DD).

Alpine Himalaya.

## PHILADELPHACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Deutzia corymbosa** R. Br. in Royle, Ill. Bot. Himal. Mount. 216. t. 46. 1835 ; Clarke in Hook. f. Fl. Brit. India. 2 : 406. 1878. *p. p.* Collett, Fl. Siml. 179. 1902 ; Parker, For. Fl. Punjab ed. 3. 232. 1956 ; Nair, Fl. Bash. Himal. 105. 1977.

Shrub. Flowers white, fragrant.

*Fl. & Fr.* : May October.

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

Temperate Himalaya.

**Deutzia hookeriana** (Schneid) Airy Shaw in Kew Bulletin 1934 : 180. 1934. *D. corymbosa* var. *hookeriana* Schneid. in Mitt. Deuts. Dindr. Ges. 13 : 184. 1904. *D. corymbosa* R. Br. *sensu* Clarke in Hook. f. Fl. Brit. India. 2 : 406. 1878. *p. p.*

Shrub with stellate pubescence. Flowers white.

*Fl. & Fr.* : May August.

Kinnaur (BSD).

Western Himalaya.

**Deutzia staminea** R. Br. ex Wall. Pl. As. Rar. 2 : 82. t. 191. 1831 ; Clarke in Hook. f. Fl. Brit. India 2 : 407. 1878 ; Collett, Fl. Siml. 180. 1902 ; Parker, For. Fl. Punjab ed 3. 232. 1956 ; Siddiqi in Fl. West Pakistan 5 : 1. 1972 ; Nair, Fl. Bash. Himal. 106. 1977.

Shrub. Leaves with upper surface rough and lower surface grey, stellately tomentose. Flowers numerous.

*Fl. & Fr.* : April May.

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

Temperate Western Himalaya.

**Philadelphus tomentosus** Wall. ex G. Don, Gen. Syst. 2 : 807. 1832 ; Nair, Fl. Bash. Himal. 106. 1977. *P. coronarius* L. var. *tomentosus* Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 83. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 407. 1878.

Deciduous shrub. Leaves with ciliate margins. Flowers white.

*Fl. & Fr.* : May - September.

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

Temperate Himalaya.

## HYDRANGEACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Hydrangea anomala** D. Don, Prodr. Fl. Nep. 211. 1825 ; Nair, Fl. Bash. Himal. 106. 1977. *H. altissima* Wall. Tent. Fl. Nep. 2 : t. 50. 1826 ; Clarke in Hook. f. Fl. Brit. India 2 : 404. 1878 ; Collett, Fl. Siml. 178. 1902 ; Parker, For. Fl. Punjab ed. 3. 230. 1956.

Spreading shrub, climbing by adventitious roots. Flowers in rounded, compound, hairy cymes. Petals absent. Capsule crowned with the persistent calyx - limb and styles.

*Fl. & Fr.* : April August.

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

Temperate Himalaya.



## GROSSULARIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Ribes alpestre** Decne. in Jacq. Voy. Ind. 4 : 64. t. 75. 1844 ; Siddiqi in Fl. West Pakistan 27 : 3. 1972 ; Nair, Fl. Bash. Himal. 107. 1977. *R. grossularia* auct (non L.) Wall. in Roxb. Fl. Ind. 2 : 515. 1824 ; Clarke in Hook. f. Fl. Brit. India 2 : 410. 1878 ; Parker, For. Fl. Punjab ed. 3. 234. 1956.

Prickly shrub. Leaves crowded on dwarf shoot. Flowers greenish.

*Fl. & Fr.* : May September.

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

Alpine Western Himalaya.

**Ribes emodense** Rehd. in Jour. Arn. Arb. 5 : 161. 1924. *R. himalense* Decne. in Jacquem. Voy. Ind. 4 : 66. t. 77. 1844 ; Siddiqi in Fl. West Pakistan 27 : 9. 1972 ; Nair, Fl. Bash. Himal. 107. 1977. *R. rubrum* auct (non L.) Hook. f. & Thomson in J. Linn. Soc. 2 : 89. 1857 ; Clarke in Hook. f. Fl. Brit. India 2 : 411. 1878 ; Collett, Fl. Siml. 181. 1902 ; Parker, For. Fl. Punjab ed. 3. 236. 1956.

Shrub, pubescent or nearly glabrous. Flowers bisexual, green - yellow. Berry red.

*Fl. & Fr.* : May September.

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

Western Himalaya.

**Ribes glaciale** Wall. in Roxb. Fl. Ind. 2 : 513. 1824 ; Clarke in Hook. f. Fl. Brit. India 2 : 410. 1878 ; Collett, Fl. Siml. 181. 1902 ; Siddiqi in Fl. West Pakistan 27 : 3. 1972 ; Nair, Fl. Bash. Himal. 107. 1977.

Shrub. Flowers usually unisexual, green to dull brown. Berry purple, black.

*Fl. & Fr.* : May October.

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

Temperate and alpine Himalaya.

**Ribes nigrum** L. Sp. Pl. 201. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 411. 1878 ; Siddiqi in Fl. West Pakistan 27 : 9. 1972.

Shrub. Branches and leaves nearly glabrous. Flowers green. Berry black.

*Fl. & Fr.* : July October.

Lahul and Spiti (BSD, DD).

Temperate Western Himalaya.

**Ribes orientale** Desf. Hist. Arb. 2 : 88. 1809 ; Clarke in Hook. f. Fl. Brit. India 2 : 410. 1878 ; Parker, For. Fl. Punjab ed. 3. 234. 1956 ; Siddiqi in Fl. West Pakistan 27 : 5. 1972 ; Nair, Fl. Bash. Himal. 107. 1977.

Shrub, young branches glandular sticky. Flowers purple.

*Fl. & Fr.* : May September.

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

Himalaya.

## CRASSULACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Bryophyllum pinnatum** (Lamk.) Oken, Allgem. Naturgesch. 3 : 184. 1966 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 332. 1972. *Cotyledon pinnata* Lamk. Encycl. 2 : 141. 1786. *B. calycinum* Salisb. Parad. Lond. t. 3. 1805 ; Clarke in Hook. f. Fl. Brit. India 2 : 413. 1878.

Tall, erect herb. Flowers green, reddish purple. Fruits enclosed in persistent papery corolla and calyx.

*Fl. & Fr.* : May September.

Mandi (BSIP).

Tropical parts of India.

**Kalanchoe spathulata** DC. Hist. Pl. Grasses t. 65. 1799 ; Clarke in Hook. f. Fl. Brit. India 2 : 414. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 332. 1972.

Erect, stout perennial herb. Leaves spathulate oblong, crenate. Flowers yellow.

*Fl. & Fr.* : April September.

Chamba (RRL), Kulu (DD), Simla (CAL).

Tropical Himalaya.

**Sedum acuminatum** (Decne.) Hamet in Candollea 4 : 21. 1929. *Sempervivum acuminatum* Decne. in Jacquem. Voy. Bot. 4 : t. 74. f. 1. 1844 ; Clarke in Hook. f. Fl. Brit. India 2 : 422. 1878.

Fleshy herb with mucronate leaves. Flowers rose - purple.

*Fl. & Fr.* : May September.

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

Alpine Himalaya.

**Sedum adenotrichum** Wall. ex Edgew. in Trans. Linn. Soc. Bot. 20 : 48. 1846 ; Clarke in Hook. f. Fl. Brit. India 2 : 420. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 33. 1972 ; Nair, Fl. Bash. Himal. 109. 1977.

Glandular, pubescent herb. Flowers white striped with pink.

*Fl. & Fr.* : May June.

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

Western Himalaya.

**Sedum bupleuroides** Wall. ex Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 98. 1858 ; Clarke in Hook. f. Fl. Brit. India 2 : 418. 1878 ; *Rhodiola bupleuroides* (Wall. ex Hook. f. & Thoms.) Fu in Act. Phytotax. Sin. Add. 1 : 124. 1965.

Glabrous herb. Flowers small, black purple.

*Fl. & Fr.* : May July.

Lahul and Spiti (BSD).

Himalaya.

**Sedum crenulatum** Hook. f. & Thoms. in Journ. Linn. Soc. 2 : 96. 1858 ; Clarke in Hook. f. Fl. Brit. India 1 : 417. 1878.

Succulent herb. Leaves elliptic or broad - oblong, crenulated. Flowers rose coloured.

*Fl. & Fr.* : May August.

Kulu (DD).

Himalaya.

**Sedum ewersii** Ledeb. Fl. Alt. 2 : 191. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 421. 1878 ; Collett, Fl. Siml. 186. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 383. 1972 ; Nair, Fl. Bash. Himal. 110. 1977.

Glabrous herb. Leaves ovate or orbicular. Petals pink.

*Fl. & Fr.* : July September.

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

Temperate, and alpine Himalaya.

**Sedum heterodontum** Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 95. 1858 ; Clarke in Hook. f. Fl. Brit. India 2 : 417. 1878 ; Nair, Fl. Bash. Himal. 110. 1977. *S. roseum* (L.) Scop. var. *heterodontum* (Hook. f. & Thoms.) Fedtsch. in Frod. Genus Sedum Pt. 1 : 40. 1930.

Herb. Leaves prominently white margined. Flowers rose coloured.

*Fl. & Fr.* : June September.

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

Temperate and alpine Western Himalaya.

**Sedum indicum** (Decne.) Hamet in Bull. Soc. Bot. France 74 : 271. 1927. *Crassula indica* Decne. in Jacq. Voy. Bot. 4 : 61. t. 73. 1844 ; Clarke in Hook. f. Fl. Brit. India 2 : 413. 1878 ; Collett, Fl. Siml. 183. 1902 ; Nair, Fl. Bash. Himal. 109. 1977.

Glabrous fleshy herb. Flowers yellow, dull pink tipped.

*Fl. & Fr.* : July September.

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

Himalaya.

***Sedum linearifolium*** Royle, Ill. Bot. Himal. Mount 222. t. 48. f. 1. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 420. 1878 ; Collett, Fl. Siml. 185. 1902 ; Nair, Fl. Bash. Himal. 110. 1977.

Herb. Leaves narrowly oblong. Flowers purplish white.

*Fl. & Fr.* : June July.

Chamba (BSD, CAL, LWG), Kangra (CAL), Kinnaur (CAL), Kulu (BSD), Lahul & Spiti (DD, RRL), Mandi (LWG), Simla (BSD, CAL, LWG),

Temperate Western Himalaya.

***Sedum linearifolium*** Royle var. ***sinuatum*** (Royle) Hamet in Acta. Hort. Goth. 2 : 394. 1926 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 334. 1972. *S. sinuatum* Royle, Ill. Bot. Himal. Mount. 222. 1835 ; Nair, Fl. Bash. Himal. 111. 1977. *S. trifidum* Wall. ex Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 100. 1858 ; Clarke in Hook. f. Fl. Brit. India 2 : 420. 1878 ; Collett, Fl. Siml. 185. 1902.

Glabrous herb. Leaves strap shaped. Flowers pink purple sometimes cream coloured.

*Fl. & Fr.* : August September.

Chamba (CAL, DD), Kangra (CAL, DD), Kulu (DD), Simla (DD, LWG).

Temperate Himalaya.

***Sedum multicaule*** Wall. ex Lindl. Bot. Register Misc. 25 : 58 1840 ; Clarke in Hook. f. Fl. Brit. India 2 : 422. 1878 ; Collett, Fl. Siml. 186. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 334. 1972 ; Nair, Fl. Bash. Himal. 110. 1977.

Glabrous herb, much divided from the base. Flowers yellow.

*Fl. & Fr.* : July August.

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

Temperate Himalaya.

**Sedum oreades** (Decne.) Hamet in Bull. Bot. Soc. Fr. 56 : 571. 1909 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 334. 1972. *Umbilicus oreades* Decne. in Jacquem. Voy. Bot. 4 : 62. 1844. *Cotyledon oreades* Clarke in Hook. f. Fl. Brit. India 2 : 416. 1878.

Herb. Flowers white.

*Fl. & Fr.* : June August.

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

Alpine Himalaya.

**Sedum quadrifidum** Pall. Reise 3 : 730. 1776 ; Clarke in Hook. f. Brit. India 2 : 418. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 334. 1972 ; Nair, Fl. Bash. Himal. 110. 1977.

Glabrous or puberulous herb. Flowers red with oblong sepals.

*Fl. & Fr.* : July August.

Chamba (CAL), Lahul and Spiti (CAL, RRL), Simla (DD).

Alpine Western Himalaya.

**Sedum rosulatum** Edgew. in Trans. Linn. Soc. 20. 148. 1846 ; Clarke in Hook. f. Fl. Brit. India 2 : 420. 1878 ; Collett, Fl. Siml. 185. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 335. 1972 ; Nair, Fl. Bash. Himal. 110. 1977.

Glandular, pubescent or glabrous herb. Leaves spatulate. Flowers white.

*Fl. & Fr.* : May August.

Chamba (BSD, CAL, DD, LWG), Kangra (BSD), Kinnaur (BSD, DD), Kulu (BSD, DD), Lahul & Spiti (DD), Simla (CAL, DD, LWG), Sirmur (BSD).

Western Himalaya.

**Sedum sedoides** (Decne.) R. Hamet in Candollea 4 : 47 : 1927 ; *Sempervivum sedoides* Decne. in Jacquem. Voy. Bot. 63. t. 74. 1844 ; Clarke in Hook. f. Fl. Brit. India 2 : 423. 1878.

Fleshy herb. Flowers white.

*Fl. & Fr.* : July September.

Kulu (CAL), Simla (CAL).

Western Himalaya.

**Sedum tibeticum** Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 96. 1858 ; Clarke in Hook. f. Fl. Brit. India 2 : 418. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 335. 1972. *S. tibeticum* var. *stracheyi* Hook. f. & Thoms in Journ. Linn. Soc. Bot. 2 : 96. 1858.

Glabrous herb. Flowers rose - purple.

*Fl. & Fr.* : June August.

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

Alpine Western Himalaya.

**Sedum trullipetalum** Hook. f. & Thoms. in J. Linn. Soc. Bot. 2 : 102. 1858 ; Clarke in Hook. f. Fl. Brit. India 2 : 421. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 111. 1977.

Glabrous herb. Leaves lanceolate. Flowers yellow.

*Fl. & Fr.* : July September.

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

Temperate and alpine Himalaya.

**Sedum wallichianum** Hook. Icon. Pl. 7 : t. 604. 1844. *S. asiaticum* DC. var. *wallichianum* Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 100. 1858. *S. crassipes* Wall. ex Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 99. 1858 ; Nair, Fl. Bash. Himal. 109. 1977.

Perennial herb with linear leaves. Flowers white red.

*Fl. & Fr.* : June September.

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

Himalaya.

**Tillaea pentandra** Royle ex Edgew. in Trans. Linn. Soc. Bot. 20 : 50. 1846 ; Clarke in Hook. f. Fl. Brit. India 2 : 412. 1878 ; Collett, Fl. Siml. 182. 1902 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 337. 1972 ; Nair, Fl. Bash. Himal. 111. 1977.

Small herb with opposite leaves. Flowers minute, greenish Orange.

*Fl. & Fr.* : July September.

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

Subtropical Himalaya.

**Tillaea pharnaceoides** Hochst. ex Britt. in Oliver, Fl. Trop. Africa 2 : 387. 1871 ; Clarke in Hook. f. Fl. Brit. India 2 : 412. 1878 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 337. 1972.

Decumbent, branched herb.

*Fl. & Fr.* : June September.

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

Northern India and Himachal Pradesh.

## DROSERACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Drosera peltata** J. E. Sm. in Willd. Sp. Pl. 1 : 1546. 1797 ; Clarke in Hook. f. Fl. Brit. India 2 : 424. 1878 ; Raizada et. al. Fl. Mussorie 242. 1978. *D. lunata* Buch. Ham. ex DC. Prodr. 1 : 319. 1824 ; Collett. Fl. Siml. 187. t. 55. 1902.

Erect, leafy herb. Flowers white.

*Fl. & Fr.* : June September.

Chamba (DD), Simla (DD).

Throughout India.



## HAMAMELIDACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Parrotiopsis jacquemontiana** (Decne.) Rehder in Journ. Arn. Arbor. 1 : 256. 1920 ; Z. Ali in Fl. West Pak. 2 : 1. 1970 ; Nair, Fl. Bash. Himal. 109. 1977. *Parrotia jacquemontiana* Decne. in Jacq. Voy. Ind. 4 : 73. t. 82. 1844 ; Clarke in Hook. f. Fl. Brit. India 2 : 426. 1878 ; Parker, For. Fl. Punj. ed. 3. 237. 1956.

Large deciduous shrub with stellate hairs on the twigs. Flowers minute, greenish-yellow.

*Fl. & Fr.* : April October.

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

Kashmir and Himachal Pradesh.

## HALORAGACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Myriophyllum spicatum** L. Sp. Pl. 992. 1753 ; Clarke in Hook. f. Fl. Brit. India. 2 : 433. 1878 ; Collett, Fl. Siml. 188. 1902 ; Nasir & Ali, Fl. West Pakistan 113 : 2. 1977 ; Nair, Fl. Bash. Himal. 112. 1977.

Glabrous, submerged herb. Flowers in spikes. Upper flowers males and the lower female. Fruit oblong dividing in 2 or 4 nutlets.

*Fl. & Fr.* : June August.

Chamba (BSD).

Himalaya.

## HIPPURIDACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Hippuris vulgaris** L. Sp. Pl. 4. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 432. 1878 ; Ross-Craig, Draw. Brit. Pl. 11 : t. 4. 1958.

Aquatic, leafy herbs. Leaves in whorls, linear-oblong. Flowers minute. Drupe ellipsoid, very smooth.

*Fl. & Fr.* : July - August.

Lahul and Spiti (BSD, DD).

Alpine Himalaya and Western Tibet.

## CALLITRICHACEAE

M. WADHWA AND H. J. CHOWDHERY

**Callitriche intermedia** Hoffm. Fl. Germ. 2. 1791.

Aquatic herb. Flowers minute.

*Fl. & Fr.* : August - September.

Lahul and Spiti (BSD).

Western Himalaya.

**Callitriche palustris** L. Sp. Pl. 969. 1753 *ex parte* : *C. verna* L. Fl. Suec. ed 2. 2. 1755 ; Clarke in Hook. f. Fl. Brit. India 2 : 434. 1878 ; Collett, Fl. Siml. 189. 1902.

Glabrous herb. Leaves oblong or spatulate. Margins of fruit not winged, blunt.

**Callitriche stagnalis** Scop. Fl. Carn. ed. 2. 2 : 251. 1772 ; Clarke, in Hook. f. Fl. Brit. India 2 : 434. 1878 ; Collett, Fl. Siml. 189. 1902 ; Ross - Craig, Draw. Brit. Pl. 11 : t. 8. 1958 ; Nair, Fl. Bash. Himal. 112. 1977.

Herb. Leaves ovate or spatulate, sometimes very narrow. Margins of fruit winged, acute.

*Fl. & Fr.* : August September.

Simla (DD).

Throughout Himalaya.

*Fl. & Fr.* : July September.

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

Temperate Western Himalaya.

## COMBRETACEAE

B. P. UNIYAL AND B. M. WADHWA

**Anogeissus latifolia** (DC). Bedd. Fl. Sylv. t. 16. 1869 ; Clarke in Hook. f. Fl. Brit. India 2 : 450. 1878 ; Parker, For. Fl. Punj. ed. 3. 240. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 502. 1972 ; S. Qaiser & M. Qaiser in Fl. W. Pak. 122 : 2. 1978. *Conocarpus latifolius* DC. Prodr. 3 : 17 : 1828.

Deciduous tree. Heads solitary or in short cymes. Fruits small, about 1 cm long, 2 winged.

Wood is used for agricultural implements, leaves for tanning and gum for printing.

*Fl. & Fr.* : May September.

Kangra (DD, RRL).

Throughout the Himalaya.

**Terminalia alata** Heyne ex Roth. Nov. Pl. Sp. 379. 1821. *Pentaptera tomentosa* Roxb. ex DC. Prodr. 3 : 14. 1825. *Terminalia tomentosa* (DC). Wt. & Arn. Prodr. 314. 1834 ; Bedd. Fl. Sylv. t. 17. 1869 ; Clarke in Hook. f. Fl. Brit. India 2 : 447. 1878 ; Parker, For. Fl. Punj. ed. 3. 240. 1956.

Tall tree. Flowers in paniced spikes. Fruits 5 winged, wings striate with horizontal veins.

*Fl. & Fr.* : August March.

Mani (DD), Una (BSD).

Sub Himalayan tracts and Daccan peninsula.

**Terminalia arjuna** (Roxb. ex DC.) Wt. & Arn. Prodr. 314. 1834 ; Clarke in Hook. f. Fl. Brit. India 2 : 447. 1878 ; Parker, For. Fl. Punj. ed. 3. 239. 1956 ; S. Qaiser & M. Qaiser in Fl. W. Pak. 122 : 9. 1978.

Tall tree. Flowers in paniced spikes. Fruits 5 - winged, wings striate with ascending veins.

*Fl. & Fr.* : May September.

Kangra (DD, RRL).

Common along riverian areas in the sub Himalayan tracts and Deccan peninsula.

**Terminalia bellirica** (Gaertn.) Roxb. Pl. Corom. 2 : 54. t. 198. 1805 ; Clarke in Hook. f. Fl. Brit. India 2 : 445. 1878 ; Parker, For. Fl. Punj. ed. 3. 238. 1956 ; S. Quiser & M. Quiser in Fl. W. Pak. 122. 6. 1978.

Tall tree. Flowers in spikes, greenish yellow, upper ones male, lower ones hermaphrodite.

*Fl. & Fr.* : May September.

Kangra (RRL), Mandi (LWG).

Throughout the plains, extending to sub Himalayan tracts.

**Terminalia chebula** Retz. Obs. Bot. 5 : 31. 1789 ; Clarke in Hook. f. Fl. Brit. India 2 : 446. 1878 ; Parker, For. Fl. Punj. ed. 3. 239. 1956 ; S. Qaiser & M. Qaiser in Fl. W. Pak. 122 : 7. 1978.

Middle sized tree. Flowers in spikes, all hermaphrodite. Fruits non-winged, only ribbed when dry.

Fruits are medicinally important and edible.

*Fl. & Fr.* : April June.

Kangra (BSD, RRL), Una (BSD).

Throughout India.

## MYRTACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Callistemon viminalis** (Soland.) Cheel in Svensk. Vet. Akad. Handl. n. s. 52. 10 : 16. 1919.

Small tree. Leaves alternate, gland dotted on the mid rib and marginal veins. Flowers in terminal cymes, crimson.

*Fl. & Fr.* : April May.

Kangra (RRL).

Tropical and subtropical parts of India.

**Eucalyptus bicolor** A. Cunn. ex Hook. f. in Mitch. Journ. Trop. Austr. 390. 1848 ; Nair, Fl. Bash. Himal. 112. 1977.

Simla (DD).

Planted.

**Eucalyptus camaldulensis** Dehn. Cat. Pl. Hort. Camald. ed. 2. 20. 1832.

Mandi (DD), Simla (DD), Una (BSD).

Planted.

**Eucalyptus coriacea** A. Cunn. ex Schau. in Walp. Rep. 2 : 925. 1843; Nair, Fl. Bash. Himal. 112. 1977.

Simla (DD).

Planted.

**Eucalyptus crebra** F. V. Muell. in Journ. Linn. Soc. 3 : 87. 1859 ; Parker, For. Fl. Punj. ed. 3, 248. 1956.

Kangra (Parker, 1956).

Planted.

**Eucalyptus drepanophylla** F. V. Muell. ex Benth. Fl. Austral. 3 : 221. 1867.

Kangra (DD).

Planted.

**Eucalyptus elaeophora** F. V. Muell. Fragm. 4 : 52. 1858 ; Nair, Fl. Bash. Himal. 112. 1977.

Solan (DD).

Planted.

**Eucalyptus eugenoides** Sieb. ex Spreng. Syst. 4 : 195. 1825 ; Nair, Fl. Bash. Himal. 112. 1977.

Simla (DD).

Planted.

**Eucalyptus eximia** Schau. in Walp. Rep. 2 : 925. 1843 ; Nair, Fl. Bash. Himal. 112. 1977.

Simla (DD).

Planted.

**Eucalyptus globulus** Labill. Voy. 1 : 153. t. 13. 1799 ; Parker, For. Fl. Punj. ed. 3. 251. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 503. 1977 ; Nair, Fl. Bash. Himal. 112. 1977.

Kangra (RRL), Kulu (LWG), Solan (BSD).

Planted.

**Eucalyptus hemiphloia** F. V. Muell. Fragm. 2 : 62. 1858 ; Parker, For. Fl. Punj. ed. 3. 249. 1956 ; Nair, Fl. Bash. Himal. 112. 1977.

Simla (DD).

Planted.

**Eucalyptus linearis** Dehn. Cat. Pl. Hort. Camald. ed. 2. 20. 1832 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus lbgifolia** Link & Otto. Enum. Hort. Berol. 2 : 29. 1822 ;  
Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus maculata** Hook. f. Icon. Pl. t. 679. 1867 ; Nair, Fl. Bash.  
Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus maidenii** F. V. Muell. in Proc. Linn. Soc. N. S. Wales,  
Ser. 11. 1020. tt. 28. 29. 1890 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus melanophloia** F. V. Muell. in Journ. Linn. Soc. 3 : 93.  
1859 ; Parker, For. Fl. Punj. ed. 3. 249. 1956.

Mandi (DD).

Planted.

**Eucalyptus melliodora** A. Cunn. ex Schau. in Walp. Rep. 2 : 924.  
1843 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus obliqua** L. Herit, Sert. Angl. 18. t. 20. 1788 ; Nair, Fl.  
Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus ovata** Labill. Nov. Holl. Pl. 2 : 13. t. 153. 1806 ; Nair,  
Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus polyanthemos** Schau. in Walp. Rep. 2 : 924. 1858 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus propinqua** Dean & Maid in Proc. Linn. Soc. N. S. Wales Ser. 2. 10 : 541. 1896 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus punctata** DC. Prodr. 3 : 217. 1827 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus regnans** F. V. Muell. in Rep. Acclim. Soc. Vict. 1870 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus resinifera** Sm. in White Jour. Voy. N. S. Wales 231. 1871 ; Nair, Fl. Bash. Himal. 114. 1977.

Simla (DD).

Planted.

**Eucalyptus risdonii** Hook. f. in Hook. Lond. Journ. Bot. 6 : 477. 1847 ; Nair, Fl. Bash. Himal. 114. 1977.

Simla (DD).

Planted.

**Eucalyptus saligna** Sm. in Trans. Linn. Soc. 3 : 285. 1797 ; Parker, For. Fl. Punj. ed. 3. 251. 1956.



Simla (DD).

Planted.

**Eucalyptus sideroxylon** A. Cunn. in Mitch. Journ. Trop. Austral. 339. 1848 ; Parker, For. Fl. Punj. ed. 3. 248. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 503. 1972 ; Nair, Fl. Bash. Himal. 113. 1977.

Simla (DD).

Planted.

**Eucalyptus stuartiana** F. V. Muell. ex Miq. in Nederal. Kruidk. Arch. 4 : 131. 1859.

Simla (DD).

Planted.

**Eucalyptus viminalis** Labill. Nov. Holl. Pl. 2 : 12. t. 151. 1806 ; Nair. Fl. Bash. Himal. 114. 1977.

Simla (DD).

Planted.

**Eucalyptus virgata** Sieb. ex DC. Prodr. 3 ; 217. 1827. *S. sieberiana* F. V. Muell. Eucalypt. Decad. 2. 1879 ; Nair, Fl. Bash. Himal. 114. 1977.

Simla (DD).

Planted.

**Myrtus communis** L. Sp. Pl. 471. 1753 ; Parker, For. Fl. Punj. ed. 3, 245. 1956 ; Stewart Ann. Cat. Vas. Pl. W. Pak. & Kash. 503. 1972.

Kangra (DD).

Planted.

**Psidium guajava** L. Sp. Pl. 470. 1753 ; Duthie in Hook. f. Fl. Brit. India 2 : 468. 1878 ; Parker, For. Fl. Punj. ed. 3. 245. 1956 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 504. 1972.

Small tree. Leaves opposite. Flowers white. Fruits edible.

Kinnaur (BSD).

Planted for fruits.

*Syzygium cumini* (L.) Skeels in U. S. Dept. Agric. Bur. Pl. Indust. Bull. 248 : 25. 1912. *Myrtus cumini* L. Sp. Pl. 471. 1753. *Eugenia jambolana* Lam. Encycl. 3 : 198. 1789 ; Duthie in Hook. f. Fl. Brit. India 2 : 499. 1879 ; Parker, For. Fl. Punj. ed. 3. 243. 1956.

Medium sized tree. Leaves opposite. Flowers white. Fruits dark purple on maturity, edible.

*Fl. & Fr.* : April - August.

Chamba (DD), Hamirpur (DD), Mandi (LWG), Sirmur (BSD), Una (DD).

Throughout India.

## LECYTHIDACEAE

B. M. WADHWA AND H. J. CHOWDHERY

*Careya arborea* Roxb. Pl. Corom. 3 : 14. t. 218. 1811 ; Clarke in Hook. f. Fl. Brit. India 2 : 511. 1879 ; Parker, For. Fl. Punj. ed. 3. 244. 1956.

Medium sized tree. Leaves alternate, oblong or orbicular. Flowers white in terminal spikes, foul smelling.

*Fl. & Fr.* : March - June.

Kangra (Parker, 1956).

Throughout India.

## MELASTOMATACEAE

B. M. WADHWA AND H. J. CHOWDHERY

*Osbeckia chinensis* L. Sp. Pl. 345. 1753 ; Clakre in Hook. f. Fl. Brit. India 2 : 515. 1879.

Herbs. Leaves broadly oblong, narrow at the base, hairy. Flowers capitate, mauve coloured. Fruit ovoid.

*Fl. & Fr.* : May August.

Kangra (DD).

Throughout India.

## LYTHRACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Lagerstroemia indica** L. Syst. Nat. ed. 10. 2 : 1076. 1759 ; Clarke in Hook. f. Fl. Brit. India 2 : 575. 1879 ; Parker, For. Fl. Punjab ed. 3. 255. 1956 ; M. I. Dar in Fl. West Pakistan 78 : 2. 1975 ; Nair, Fl. Bash. Himal. 114. 1977.

Shrub. Flowers bright pink, showy.

*Fl. & Fr.* : June October.

Solan (BSD).

Throughout India. Cultivated in gardens.

**Lythrum salicaria** L. Sp. Pl. 446. 1753 ; M. I. Dar in Fl. West Pakistan 78 : 7. 1975.

*Fl. & Fr.* : July - September.

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

**Rotala densiflora** (Roth. ex Roem & Schult.) Koehne, Engler Bot. Jahrb. 1 : 164. 1881 ; Pol. & Rech. f. in Fl. Iran. 51 : 9. 1968 ; M. I. Dar in Fl. West Pakistan 78. 13. 1975. *Ammannia densiflora* Roth. ex Roem. & Schult. Syst. Veg. 3 : 304. 1818. *Ammannia densiflora* Roxb. Fl. Ind. ed. Carvey 1 : 427. 1832 ; Clarke in Hook. f. Fl. Brit. India 2 : 568. 1879.

Glabrous herb. Flowers in distinct spikes. Capsule spherical.

*Fl. & Fr.* : June September.

Kangra (DD), Kulu (DD).

Throughout tropical India.

**Rotala rotundifolia** (Buch. Ham. ex Roxb.) Koehne in Bot. Jahrb. 1 : 175. 1880. *Ammannia rotundifolia* Buch. Ham. ex Roxb. Fl. Ind. 1 : 446. 1820 ; Clarke in Hook. f. Fl. Brit. India 2 : 566. 1879.

Glabrous herb. Flowers bright rose in colour. Capsule ellipsoid.

*Fl. & Fr.* : April June.

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

Common in rice fields throughout the plains.

**Woodfordia fruticosa** (L.) S. Kurz in Journ. As. Soc. Beng. 40 (2) : 56. 1871. M. I. Dar in Fl. West Pakistan 78 : 6. 1975 ; Collett, Fl. Siml. 191. 1902 ; Brandis, For. Fl. N. W. & C. India 254. 1874; *Lythrum fruticosum* L. Syst. Nat. ed. 10. 1045. 1759 *Woodfordia floribunda* Salisb. Parad. Land. t. 42. 1806 ; Clarke in Hook. f. Fl. Brit. India 2 : 572. 1879 ; Collett, Fl. Siml. 193. 1902 ; Parker, For. Fl. Punj. ed. 3. 255. 1956.

Pubescent shrub. Flowers red.

*Fl. & Fr.* : March June.

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

Throughout India.

## PUNICACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Punica granatum** L. Sp. Pl. 472. 1753 ; Clarke in Hook. f. Fl. Brit. India 2. 580. 1879 ; Collett, Fl. Siml. 191. 1902 ; Parker, For. Fl. Punjab ed. 3. 254. 1956 ; S. Ghazanfar in Fl. West Pakistan 102 : 2. 1976 ; Nair, Fl. Bash. Himal. 115. 1977.

Large shrub with axillary thorns. Petals wrinkled, red. Fruits woody, tipped with persistent calyx.

*Fl. & Fr.* : May September.

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

Cultivated throughout India.

## ONAGRACEAE

H.J. CHOWDHERY AND B.M. WADHWA

***Circaea cordata*** Royle, Ill. Bot. Him. Mount. 211. t. 43. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 589. 1879 ; Collett, Fl. Siml. 196. 1902 ; Nair, Fl. Bash. Himal. 115. 1977.

Herbs. Flowers yellowish-white. Ovary 2-celled. Seeds 2.

*Fl. & Fr.* : July-September.

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

Western Himalaya.

***Circaea repens*** Wall. ex Aschers. et. Magnus in Bot. Zeit. 28 : 761. 1870. *C. lutetiana* sensu Clarke in Hook. f. Fl. Brit. India 2 : 589. 1879 (non L.). *C. alpina* L. var. *himalaica* Clarke in Hook. f. Fl. Brit. India 2 : 589. 1879.

Pubescent herb. Flowers white or tinged with pink. Ovary 2 - celled. Seeds 2.

*Fl. & Fr.* : June September.

Simla (DD).

Himalaya.

***Epilobium amurense*** Hausskn. in Oesterr. Bot. Zeit. 29 : 55. 1879 ssp. ***laetum*** (Wall. ex Hausskn.) Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 367. 1962. *E. laetum* Wall. ex Hausskn. Monogr. Epilo. 218. 1884 ; Collett, Fl. Siml. 196. 1902. *E. tetragonum* Sensu Clarke in Hook. f. Fl. Brit. India 2 : 586. 1879. *p.p.* (non L.).

Herb. Flowers white or pale pink.

*Fl. & Fr.* : July - August.

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

Himalaya.

**Epilobium angustifolium** L. Sp. Pl. 347. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 583. 1879 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 346. 1962 et in Rech. f. Fl. Iran. 7 : 5. 1964 ; Nair, Fl. Bash. Himal. 116. 1977.

Glabrous herb. Flowers rose purple, calyx tube covered with close white tomentum. Capsule pubescent, seeds narrowly obovoid.

*Fl. & Fr.* : July September.

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

Temperate Western Himalaya.

**Epilobium brevifolium** D. Don, Prodr. Fl. Nepal. 222. 1825 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 361. 1962.

Herb, well branched from the base. Stigma clavate.

*Fl. & Fr.* : July August.

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

Himalaya.

**Epilobium chitralense** Raven in Bull. Brit. Mus. Nat. Hist. 2 : 379. 1962. et. Rech. Fl. Iran. 7 : 12. 1964.

Herb lacking turions. Inflorescence strigose.

*Fl. & Fr.* : August September.

Lahul and Spiti (BSD).

Himalaya.

**Epilobium cylindricum** D. Don, Prodr. Fl. Nepal. 222. 1825 ; Collett, Fl. Siml. 194. 1902 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 355. 1962 et in Rech. f. Fl. Iran. 7 : 10. 1964. *E. roseum* var. *cylindricum* (D. Don.) Clarke in Hook. f. Fl. Brit. India 2 : 585. 1879.

Glabrescent herb with distinct hairy lines. Flowers pale pink.

*Fl. & Fr.* : June September.

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

Himalaya.

**Epilobium hirsutum** L. Sp. Pl. 347. 1753. *p.p. excl. E. parviflorum* Schreb. ; Clarke in Hook. f. Fl. Brit. India 2 : 583. 1879 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12): 353. 1962. et. in Rech. f. Fl. Iran. 7 : 7. 1964 ; Nair, Fl. Bash. Himal. 116. 1977. *E. tomentosum* Vent. Descr. Pl. Jard. Cels. 90. t. 90. 1802. *E. hirsutum* L. var. *tomentosum* (Vent.) Boiss. Fl. Ori. 2 : 746. 1872. *E. hirsutum* L. var. *villosissimum* Koch. Syn. Fl. Germ. ed. 1. 240. 1835. *E. hirsutum* var. *luetum* Clarke and var. *sericeum* Clarke in Hook. f. Fl. Brit. India 2 : 584. 1879.

Herb clothed with dense white hairs. Flowers pink purple.

*Fl. & Fr.* : June September.

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

Western Himalaya and Nepal.

**Epilobium latifolium** L. Sp. Pl. 347. 1753. ssp. *latifolium* ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 348. 1962 et Rech. f. Fl. Iran. 7 : 8. 1964. *Chamerion latifolium* (L.) T. Fries. & J. Lange, Fl. Dan. fasc. 49 : 2901. 1877.

Glabrous herb. Flowers rose purple.

*Fl. & Fr.* : July August.

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

Alpine Western Himalaya.

**Epilobium latifolium** L. ssp. *speciosum* (Decne.) Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 349. 1962. *E. speciosum* Decne. in Jacq., Voy. Ind. IV. Bot. 57. t. 69. 1844.

This subspecies has much larger flowers than that of ssp. *latifolium*.

*Fl. & Fr.* : May - September.

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

Western Himalaya and Nepal.

**Epilobium laxum** Royle, Ill. Bot. Himal. Mount. 211. t. 43. f. 2. 1835 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 369. 1962 et in Rech. f. Fl. Iran. 7 : 17. 1964. *E. tetragonum* L. var. *amplectens* Clarke in Hook. f. Fl. Brit. India 2 : 587. 1879. *E. amplectens* (Clarke) Benth. ex Hausskn. Monogr. Epil. 208. 1884.

Stem, quadrangular. Leaves nearly sessile and mostly rounded at the base. Flowers small, rose purple.

*Fl. & Fr.* : June September.

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

Himalaya.

***Epilobium leiophyllum*** Hausskn. in Oesterr. Bot. Zeit. 29 : 52. 1879 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 376. 1962. *E. organifolium* sensu Clarke in Hook. f. Fl. Brit. India 2 : 586. 1879. *p.p.* (non L.).

Herb with hairy lines on the stem. Seeds acuminate.

*Fl. & Fr.* : July September.

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

Alpine Himalaya.

***Epilobium leiospermum*** Haussk. Monogr. Epil. 206. t. 5. f. 45. 1884 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 357. 1962. et in Rech. f. Fl. Iran. 7 : 11. 1964.

Herb. Leaves subcoriaceous. Stigma capitate. Seeds Smooth.

*Fl. & Fr.* : June August.

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

Himalaya.

***Epilobium minutiflorum*** Haussk. Oesterr. Bot. Zeit. 29 : 55. 1879 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 382. 1962 et in Rech. f. Fl. Iran. 7 : 13. 1964. *Epilobium tetragonum* Aitch. var. *minutiflorum* (Hausskn.) Boiss. Fl. Or. Supp. 240. 1880. *E. modestum* Haussk. n. Oesterr. Bot. Zeit. 29. 55. 1879.

Herb. Leaves opposite, serrulate. Ovaries white pubescent.

*Fl. & Fr.* : August.

Lahul and Spiti (BSD).

Himalaya.

***Epilobium palustre*** L. Sp. Pl. : 495. 1753 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 381. 1962. et in Rech. f. Fl. Iran. 7 : 12. 1964.



*E. rhynchocarpum* Boiss. Diagn. Pl. Or. Nov. Ser. 2. 2 : 53. 1856. *E. palustre* var. *typicum* Clarke in Hook. f. Fl. Brit. India 2 : 585. 1879. *E. palustre* var. *majus* and *E. palustre* var. *minimum* Clarke in Hook. f. Fl. Brit. India 2 : 586. 1879.

Glabrous herbs. Leaves and flowers very small.

*Fl. & Fr.* : July September.

Lahul and Spiti (DD).

Western Himalaya.

***Epilobium parviflorum*** Schreb. Spic. Fl. Lips. 146, 155. 1771 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 353. 1962 et in Rech. f. Fl. Iran. 7 : 8. 1964 ; Nair, Fl. Bash. Himal. 116. 1977. *E. parviflorum* var. *vestitum* Clarke in Hook. Fl. Brit. India 2 : 584. 1879. *E. menthoides* Boiss. & Helder. ex Boiss. Diagn. Fl. Or. Nov. Ser. 2. 2 : 53. 1856. *E. parviflorum* Schreb. var. *menthoides* Boiss. Fl. Or. 2 : 747. 1872.

Pubescent herb with fulvous, shaggy, white hairs.

*Fl. & Fr.* : May August.

Simla (DD).

Himalaya.

***Epilobium pseudobscurum*** Haussk. in Oesterr. Bot. Zeit. 29 : 53. 1879 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 380. 1962. *E. roseum* var. *anagallidifolium* Clarke in Hook. f. Fl. Brit. India 2 : 585. 1879.

Hairy herbs. Leaves small. Seeds minutely pubescent.

*Fl. & Fr.* : May August.

Lahul and Spiti (BSD).

Himalaya.

***Epilobium roseum*** Schreb. Spic. Fl. Lips. 146, 155. 1771 ; Clarke in Hook. f. Fl. Brit. India 2 : 584. 1879 ; Nair, Fl. Bash. Himal. 116. 1977.

Hairy herbs. Seeds obovoid.

*Fl. & Fr.* : July - September.

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

Himalaya.

**Epilobium royleanum** Hausskn. in Oesterr. Bot. Zeit. 29 : 55. 1879 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 358. 1962. *E. roseum* var. *dalhousianum* Clarke in Hook. f. Fl. Brit. India 2 : 584. 1879.

Hairy herbs. Seeds narrowly ellipsoid, prominently papillose.

*Fl. & Fr.* : July September.

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

Himalaya.

**Epilobium royleanum** Hausskn. forma **glabrum** Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 361. 1962.

Herb apparently differ from typical form only in the distribution of pubescence.

*Fl. & Fr.* : June August.

Kinnaur (BSD), Kulu (BSD).

Himalaya.

**Epilobium tibetanum** Hausskn., Osterr. Bot. Zeit. 29 : 53. 1879 ; Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 357. 1962 et in Rech. f. Fl. Iran. 7 : 11. 1964. *E. nuristanicum* Rech. f. Symb. Afgh. 4 : 61. 1968. *E. tetragonum* sensu Aitch. in Journ. Linn. Soc. Lond. Bot. 18 : 60. (1880 *p.p.* non L.). *E. cylindricum* sensu Wendelbo in Nytt Mag. Bot. 1 : 46. 1952 (non D. Don). *E. royleanum* sensu Wendelbo loc. cit. 1952 (non Hausskn.).

Herb. Stigma clavate. Seeds smooth.

*Fl. & Fr.* : July September.

Lahul and Spiti (BSD).

Western Himalaya.

**Epilobium williamsii** Raven in Bull. Brit. Mus. Nat. Hist. 2 (12) : 378. 1962.

Herb. Inflorescence glandular pubescent.

Kulu (Raven).

Himalaya.

**Ludwigia octovalvis** (Jacq.) Raven in Kew Bull. 15 : 476. 1962.  
ssp. **sessiliflore** (Micheli) Raven in Kew Bull. 15 : 476. 1962. *Jussiaea octovervia* var. *sessiliflore* Micheli in Martius, Fl. Bras. 13 : 180. 1875. *J. suffruticosa* L. Sp. Pl. 388. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 587. 1879.

Erect herb. Leaves villous. Flowers yellow.

*Fl. & Fr.* : June September.

Kangra (DD).

Himalaya.

**Oenothera berteriana** Spach. in Nouv. Ann. Mus. Par. 4 : 343. 1835.

Erect herb.

*Fl. & Fr.* : May September.

Kulu (DD),

Himalaya.

**Oenothera biennis** L. Sp. Pl. 1 : 346. 1753 ; Raven in Rech. f. Fl. Iran. 7 : 1. 1964.

Erect herb.

*Fl. & Fr.* : August September.

Kulu (BSD).

Himalaya.

**Oenothera rosea** Ait. Hart. Kew. ed. 1. 2 : 3. 1789 ; Nair, Fl. Bash. Himal. 116. 1977.

Erect herb. Flower pink.

*Fl. & Fr.* : April - October.

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

Himalaya.

**Oenothera tetraptera** Cav. Ic. 5 : 40. t. 279. Bailey, Stand. Cycl. Hort. 2 : 2332. 1958.

Cultivated ornamental.

*Fl. & Fr.* : May August.

Simla (DD).

Himalaya.

**Raimannia drummondii** (Hook. f.) Rose in U. S. Dept. Agri. Contriv. Nat. Herb. 8 : 330. 1905 ; Nair, Fl. Bash. Himal. 117. 1977. *Oenothera drummondii* Hook. f. Bot. Mag. t. 3361. 1787.

Erect herb. Flower yellow.

*Fl. & Fr.* : June October.

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

Himalaya.

## TRAPACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Trapa natans** L. var. **bispinosa** (Roxb.) Makino in Linuma Somaku Dzasetzi ed. 3. 1 : 137. 1907. *Trapa bispinosa* Roxb. Hort Beng. 11. 1814 and Pl. Cor. 3 : 29. t. 234. 1815 ; Clarke in Hook. f. Fl. Brit. India 2 : 590. 1879.

Stoloniferous, free floating aquatic herbs. Leaves crowded, rhomboid, dentate, petiole base modified into a spongy float. Fruits oblong with 2 spines, edible.

*Fl. & Fr.* : May October.

Bilaspur (BSD), Sirmur (DD).

Throughout the hotter parts of India.

## PASSIFLORACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Passiflora coerulea** L. Sp. Pl. 959. 1753 ; Bailey, Stand. Cycl. Hort. 3 : 2485. 1950.

*Fl. & Fr.* : May August.

Kulu (DD), Mandi (LWG), Simla (BSIP, LWG).

Cultivated ornamental.

## CUCURBITACEAE

H. J. CHOWDHERY AND B. M. WADHWA B. P. UNIYAL

**Bryonia dioica** Jacqu. Fl. Austr. 2 : t. 199. 1773 : Chakravarty in Rec. Bot. Surv. India 17 (1) : 133. 1959 et Fasc. Fl. India 11 : 14. 1982.

Extensive climber. Leaves punctate, tendrils slender.

Dioecious Flowers bluish yellow.

*Fl. & Fr.* : June - September.

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

Throughout India.

**Citrullus lanatus** (Thunb.) Matsumara & Nakai in Cat. Sem. Hort. Bot. Univ. 1920 : 38. 1920 ; Raghwan et. al. in Rec. Bot. Survey India 21 (2) : 37. 1981 ; Chakravarty in Fasc. Fl. India 11 : 22. 1982. *Citrullus vulgaris* Schrad. Ind. Sem. Gotting. 2. 1833 ; Clarke in Hook. f. Fl. Brit. India 2 : 621. 1879.

Annual climber. Tendrils 2 fid. Leaves ovate. Flowers greenish yellow.

*Fl. & Fr.* : April August.

Una (BSD).

Throughout India.

**Coccinia grandis** (L.) Voigt. Hort. Suburb. Calc. 59. 1845 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 703. 1972. Chakravarty in Fasc. Fl. India 11 : 24. 1982. *Bryonia grandis* L. Mant. 1 : 126. 1767. *Coccinia cordifolia* auct. Chakravarty in Rec. Bot. Surv. India 17 (1) : 117. 1959. *Cephalandra indica* Naud. Ann. Sc. Nat. Ser. 5. 5. : 6 1859 ; Clarke in Hook. f. Fl. Brit. India 2 : 621. 1879. (Excl. Synon.).

Annual or perennial herb. Tendril simple. Flowers white.

*Fl. & Fr.* : April September.

Una (BSD).

Throughout India.

**Cucumis callosus** (Rottl.) Cogn. in Engl. Pflanzenr, 88 : 129. 1924 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 100. 1959 et in Fasc. Fl. India 11 : 31. 1982 ; Nair, Fl. Bash. Himal. 117. 1977. *Bryonia callosa* Rottl. Neue Schrift Ges. Nat. Freunde 24. Berlin 4 : 210. 1803. *C. trigonus* Roxb. Fl. Ind. 3 : 722. 1832 ; Clarke in Hook. f. Fl. Brit. India 2 : 619. 1879.

Perennial scabrous climbing herb. Tendril simple. Leaves suborbicular, 5-7 lobed. Flowers yellow.

*Fl. & Fr.* : August September.

Chamba (DD), Kinnaur (BSD).

Throughout India.

**Cucumis melo** L. Sp. Pl. 1. 11. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 620. 1879 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 102. 1959 et Fasc. Fl. India 11 : 32. 1982.

Annual climbing herb with hirsute stems. Leaves reniform. Flowers yellow. Fruits globose.

*Fl. & Fr.* : July September.

Kulu (DD, RRL).

Throughout India, cultivated.

**Cucumis sativus** L. Sp. Pl. 1012. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 620. 1879 ; Chakravarty in Rec. Bot. Survey India 17 (1) : 105. 1959 et Fasc. Fl. India 11 : 36. 1982 ; Nair, Fl. Bash. Himal. 117. 1977.

Annual climbing herb with hirsute stem. Tendrils simple. Leaves hispid on both sides. Flowers yellow. Fruits oblong, cylindrical.

*Fl. & Fr.* : May - September.

Kinnaur (BSD), Simla (BSD).

Cultivated throughout India.

**Cucurbita maxima** Duch. ex Lam. *Encycl.* 2 : 151. 1786 ; Clarke in Hook. f. *Fl. Brit. India* 2 : 622. 1879 ; Chakravarty in *Rec. Bot. Surv. India* 17 (1) : 123. 1959 et *Fasc. Fl. India* 11 : 40. 1982.

Climber. Tendrils divided. Flowers large, yellow.

Chamba (BSD).

Cultivated as a common gourd.

**Cucurbita pepo** L. *Sp. Pl.* 1010. 1753 ; Clarke in Hook. f. *Fl. Brit. India* 2 : 622. 1879 ; Chakravarty in *Rec. Bot. Surv. India* 17 (1) : 120. 1959. et *Fasc. Fl. India* 11 : 43. 1982 ; Nair, *Fl. Bash. Himal.* 117. 1977.

Climber. Petiole with rigid and pungent hairs. Flowers large, yellow.

*Fl. & Fr.* : June September.

Simla (DD).

Cultivated.

**Diplocyclos palmatus** (L.) Jaffrey in *Kew. Bull.* 15 : 352. 1962 ; Nair, *Fl. Bash. Himal.* 117. 1977 ; Chakravarty in *Fasc. Fl. India* 11 : 48. 1982. *Bryonia palmata* L. *Sp. Pl.* 1012. 1753. *Bryonia laciniosa* auct. (non L.) Clarke in Hook. f. *Fl. Brit. India* 2 : 622. 1879.

Climber. Leaves thin. Tendrils bifid. Flowers yellow.

*Fl. & Fr.* : July October.

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

Throughout India.

**Gynostemma pedata** Blume, *Bijdr.* 23. 1825 ; Clarke in Hook. f. *Fl. Brit. India* 2 : 633. 1879 ; Chakravarty in *Rec. Bot. Surv. India* 17 (1) : 188. 1959 et *Fasc. Fl. India* 11 : 56. 1982.

Climbing herb. Leaves pedately 5-7-foliate, membranous. Tendrils bifid or sometimes simple. Fruits olive green.

Kangra (E, Chakravarty, 1959).

Himalaya, throughout India.

**Herpetospermum pedunculatum** (Ser. ex DC.) Baillon, Hist. Pl. 8 : 445. 1886 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 68. 1959. et Fasc. Fl. India 11 : 59. 1982. *Bryonia pedunculosa* Ser. ex DC. Prodr. 3 : 306. 1828. *H. caudigerum* Wall. ex Clarke in Hook. f. Fl. Brit. India 2 : 613. 1879.

Climber. Tendrils bifid. Flowers bright yellow.

*Fl. & Fr.* : June October.

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

Temperate Himalaya from Himachal Pradesh to Bhutan.

**Lagenaria siceraria** (Molina) Standley in Pub. Field. Mus. Nat. Hist. Bot. Ser. 3 : 435. 1930 ; Chakravarty in Fasc. Fl. India 11 : 65. 1982 *Cucurbita siceraria* Molina, Sagg. Chile 133. 1782. *L. vulgaris* Seringe in Mem. Soc. Phys. Hist. Nat. Geneve 3 (1) : 25. t. 2. 1825 ; Clarke in Hook. f. Fl. Brit. India 2 : 613. 1879. *L. laucantha* (Duch.) Rusby in Mem. Torr. Bot. Club. 6 : 43. 1896 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 66. 1959.

Climbing herb. Tendril 2-3 fid. Flowers white.

Chamba (DD).

Cultivated throughout India.

**Luffa acutangula** (L.) Roxb. var. *amara* (Roxb.) Clarke in Hook. f. Fl. Brit. India 2 : 615. 1879 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 81. 1959. et Fasc. Fl. India 11 : 70. 1982. *Luffa amara* Roxb. Fl. Ind. 3 : 715. 1832.

Climber. Tendrils mostly 3 fid. Flowers yellow.

Kangra (Chakravarty, 1959).

Cultivated.

**Luffa cylindrica** (L.) Roem. Syn. Monogr. 2 : 63. 1846 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 75. 1959 et Fasc. Fl. India 11 : 70. 1982. *Momordica cylindrica* L. Sp. Pl. 1009. 1753. *Luffa aegyptiaca* Mill. Dict. ed Gall. 4 : 500. 1785 ; Clarke in Hook. f. Fl. Brit. India 2 : 614. 1799.

Climbing herb. Leaves 5 lobed, usually glad dotted. Flowers yellow.



Simla (Chakravarty, 1959).

Throughout India.

**Luffa echinata** Roxb. Fl. Ind. 3 : 716. 1832 ; Clarke in Hook. f. Fl. Brit. India 2 : 615. 1879 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 77. 1959 et Fasc. Fl. India 11 : 71. 1982 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 705. 1972.

Climber. Leaves reniform, suborbicular. Fruits densely bristly.

Simla (Chakravarty, 1959).

Throughout India.

**Momordica charantia** L. Sp. Pl. 1009. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 616. 1879 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 81. 1959 et Fasc. Fl. India 11 : 89. 1982.

Climber. Leaves 5 - 7 lobed. Flowers yellow.

Simla (Chakravarty, 1959).

Throughout India.

**Momordica dioica** Roxb. ex Willd. Sp. Pl. 4 : 605. 1805 ; Clarke in Hook. f. Fl. Brit. India 2 : 617. 1879 ; Chakravarty in Fasc. Fl. India 11 : 94. 1982.

Perennial climber. Leaves entire or lobed. Flowers yellow.

*Fl. & Fr.* : July - October.

Una (BSD).

Throughout India.

**Melothria maderaspatana** (L.) Cogn. in DC. Monogr. Phan. 3. 623. 1881 ; Chakravarty in Fasc. Fl. India 11 : 83. 1982. *Cucumis maderaspatana* L. Sp. Pl. 1012. 1753. *Mukia scabrella* (L. f.) Arn. in Hook. f. J. Bot. 3 : 276. 1841 ; Clarke in Hook. f. Fl. Brit. India 2 : 623. 1879.

Scabrous climber. Leaves entire or lobed. Tendril simple. Flowers yellow. Fruits small, globose.

*Fl. & Fr.* : June October.

Kangra (DD).

Throughout India.

**Sechium edule** (Jacqum.) Swartz, Fl. Ind. Occ. 2 : 1150. 1800 ; Fasc. Fl. India 11 : 100. 1982, *Sicos edulis* Jacqum. Enum. Pl. Carib. 32. 1760.

Perennial climber. Tendril 3 5 fid : Leaves hirsute on both sides. Flowers greenish yellow. Fruit echinate, 1 seeded, edible.

*Fl. & Fr.* : September January.

Kangra (DD).

Cultivated for fruits.

**Melothria heterophylla** (Lour.) Cogn. in DC. Monogr. Phan. 3 : 618. 1881 ; Chakravarty in Fasc. Fl. India ,11 : 79. 1982. *Zehneria umbellata* Thw. Enum. Pl. Zeyl. 125. 1853 : Clarke in Hook. f. Fl. Brit. India 2 : 625. 1879.

Perennial climber with simple tendril. Flowers yellow.

*Fl. & Fr.* : May October.

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

Throughout India.

**Trichosanthes anguina** L. Sp. Pl. 1008. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 610. 1879 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 35. 1959 et Fasc. Fl. India 11 : 108. 1982.

Annual climbing herb. Tendril robust, trifid. Fruits long twisted.

Simla (Chakravarty, 1959).

Cultivated.

**Trichosanthes bracteata** (Lam.) Voigt. Cat. Hort. Suburb. Calc. 58. 1845 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 44. 1959 et Fasc. Fl. India 11 : 109. 1982 ; Nair, Fl. Bash. Himal. 118. 1977. *Modecca bracteata* Lam. Encycl. 4 : 210. 1797. *Trichosanthes palmata* Roxb. Fl. Ind. 3 : 704. 1832 ; Clarke in Hook. f. Fl. Brit. India 2 : 606. 1879.

Perennial climber. Tendril 3-fid. Leaves 3-7 lobed. Bracts laciniate. Flowers white. Fruit globose.

*Fl. & Fr.* : May October.

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

Throughout India.

**Trichosanthes cucumerina** L. Sp. Pl. 1008. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 609. 1879 ; Chakravarty, Rec. Bot. Surv. India 17 (1) : 31. 1959 et Fasc. India 11 : 112, 1982 ; Nair, Fl. Bash. Himal. 118. 1977.

Annual climber. Tendrils 3-fid. Flowers white.

*Fl. & Fr.* : August October.

Kinnaur (BSD).

Throughout India.

**Trichosanthes dioica** Roxb. Fl. Ind. ed. 2. 3 : 701. 1832 ; Clarke in Hook. f. Fl. Brit. India 2 : 609. 1879 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 54. 1959 et Fasc. Fl. India 11 : 114. 1982.

Annual, climbing herb. Leaves ovate, triangular, dentate. Tendrils simple. Flowers white. Fruits oblong.

*Fl. & Fr.* : May September.

Kulu (LWG), Mandi (LWG).

Throughout the plains of North India.

**Trichosanthes wallichiana** (Seringe) Wight in Ann. & Mag. Nat. Hist. 8 : 270. 1842 ; Chakravarty in Rec. Bot. Surv. India 17 (1) : 41. 1959 et Fasc. Fl. India 11 : 123. 1982. *Involucraria wallichiana* Ser. in Mem. Soc. Phys. Hist. Nat. Geneva 3 (1) : t. 5. 1825. *Trichosanthes multiloba* Clarke in Hook. f. Fl. Brit. India 2 : 608. 1879 (non Miq.).

Extensive climber. Leaves deeply palmately lobed. Tendrils trifid. Fruits ovoid or oblong, acute at apex.

Simla (Chakravarty 1959).

Himalaya, Himachal Pradesh to Bhutan, Assam.

## BEGONIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Begonia picta** Sm. Exot. Bot. 2 : 81. t. 101. 1804-5 ; Clarke in Hook. f. Fl. Brit. India 2 : 638. 1879 ; Collett, Fl. Siml. 202. 1902 ; Ghazanfar in Fl. West Pakistan 96 : 1. 1976 ; Nair, Fl. Bash. Himal. 118. 1977.

Pubescent herb. Flowers pale rose. Capsule pubescent with one wing much longer than the other.

*Fl. & Fr.* : August - November.

Simla (BSD, DD).

Himalaya, from Himachal Pradesh to Bhutan.

**Begonia tenella** D. Don, Prodr. Fl. Nep. 223. 1825 ; Ghazanfar in Fl. West Pakistan 96 : 3. 1976 ; Nair, Fl. Bash. Himal. 119. 1977.

Succulent herb. Capsule wings nearly equal.

*Fl. & Fr.* : August - October.

Simla (DD).

Himalaya.

## DATISCACEAE

B. P. UNIYAL

**Datisca cannabina** L. Sp. Pl. 1037. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 656. 1879 ; Collett, Fl. Siml. 203. 1902 ; M. A. Siddiqi in Fl. West Pakistan 37 : 1. 1973 ; Nair, Fl. Bash. Himal. 119. 1977.

Tall glabrous herb or shrub. Flowers dioecious, greenish-yellow. Fruit capsule, with numerous minute seeds.

*Fl. & Fr.* : July October.

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

Temperate and subtropical Western Himalaya, Kashmir to Nepal.

## CACTACEAE

B. M. WADHWA AND H. J. CHODHERY

**Opuntia elatior** Mill. Gard. Dict. ed. S. n. 4. 1768 ; Babu, Herb. Fl. D. Dun 207. 1977. *O. dillenii* auct. pl. [non (Ker Gawl.) Haw. 1819] Clarke in Hook. f. Fl. Brit. India 2 : 657. 1879.

Native of South America, naturalized in waste places.

*Fl. & Fr.* : April June.

Kangra (RRL), Kulu (DD).

Planted and naturalized.

## AIZOACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Trianthema portulacastrum** L. Sp. Pl. 223. 1753 ; Nasir in Fl. West Pakistan 41 : 5. 1973 ; Nair, Fl. Bash. Himal. 119. 1977. *T. monogyna* L.

Mant. Pl. 69. 1767 ; Clarke in Hook. f. Fl. Brit. India 2 : 660. 1879. *T. obcordata* Roxb. Hort. Beng. 34. 1814 (nom. nud.) ex Fl. Ind. 2 : 445. 1832.

Glabrous herb. Flowers solitary.

*Fl. & Fr.* : August October.

Simla (BSD), Solan (BSD).

Throughout India.

## MOLLUGINACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Glinus lotoides** L. Sp. Pl. 463. 1753 ; Nasir in Fl. West Pakistan 40 : 1. 1973. *Mollugo hirta* Thunb. Prodr. Fl. Cap. 20. 1784 ; Clarke in Hook. f. Fl. Brit. India 2 : 662. 1879. *M. latoides* (L.) Ktze. Rev. Gen. Pl. 1264. 1891.

Stellately woolly herb. Flowers sessile. Seeds covered with raised tubercular points.

*Fl. & Fr.* : May September.

Kangra (LWG).

Throughout India.

**Mollugo pentaphylla** L. Sp. Pl. 89. 1753 ; Nasir in Fl. West Pakistan 40 : 6. 1973 ; Nair, Fl. Bash. Himal. 119. 1977. *M. stricta* L. Sp. Pl. ed. 2. 131. 1762 ; Clarke in Hook. f. Fl. Brit. India 2 : 663. 1879.

Herb. Leaves whorled. Flowers white, petals absent.

*Fl. & Fr.* : July September.

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

Throughout India.

## APIACEAE

H. J. CHOWDHERY AND B. M. WADHWA

**Anethum graveolens** L. Sp. Pl. 263. 1753 ; Nasir in Fl. W. Pakistan 20 : 111. 1972 ; Nair, Fl. Bash. Himal. 119. 1977. *Peucedanum graveolens* (L.) Benth. in Benth. & Hook. f. Gen. Pl. 919. 1867 ; Clarke in Hook. f. Fl. Brit. India 2 : 709. 1879.

Glabrous herbs. Flowers yellow. Fruits narrowly winged, plano-convex.

*Fl. & Fr.* : April August.

Chamba (BSD), Kangra (RRL), Kinnaur (BSD).

Throughout tropical and subtropical India.

**Angelica glauca** Edgew. in Trans. Linn. Soc. Bot. 20 : 53. 1846 ; Clarke in Hook. f. Fl. Brit. India 2 : 706. 1876 ; Nasir in Fl. W. Pakistan 20 : 124. 1972 ; Nair, Fl. Bash. Himal. 120. 1977.

Glabrous herbs. Flowers purplish-white. Fruits flattened.

*Fl. & Fr.* : August October.

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

Kashmir and Himachal Pradesh.

**Anthriscus nemorosa** (M. Bieb.) Spreng. Pl. Umbell. Prodr. 27. 1813 ; Clarke in Hook. f. Fl. Brit. India 2 : 692. 1879 ; Collett, Fl. Siml. 212. 1902 ; Nasir in Fl. W. Pakistan 20 : 96. 1972 ; Nair, Fl. Bash. Himal. 120. 1977. *Chaerophyllum nemorosum* M. Bieb. Fl. Taur. Cauc. 1 : 232. 1808.

Herbs with hairy stem. Flowers white. Fruits black, glabrous or rough with minute scattered bristles.

*Fl. & Fr.* : May June.

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

Kashmir and Himachal Pradesh.

**Anthriscus sylvestris** (L.) Hoffm. Gen. Umb. 40. 1914 ; Davis, Fl. Turkey 4 : 323. 1972. *Chaerophyllum sylvestris* L. Sp. Pl. 258. 1753 ; Ros-sraig, Draw. Brit. Pl. 12. t. 1958.

Herb. Flowers white.

*Fl. & Fr.* : May September.

Kinnaur (BSD).

Western Himalaya.

**Apium graveolens** L. Sp. Pl. 264. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 679. 1879 ; Nasir in Fl. W. Pakistan 20 : 32. 1972. *Carum graveolens* (L.) K. Pol, Bull. Soc. Nat. Mosc. 29. 1916.

Herbs. Flowers white.

*Fl. & Fr.* : May September.

Chamba (BSD), Mandi (CDRI).

Base of the North-West Himalaya and Nepal.

**Bunium persicum** (Boiss.) Fedtsch. Rastit. Turkestan 612. 1915 ; Wolff. in Engler, Pflanzen. 4. 90 : 198. 1927 ; Nasir in Fl. W. Pakistan 20 : 85. 1972. *Carum persicum* Boiss. in Ann. Sc. Nat. 3. Ser. Bot. 1 : 138. 1844. *C. bulbocastanum* auct. (non. Koch. 1924) ; Clarke in Hook. f. Fl. Brit. India 2 : 681. 1879.

Glabrous herb with tuberous roots. Fruits yellowish-brown.

*Fl. & Fr.* : May July.

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

Kashmir and Himachal Pradesh.

**Bupleurum aitchisonii** (Boiss.) Wolff in Engler, Pflanzenr. 4. 43 : 141. 1910 ; Nasir in Fl. W. Pakistan 20 : 54. 1972. *B. olympicum* var. *aitchisoni* Boiss. Fl. Or. Suppl. 252. 1888.

Decumbent herb. Flowers yellow. Fruit ridges prominent.

*Fl. & Fr.* : July September.



Lahul and Spiti (DD).

Western Himalaya.

**Bupleurum candollii** Wall. ex DC. Prodr. 4 : 131. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 674. 1879 ; Collett, Fl. Siml. 206. 1902 ; Nasir in Fl. W. Pakistan 20 : 52. 1972 ; Nair, Fl. Bash. Himal. 120. 1977.

Glabrous herbs. Flowers yellow. Fruits ovoid with distinct ridges.

*Fl. & Fr.* : May - October.

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

Temperate Himalaya.

**Bupleurum dalhousianum** (Clarke) K-Pol. in Act. Hort. Petrop. 30 : 165. 1915 ; Nasir in Univ. Calif. Publ. Bot. 27 : 432. 1966. *B. longicaule* Wall. ex DC. var. *dalhousiana* Clarke in Hook. f. Fl. Brit. India 2 : 677. 1879.

Herbs. Upper leaves and bracts ovate-lanceolate. Flowers yellow.

*Fl. & Fr.* : June - September.

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

Kashmir and Himachal Pradesh.

**Bupleurum falcatum** L. Sp. Pl. 237. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 676. 1879 ; Collett, Fl. Siml. 209. 1902 ; Nasir in Fl. W. Pakistan 20 : 60. 1972 ; Nair, Fl. Bash. Himal. 120. 1977.

Herbs. Flowers yellow. Fruits brown, oblong, disc yellow or brownish

*Fl. & Fr.* : June - October.

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

Tropical and temperate Himalaya.

**Bupleurum gracillimum** Kl. in Kl. & Garcke, Bot. Ergeb. Reise. Prinz. Wald. Bot. 148. 1862 ; Nasir in Fl. W. Pakistan 20 : 52. 1972. *B. falcatum* L. ssp. *eufalcatum* var. *gracillimum* (Kl.) Wolff in Engler, Pflanzenr. 4. 43. 132. 1910. *B. falcatum* L. var. *nigrocarpum* Jacq. ex Clarke in Hook. f. Fl. Brit. India 2 : 676. 1879, p. p.

Herb. Stem numerous from the crown. Disc prominent on the fruit, purple black.

*Fl. & Fr.* : July September.

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

North-Western Himalaya.

**Bupleurum hamiltonii** Balakr. in Jour. Bomb. Nat. Hist. Soc. 63 : 328. 1967. *B. tenue* Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 182. 1825 *nom-invalid* (non Salisb. 1796) ; Clarke in Hook. f. Fl. Brit. India 2 : 677. 1879 ; Nasir in Fl. W. Pakistan 20 : 55. 1972.

Erect, much branched herbs. Leaves linear oblong. Fruits broadly oblong, yellowish-brown.

*Fl. & Fr.* : August October.

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

Temperate Himalaya.

**Bupleurum hoffmeisteri** Kl. in Kl. & Garcke, Bot. Egeb. Reise. Prinz.-Wald. Bot. 147. 1862 ; Nasir in Fl. W. Pakistan 20 : 59. 1972. *B. falcatum* L. var. *hoffmeisteri* (Kl.) Clarke in Hook. f. Fl. Brit. India 2 : 676. 1879 ; Nair, Fl. Bash. Himal. 120. 1977.

Herbs. Flowers yellow. Carpel ridges very prominent, glaucous.

*Fl. & Fr.* : August September.

Kinnaur (BSD).

Kashmir and Himachal Pradesh.

**Bupleurum jucundum** Kurz. in Seem. Journ. Bot. 5 : 240. 1863 ; Clarke in Hook. f. Fl. Brit. India 2 : 675. 1879 ; Nasir in Fl. W. Pakistan 20 : 51. 1972.

Glabrous herbs with long branches. Fruits elliptic-oblong.

*Fl. & Fr.* : July August.

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

Kashmir and Himachal Pradesh.

**Bupleurum lanceolatum** Wall. ex DC. Prodr. 4 : 132. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 674. 1879 ; Collett, Fl. Siml. 208. 1902 ; Nasir in Fl. West Pakistan 20 : 45. 1972 ; Nair, Fl. Bash. Himal. 121. 1977.

Perennial herbs with spreading branches. Carpels much incurved when ripe.

*Fl. & Fr.* : July October.

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

North Western Himalaya.

**Bupleurum longicaule** Wall. ex DC. Prodr. 4 : 131. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 677. 1879 ; Nasir in Fl. W. Pakistan 20 : 47. 1972 ; Nair, Fl. Bash. Himal. 121. 1977. *B. rupestre* Hed. in Trans. Linn. Soc. 20 : 52. 1851.

Erect herbs. Fruits black.

*Fl. & Fr.* : June October.

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

Temperate Himalaya.

**Bupleurum longicaule** Wall. ex DC. Prodr. 4 : 131. 1830. var. **himalayense** (Kl.) Clarke in Hook. f. Fl. Brit. India 2 : 677. 1879 ; Nasir in Fl. W. Pakistan 20 : 48. 1972. *B. himalayense* Kl. in Kl. et. Gracke, Bot. Ergeb. Reise. Prinz. Wald. Bot. 146. 1862.

Differs from *B. longicaule* in having upper leaves ovate-lanceolate, base amplexicaul, bracteoles 8-10, very broad, imbricate.

*Fl. & Fr.* : May September.

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

Kashmir and Himachal Pradesh.

**Bupleurum maddeni** Clarke in Hook. f. Fl. Brit. India 2 : 678. 1879 ; Collett, Fl. Siml. 209. 1902.

Herbs. Fruits broadly oblong, glaucous.

*Fl. & Fr.* : July - September.

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

North Western Himalaya.

**Bupleurum marginatum** Wall. ex DC. Prodr. 4 : 134. 1830 ; Nasir in Fl. W. Pakistan 20 : 60. 1972. *B. falcatum* L. var. *marginata* (Wall. ex DC.) Clarke in Hook. f. Fl. Brit. India 2 : 676. 1879.

Glabrous herbs with leaf margins prominently cartilaginous.

*Fl. & Fr.* : June - October.

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

Himalaya and Khasi hills.

**Bupleurum marginatum** Wall. ex DC. var. *stenophylla* (Wolff) Chowdhery et Wadhwa comb. nov. *B. falcatum* L. ssp. *marginatum* (Wall. ex DC.) Wolff. var. *stenophylla* Wolff. in Engler, Pflanzenr. 4. 43. 133. 1910.

Herb.

*Fl. & Fr.* : July - August.

Kinnaur (BSD).

Western Himalaya.

**Bupleurum swatianum** Nasir in Uni. Calif. Pub. Bot. 27 : 425. 1954 ; Nasir in Fl. W. Pakistan 20 : 51. 1972. *B. jucundum* Kurz. var. *cachemirica* Clarke in Hook. f. Fl. Brit. India 2 : 675. 1879.

Glabrous herbs with stem corymbose near the top. Umbels without bracts or bracteoles.

*Fl. & Fr.* : July - September.

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

Himachal Pradesh and Kashmir.

**Bupleurum thomsonii** Clarke in Hook. f. Fl. Brit. India 2 : 675. 1879 ; Nasir in Fl. W. Pakistan 20 : 50. 1972.

Glabrous herbs. Fruits oblong, glaucous, 5 winged.

*Fl. & Fr.* : July - October.

Lahul and Spiti (DD).

North - Western Himalaya.

**Carum carvi** L. Sp. Pl, 263. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 680. 1879 *p.p.* ; Nasir in Fl. W. Pakistan 20 : 87. 1972 ; Nair, Fl. Bash. Himal. 121. 1977.

Glabrous herbs. Flowers white. Fruits yellowish brown, almost viscid.

*Fl. & Fr.* : May August.

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

North Western Himalaya.

**Centella asiatica** (L.) Urban. in Mart. & Eichl. Fl. Bras. 11 : 287. 1879 ; Nasir in Fl. W. Pakistan 20 : 10. 1972 ; Nair, Fl. Bash. Himal. 121. 1977. *Hydrocotyle asiatica* L. Sp. Pl. 234. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 669. 1879.

Herbs. Stem prostrate. Leaves kidney shaped. Flowers purplish white.

*Fl. & Fr.* : June August.

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

Throughout India.

**Chaerophyllum acuminatum** Lindl. in Royle, Illustr. Bot. Himal. Mount. 232. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 691. 1879 ; Collett, Fl. Siml. 211. 1902 ; Nasir in Fl. W. Pakistan 20 : 91. 1972 ; Nair, Fl. Bash. Himal. 122. 1977.

Erect herbs with few long white hairs.

*Fl. & Fr.* : June September.

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

North Western Himalaya.

**Chaerophyllum cachemiricum** Clarke in Hook. f. Fl. Brit. India 2 : 691. 1879.

Herbs. Stem hispid having reflexed hairs. Fruits oblong - lanceolate with obscure ridges.

*Fl. & Fr.* : May August.

Chamba (DD).

North Western Himalaya.

**Chaerophyllum capnoides** (Decne.) Benth. in Benth. & Hook. f. Gen. Pl. 1 : 898. 1867 ; Clarke in Hook. f. Fl. Brit. India 2 : 691. 1879 ; Nasir in Fl. W. Pakistan 20 : 88. 1972. *Butina capnoides* Decne. in Jacq. Voy. Bot. 70. t. 80. 1844.

Glabrous herbs with tuberous roots. Fruits oblong lanceolate, black, minutely punctate.

*Fl. & Fr.* : July September.

Chamba (DD).

Kashmir and Himachal Pradesh.

**Chaerophyllum reflexum** Lindl. in Royle, Illustr. Bot. Himal. Mount. 232. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 691. 1879 ; Collett, Fl. Siml. 211. 1902 ; Nasir in Fl. W. Pakistan 20 : 89. 1972 ; Nair, Fl. Bash. Himal. 122. 1977.

Glabrous or very sparsely pilose herbs. Fruits oblong with a thick cylindrical beak. Barren flowers are reflexed after flowering.

*Fl. & Fr.* : May August.

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

North Western Himalaya.

**Chaerophyllum villosum** Wall. ex DC. Prodr. 4 : 225. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 690. 1879 ; Collett, Fl. Siml. 211. 1902 ; Nair, Fl. Bash. Himal. 122. 1977.

Erect herbs with fleshy leaves. Stem covered with long, deflexed, white hairs

*Fl. & Fr.* : June September.

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

Tropical and temperate Himalaya.

**Coriandrum sativum** L. Sp. Pl. 256. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 717. 1879 ; Collett, Fl. Siml, 205. 1902 ; Nasir in Fl. West. Pakistan 20 : 26. 1972 ; Nair, Fl. Bash. Himal. 122. 1977.

Glabrous herbs. Flowers purple white. Fruits sub - globose.

*Fl. & Fr.* : April August.

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

Throughout India. Cultivated.

**Daucus carota** L. Sp. Pl. 242. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 718. 1879 ; Nasir in Fl. W. Pakistan 20 : 103. 1972 ; Nair, Fl. Bash. Himal. 122. 1977.

Hispid herb. Flowers white.

*Fl. & Fr.* : May September.

Simla (BSD).

Cultivated throughout India.

**Eriocyclus caespitosus** (Edgew.) Wolff. in Engler, Pflanz. 4. 90 : 107. 1927. *Petrosiadium caespitosum* Edgew. in Trans. Linn. Soc. 20 : 51. 1846 ; Clarke in Hook. f. Fl. Brit. India 2 : 689. 1879.

Pubescent herbs with short, woody rootstocks. Fruits oblong, very villous when young, glabrescent at maturity, laterally compressed.

*Fl. & Fr.* : July September.

Kinnaur (DD).

North Western Himalaya.

**Eriocyclus nuda** Lindl. in Royle, Ill. Bot. Himal. Mount. 232. 1835 ; Nasir in Fl. W. Pakistan 20 : 75. 1972. *Pituranthos nuda* (Lindl.) Benth. ex Clarke in Hook. f. Fl. Brit. India 2 : 680. 1879.

Herbs. Branches few, upper part leafless. Fruits densely hairy when young.

*Fl. & Fr.* : May August.

Kinnaur (DD).

North - Western Himalaya.

**Eriocycla thomsonii** (Clarke) Wolff. in Engler, pflanzenr. 4 : 90 : 106. 1927 ; Nasir in Fl. W. Pakistan 20 : 75. 1972. *Pituranthos thomsonii* Clarke in Hook. f. Fl. Brit. India 2 : 680. 1879.

Herbs with grey pubescent stems. Fruits laterally much compressed.

*Fl. & Fr.* : June September.

Lahul and Spiti (DD).

Western Tibet and Himachal Pradesh.

**Ferula jaeschkeana** Vatke in Indian Sem. Hort. Berol. Append. 2. 2. 1876 ; Clarke in Hook. f. Fl. Brit. India 2 : 708. 1879 ; Nasir in Fl. W. Pakistan 20 : 157. 1972 ; Nair, Fl. Bash. Himal. 122. 1977.

Erect herbs. Leaves pinnatifid. Flowers yellow. Fruits large, dorsally much compressed.

*Fl. & Fr.* : March August.

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

Kashmir and Himachal Pradesh.

**Heracleum brunonis** (DC.) Benth. in Benth. & Hook. f. Gen. Pl. 1 : 921. 1867 ; Clarke in Hook. f. Fl. Brit. India 2 : 713. 1879 ; Nair, Fl. Bash. Himal. 123. 1977. *Tordyliopsis brunonis* DC. Prodr. 4 : 199. 1830.

Pubescent herbs. Flowers greenish-white to purple. Fruits glabrous, brown.

*Fl. & Fr.* : August September.

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

Temperate Himalaya.

**Heracleum cachemiricum** Clarke in Hook. f. Fl. Brit. India 2 : 712. 1879 ; Collett, Fl. Siml. 214. 1902 ; Nasir in Fl. W. Pakistan 20 : 130. 1972 ; Nair, Fl. Bash. Himal. 123. 1977.

Minutely pubescent herbs. Fruits pubescent with a continuous narrow wing.

*Fl. & Fr.* : May - October.



Chamba (BSD, DD).

Kashmir and Himachal Pradesh.

**Heracleum candicans** Wall. ex DC. Prodr. 4 : 192. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 714. 1879 ; Collett, Fl. Siml. 215. 1902 ; Nasir in Fl. W. Pakistan 20 : 129. 1972 ; Nair, Fl. Bash. Himal. 123. 1977.

Hairy to densely pubescent herbs. Flowers pinkish-white. Fruits pubescent.

*Fl. & Fr.* : June October.

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

North-Western Himalaya.

**Heracleum canescens** Lindl. in Royle, Illust. Bot. Himal. Mount. 232. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 713. 1879 ; Collett, Fl. Siml. 215. 1902 ; Nasir in Fl. W. Pakistan 20 : 130. 1972 ; Nair, Fl. Bash. Himal. 123. 1977. *H. hirsutum* Edgew. in Trans. Linn. Soc. Bot. 20 : 57. 1846.

Pubescent herbs. Leaves thickly white-tomentose. Fruits pubescent, obovate.

*Fl. & Fr.* : May August.

Chamba (DD), Kinnaur (DD).

North Western Himalaya.

**Heracleum pinnatum** Clarke in Hook. f. Fl. Brit. India 2 : 712. 1879 ; Nasir in Fl. W. Pakistan 20 : 131. 1972.

White pubescent herbs. Flowers white. Fruits broadly winged, minutely pubescent.

*Fl. & Fr.* : June September.

Simla (LWG).

Kashmir and Himachal Pradesh.

**Hydrocotyle javanica** Thunb. Dissert. 2 : 415. t. 3. 1800 ; Clarke in Hook. f. Fl. Brit. India 2 : 667. 1879 ; Nasir in Fl. W. Pakistan 20 : 12. 1972.

Prostrate herbs. Flowers white. Fruits very much compressed.

*Fl. & Fr.* : July September.

Chamba (BSD).

Tropical and temperate Himalaya.

**Hydrocotyle sibthorpioides** Lam. *Encycl.* 3 : 153. 1789 ; Nasir in *Fl. W. Pakistan* 20 : 13. 1972. *H. rotundifolia* Roxb. *Fl. Ind.* 2 : 38. 1824; Clarke in *Hook. f. Fl. Brit. India* 2 : 668. 1879.

Prostrate herbs. Fruits broadly orbicular, smooth.

*Fl. & Fr.* : May August.

Kulu (BSD).

North Western Himalaya.

**Ligusticum elatum** Clarke in *Hook. f. Fl. Brit. India* 2 : 698. 1879 ; Collett, *Fl. Siml.* 212. 1902 ; Nasir in *Fl. W. Pakistan* 20 : 123. 1972 ; Nair, *Fl. Bash. Himal.* 123. 1977.

Glabrous, erect herbs. Leaves minutely bristly. Flowers white. Fruits glabrous, flattened.

*Fl. & Fr.* : July October.

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

North-Western Himalaya.

**Ligusticum marginatum** Clarke in *Hook. f. Fl. Brit. India* 2 : 698. 1879 ; Nasir in *Fl. W. Pakistan* 20 : 123. 1972.

Glabrous herbs. Leaves minutely pubescent.

*Fl. & Fr.* : May September.

Simla (DD).

North Western Himalaya.

**Ligusticum thomsonii** Clarke in *Hook. f. Fl. Brit. India* 2 : 698. 1879 ; Nasir in *Fl. W. Pakistan* 20 : 121. 1972.

Glabrous herbs. Bracts white margined, deciduous.

*Fl. & Fr.* : June September.

Lahul and Spiti (BSD, DD).

Western Tibet and Himachal Pradesh.

**Oenanthe javanica** (Bl.) DC. Prodr. 4 : 138. 1830 ; Nasir in Fl. W. Pakistan 20 : 25. 1972. *Sium javanicum* Bl. Bijdr. Fl. Ned. Ind. 15 : 881. 1826. *Oenanthe stolonifera* (Roxb.) Wall. ex DC. Prodr. 4 : 138. 1830; Clarke in Hook. f. Fl. Brit. India 2 : 696. 1879. *Phellandrium stoloniferum* Roxb. Hort. Beng. 21. 1814. *nom. nud.*

Decumbent, glabrous, stoloniferous herbs.

*Fl. & Fr.* : June - September.

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

Northern India from Kashmir to Punjab.

**Osmorhiza aristata** (Thunb.) Makino & Yabe var. *laxa* (Royle) Constance & Shan, Gen. Osmo. Uni. Calif. Pub. Bot. 23 : 130. 1948 ; Nasir in Fl. W. Pakistan 20 : 95. 1972. *O. laxa* Royle, Illust. Bot. Himal. Mount. 233. 1835. *O. claytoni* Clarke in Hook. f. Fl. Brit. India 2 : 690. 1879. *in part.*

Herbs. Leaves pubescent. Flowers white. Fruits linear-oblong.

*Fl. & Fr.* : July - September.

Kinnaur (DD).

North Western Himalaya.

**Peucedanum dhana** Buch. Ham. ex Clarke in Hook. f. Fl. Brit. India 2 : 709. 1879.

Glabrous herbs. Flowers small, yellow.

*Fl. & Fr.* : May - August.

Chamba (BSD).

North - Western India and Nepal.

**Pimpinella acuminata** (Edgew.) Clarke in Hook. f. Fl. Brit. India 2 : 686. 1879 ; Collett, Fl. Siml. 209. 1902 ; Nasir in Fl. W. Pakistan 20 : 67. 1972 ; Nair, Fl. Bash. Himal. 124. 1977. *Reutera acuminata* Edgew. in Trans. Linn. Soc. Bot. 20 : 52. 1846.

Erect herbs. Flowers pubescent, yellow-green. Fruits glabrous.

*Fl. & Fr.* : August October.

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

North Western Himalaya.

**Pimpinella bracteata** Haines. in Journ. As. Soc. Beng. 1919. n. s. 15 : 314. 1920.

Herbs. Umbles compound. Fruits laterally compressed.

*Fl. & Fr.* : May August.

Kulu (BSIP).

North Western Himalaya.

**Pimpinella diversifolia** DC. Prodr. 4 : 122. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 688. 1879 ; Collett, Fl. Siml. 210. 1902 ; Nasir in Fl. W. Pakistan 20 : 64. 1972 ; Nair, Fl. Bash. Himal. 124. 1977.

Pubescent herbs. Flowers white. Fruits pubescent.

*Fl. & Fr.* : June October.

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

Throughout India.

**Pimpinella tenera** Benth. in Benth. & Hook. f. Gen. Pl. 1 : 894. 1867 ; Clarke in Hook. f. Fl. Brit. India 2 : 686. 1879. *Helosciadium tenerum* DC. Prodr. 4 : 105. 1830. *Acronema tenera* (DC.) Edgew. in Trans. Linn. Soc. 20 : 51. 1851.

Herbs with tuberous roots.

*Fl. & Fr.* : May September.

Kulu (BSD).

Temperate and alpine Himalaya.

**Pimpinella tenera** Benth. var. **dissecta** Clarke in Hook. f. Fl. Brit. India 2 : 686. 1879.

Herbs with tuberous roots. Leaves 2 3 pinnate.

*Fl. & Fr.* : May September.

Kulu (BSD).

Temperate and alpine Himalaya.

**Platytaenia lasiocarpa** (Boiss.) Rech. f. & Riedl. ssp. **thomsonii** (Clarke) Rech. f. & Riedl. in Biol. Skr. 13. 4 : 104. 1963 ; Nasir Fl. W. Pakistan 20 : 134. 1972. *Heracleum thomsonii* Clarke in Hook. f. Fl. Brit. India 2 : 711. 1879.

Grey pubescent herbs. Flowers white. Fruits greenish, pubescent.

*Fl. & Fr.* : May August.

Lahul and Spiti (BSD).

Western Himalaya.

**Platytaenia lasiocarpa** (Boiss) Rech. f. & Riedl. ssp. **thomsonii** var. **glabrior** (Clarke) Nasir in Fl. W. Pakistan 20 : 135. 1972. *Heracleum thomsonii* Clarke var. *glabrior* Clarke in Hook. f. Fl. Brit. India 2 : 712. 1879.

Leaves nearly glabrous, acutely serrate.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD, DD).

Temperate and alpine regions in North Western Himalaya.

**Pleurospermum candollei** (DC.) Clarke in Hook. f, Fl. Brit. India 2 : 703. 1879 ; Nasir in Fl. W. Pakistan 20 : 146. 1972 ; Nair, Fl. Bash. Himal. 124. 1977. *Hymenolaena candollei* DC. Prodr. 4 : 245. 1830.

Herbs with thick stem. Leaves oblong, distantly pinnate. Bracts reduced. Fruits ellipsoid, narrowly winged.

*Fl. & Fr.* : July September.

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

Temperate and alpine regions of North Western Himalaya.

**Pleurospermum hookeri** Clarke var. **thomsoni** Clarke in Hook. f. Fl. Brit. India 2 : 705. 1879.

Differs from *P. hookeri* in having smaller, narrowly lanceolate, white margined bracteoles.

*Fl. & Fr.* : May August.

Lahul and Spiti (BSD).

Western Tibet and Himachal Pradesh.

**Pleurospermum stellatum** (D. Don) Benth. in Benth. & Hook. f. Gen. Pl. 1 : 915. 1867 ; Clarke in Hook. f. Fl. Brit. India 2 : 704. 1879 ; Nair, Fl. Bash. Himal. 125. 1977. *Selinum stellatum* D. Don, Prodr. Fl. Nep. 185. 1825.

Herbs. Petals sometimes persistent. Fruits dorsally compressed.

*Fl. & Fr.* : June -October.

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

Alpine regions in North - Western Himalaya.

**Pleurospermum stellatum** (D. Don) Benth. & Hook. f. Gen. Pl. 1 : 915. 1867. var. **lindleyana** (Kl.) Clarke in Hook. f. Fl. Brit. India 2 : 705. 1879 ; Nasir in Fl. W. Pakistan 20 : 144. 1972. *Hymenolaena lindleyana* Kl. in Reise Pr. Walden. Bot. 150. t. 49. 1862.

Ultimate segments of the leaflets not mucronate.

*Fr. & Fl.* : July September,

Lahul and Spiti (BSD, DD).

Alpine regions in Western Himalaya.

**Pleurospermum stylosum** Clarke in Hook. f. Fl. Brit. India 2 : 704. 1879 ; Nasir in Fl. W. Pakistan 20 : 147. 1972. *P. pulchrum* Alch. & Hemsl. in Journ. Linn. Soc. Bot. 18 : 63. 1880.

Erect herbs. Leaves 2 pinnate. Fruits slightly longer than broad.

*Fl. & Fr.* : June September.

Lahul and Spiti (DD).

Kashmir and Himachal Pradesh.

**Pleurospermum stylosum** Clarke in Hook. f. Fl. Brit. India 2 : 704. 1879 ; Nasir in Fl. W. Pakistan 20 : 147. 1972. *P. pulchrum* Aitch. & Hemsl. in Journ. Linn. Soc. Bot. 18 : 63. 1880.

Erect herbs. Leaves 2 - pinnate. Fruits slightly longer than broad.

*Fl. & Fr.* : June September.

Lahul and Spiti (DD).

Kashmir and Himachal Pradesh.

**Psammogeton biternatum** Edgew. in Trans. Linn. Soc. 20 : 57. 1847 ; Nasir in Fl. W. Pakistan 20 : 101. 1972. *P. canescens* DC. ssp. *biternatus* (Edgew.) Wag. in Ber. Deutsch. Bot. Ges. 69 : 233. 1946.

Herbs with pubescent or grey subtomentose stem. Fruits lanceolate, thinly hairy.

*Fl. & Fr.* : April August.

Kangra (DD).

Punjab plains and foot hills of Himalaya.

**Psammogeton canescens** (DC.) Vatke in App. Ind. Sem. Hort. Berol. 3. 1876. *Athamantha canescens* DC. Prodr. 4 : 155. 1830.

Pubescent herbs. Flowers white to rose coloured.

*Fl. & Fr.* : May September.

Kulu (CDRI).

North Western Himalaya.

**Pycnocycla glauca** Lindl. in Royle, Ill. Bot. Himal. Mount. 232. t. 51. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 694. 1879 ; Nasir in Fl. W. Pakistan 20 : 20. 1972. (*in nota*).

Herbs. Flowers white with reddish midrib, hairy.

*Fl. & Fr.* : May August.

Chamba (DD).

North Western India.

**Sanicula elata** Buch. Ham. ex D. Don, Prodr. Fl. Nepal. 183. 1825 ; Nasir in Fl. W. Pakistan 20 : 13. 1972 ; Nair, Fl. Bash. Himal. 125. 1977. *S. europaea* auct. (non L.) Clarke in Hook. f. Fl. Brit. India 2 : 670. 1879 ; Collett, Fl. Siml. 207. 1902.

Glabrous erect herbs. Flowers white. Fruits densely covered with hooked bristles.

*Fl. & Fr.* : June September.

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

Himalaya.

**Scandix pecten - veneris** L. Sp. Pl. 256. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 692. 1879 ; Nasir in Fl. W. Pakistan 20 : 94. 1972.

Herbs with glabrous or pilose stem and leaves. Flowers white. Fruits oblong, laterally compressed.

*Fl. & Fr.* : May September.

Kulu (DD).

Western Himalaya.

**Selinum candollii** DC. Prodr. 4 : 165. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 700. 1879 ; Nasir in Fl. W. Pakistan 20 : 117. 1972 ; Nair, Fl. Bash. Himal. 125. 1977.

Herbs. Leaves elliptic. Fruit dorsally compressed, subquadrate.

*Fl. & Fr.* : August September.

Kinnaur (DD), Kulu (DD).

Himalaya.

**Selinum elatum** (Edgew.) Hire. Umbellif. Asia 1 : 154. 1958. *Orecome elata* Edgew. in Trans. Linn. Soc. 20 : 54. 1846. *Selinum wallichianum* (DC.) Raizada et Saxena var. *elata* (Clarke) Raizada et Saxena Fl. Muss. 275. 1978. *S. tenuifolium* var. *elata* (Edgew) Clarke in Hook. f. Fl. Brit. India 2 : 730. 1879.

Herbs, quaternary pinnae broad elliptic. Fruits dorsally much compressed.

*Fl. & Fr.* : July September.

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

North Western Himalaya.

**Selinum filicifolium** (Edgew.) Nasir in Fl. W. Pakistan 20 : 119. 1972. *Orecome filicifolia* Edgew. in Trans. Linn. Soc. Bot. 20 : 55. 1846. *Selinum tenuifolium* Wall. ex DC. var. *filicifolia* (Edgew.) Clarke in Hook. f. Fl. Brit. India 2 : 700. 1879.

Herbs. Quaternary pinnae pinnatifid into more lobes.

*Fl. & Fr.* : July September.

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

North Western Himalaya.



**Selinum papyraceum** Clarke in Hook. f. Fl. Brit. India 2 : 701. 1879 ; Nasir in Fl. W. Pakistan 20 : 117. 1972 ; Nair, Fl. Bash. Himal. 125. 1977.

Herbs. Fruits often longer than the umbellule.

*Fl. & Fr.* : July September.

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

Himalaya.

**Selinum vaginatum** (Edgew.) Clarke in Hook. f. Fl. Brit. India 2 : 700. 1879 ; Collett, Fl. Siml. 213. 1902 ; Nasir in Fl. W. Pakistan 20 : 116. 1972 ; Nair, Fl. Bash. Himal. 126. 1977. *Cortia vaginata* Edgew. in Trans. Linn. Soc. 20 : 55. 1846.

Glabrous, erect herbs. Fruits subquadrate, longer than broad.

*Fl. & Fr.* : June October.

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

North Western Himalaya.

**Selinum wallichianum** (DC.) Raizada et Saxena in Ind. Fore. 92 : 323. 1966. *Peucedanum Wallichianum* DC. Prodr. 4 : 181. 1830. *Selinum tenuifolium* Wall. ex DC. Prodr. 4 : 181. 1830 (non Salisb. 1796) ; Clarke in Hook. f. Fl. Brit. India 2 : 700. 1879 ; Collett, Fl. Siml. 213. 1902 ; Nair, Fl. Bash. Himal. 125. 1977. *S. candolli* Edgew. in Trans. Linn. Soc. 20 : 55. 1846 (non DC. 1830).

Tall herbs. Lower leaves long, up to 30 cm glabrous or pubescent. Bracteoles white margined. Fruits dorsally compressed.

*Fl. & Fr.* : June October.

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

Himalaya.

**Seseli libanotis** (L.) W. Koch, Nova Acta Acad. Leop. Carol. 12. 1 : 111. 1824 ; Nasir in Fl. W. Pakistan 20 : 76. 1972. *Athamantha libanotis* L. Sp. Pl. 244. 1753. *Seseli sibiricum* Riuct (non Linn.) Clarke in Hook. f. Fl. Brit. India 2 : 693. 1879.

Minutely pubescent or nearly glabrous herbs. Young fruits densely villous.

*Fl. & Fr.* : August September.

Chamba (BSD, DD).

Western Himalaya and Western Tibet.

**Sium latijugum** Clarke in Hook. f. Fl. Brit. India 2 : 683. 1879 ; Nasir in Fl. W. Pakistan 20 : 24. 1972 ; Nair, Fl. Bash. Himal. 126. 1977.

Glabrous herbs. Flowers white. Fruits elliptic.

*Fl. & Fr.* : July August.

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

Kishmir and Himachal Pradesh.

**Torilis japonica** (Houtt.) DC. Prodr. 4 : 219. 1830 ; Nasir in Fl. W. Pakistan 20 : 106. 1972 ; Nair, Fl. Bash. Himal. 126. 1977. *Caucalis japonica* Houtt. Nat. Hist. 26 : 42. 1977. *Torilis anthriscus* (L.) Gmel, Fl. Bad. 1 : 615. 1805 (non Gaertn.). *Caucalis anthriscus* (L.) Clarke in Hook. f. Fl. Brit. India 2 : 718. 1879. (non Scop. ).

Hairy, pubescent herbs. Flowers white to pale pink. Fruits covered with hooked bristles.

*Fl. & Fr.* : May October.

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

Himalaya.

**Torilis leptophylla** (L.) Reichb. f. in Icon. Fl. Germ. 21 : 169. 2010. 1866 ; Nasir in Fl. W. Pakistan 20 : 105. 1972. *Caucalis leptophylla* L. Sp. Pl. 347. 1753 ; Clarke in Hook. f. Fl. Brit. India 2 : 719. 1879.

Hispid herbs. Leaves finely cut. Fruits large with long bristles.

*Fl. & Fr.* : July August.

Simla (BSD).

Kashmir and Himachal Pradesh.

**Trachydium roylei** Lindl. in Royle, Ill. Bot. Himal. Mount. 233. 1835 ; Clarke in Hook. f. Fl. Brit. India 2 : 672. 1879 ; Nasir in Fl. W. Pakistan 20 : 141. 1972.

Herbs with grooved and often hollow stem. Fruits ellipsoid, narrowed upward.

*Fl. & Fr.* : June August.

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

North Western Himalaya and Western Tibet.

**Trachyspermum ammi** (L.) Sprague in Kew Bull. 1929 : 228. 1929 ; Nasir in Fl. W. Pakistan 20 : 72. 1972. *Sison ammi* L. Sp. Pl. 252. 1753. *T. copticum* (L.) Link Enum. Hort. Berol. 1 : 267. 1821. *Ammi copticum* L. Mant. Pl. 36. 1967. *Carum copticum* (L.) Clarke in Benth. & Hook. f. Gen. Pl. 1 : 891. 1867 et Hook. f. Fl. Brit. India 2 : 682. 1879.

Minutely pubescent herbs. Fruits muricate, subhispid.

*Fl. & Fr.* : June September.

Chamba (BSD).

Cultivated.

**Trachyspermum anethifolium** (D. Don) H. Wolff. in Engler, Pflanzenreich 90. 1927. *Pimpinella anethifolia* D. Don, Prodr. Fl. Nep. 184. 1825. *Carum anethifolium* Benth. & Hook. f. Gen. Pl. 1 : 891. 1867 ; Clarke in Hook. Fl. Brit. India 2 : 683. 1879.

Pubescent herbs with fusiform roots. Young fruits very pubescent.

*Fl. & Fr.* : May August.

Chamba (DD).

Himalaya.

**Turgenia latifolia** (L.) Hoffm. Gen. Umb. ed. 1. 59. 1814 ; Nasir in Fl. W. Pakistan 20 : 109. 1972 ; Nair, Fl. Bash. Himal. 126. 1977. *Tordylium latifolium* L. Sp. Pl. 240. 1753. *Caucalis latifolia* (L.) L. Syst. ed. 12. 1205. 1768 ; Clarke in Hook. f. Fl. Brit. India 2 : 719. 1879.

Scabrid or hispid herbs. Bracts and bracteoles small, oblong, white, membranous.

*Fl. & Fr.* : May - September.

Kinnaur (BSD).

Western Himalaya.

**Vicatia conifolia** DC. Prodr. 4 : 243. 1830 ; Clarke in Hook. f. Fl. Brit. India 2 : 671. 1879 ; Nasir in Fl. W. Pakistan 20 : 37. 1972 ; Nair, Fl. Bash. Himal. 127. 1977. *V. millefolia* (Kl.) Clarke in Hook. f. Fl. Brit. India 2 : 671. 1879. *Caerophyllum millefolium* Kl. in Reis. Prinz. Waldem. 149. t. 45. 1862.

Glabrous herbs. Flowers dark red. Fruit ovoid.

*Fl. & Fr.* : May August.

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

Himalaya.

## ARALIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Aralia cachemirica** Decne. in Jacq. Voy. Bot. 4 : 72. t. 81. 1844 ; Brandis, For. Fl. N. W. & Cent. India 248. 1874 ; Clarke in Hook. f. Fl. Brit. India 2 : 722. 1879 ; Gazanfar in Fl. West Pakistan 86 : 4. 1975 ; Nair, Fl. Bash, Himal. 127. 1977. *A. macrophylla* Lindl. in Bot. Reg. Misc. 73. 1844.

Erect shrub. Flowers white or yellowish white. Fruits ribbed on the back.

*Fl. & Fr.* : August September,

Chamba (DD), Kinnaur (BSD).

Temperate Himalaya.

**Hedera nepalensis** K. Koch, Hort. Dendrol. 284. t. 75. 1853 ; Ghazanfar in Fl. West Pakistan 86 : 3. 1975 ; Nair, Fl. Bash. Himal. 127. 1977. *H. himalaica* Tobler, Gatt. Hedera 67. 1912. *H. helix* auct (non. L.) Clarke in Hook. f. Fl. Brit. India 2 : 739. 1879 ; Brandis, Fl. N. W. & Cent. India 248. 1874.

Shrubs, climbing by aerial rootlets. Flowers yellow green. Fruits black sometimes yellow.

*Fl. & Fr.* : June November.

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

Throughout Himalaya.

**Pentapanax parasiticum** (Buch. Ham. ex D. Don) Seem. in Journ. Bot. 2 : 296. 1864 ; Clarke in Hook. f. Fl. Brit. India 2 : 724. 1879. *Hedera parasitica* Buch. Ham. ex D. Don, Prodr. Fl. Nepal 188. 1825.

Scandent shrub.

*Fl. & Fr.* : July October.

Kangra (DD).

Himalaya.

**Schefflera venulosa** (Wight & Arn.) Harms in Engl. & Prantel, Pflanzenfam. 3 (8) : 39. 1894 ; Clarke in Hook. f. Fl. Brit. India 2 : 729. 1879. *Paratropia venulosa* Wight & Arn. Prodr. Ind. Or. 377. 1834. *Schefflera benghalensis* Gamble, Kew Bull. 1919. 229. 1919 ; Ghazanfar in Fl. West Pakistan 86 : 4. 1975.

Small, glabrous tree or climbing shrub.

*Fl. & Fr.* : January May.

Chamba (DD), Kinnaur (DD), Kulu (LWG),

Throughout tropical and sub tropical India.

## CORNACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Cornus capitata** Wall. in Roxb. Fl. Ind. ed. Carey 1 : 434. 1820 ; Clarke in Hook. f. Fl. Brit. India 2 : 745 1879 ; Collett, Fl. Siml. 220. 1902 ; Parker, For. Fl. Punjab ed. 3 : 265. 1956 ; S. Ghazanfar in Fl. West Pakistan 88 : 3. 1975. *Dendrobenthamia capitata* (Wall.) Hutch. in Ann. Bot. n. s. 6 : 93. 1942.

Small trees. Leaves minutely hairy. Flowers minute, pale - yellow. Drupes very small, yellow with red tinge.

*Fl. & Fr.* : June - October.

Kinnaur (DD), Simla (DD), Solan (RRL).

Throughout the Himalaya.

**Cornus macrophylla** Wall. in Roxb. Fl. Ind. ed. Carey 1 : 433. 1820 ; Clarke in Hook. f. Fl. Brit. India 2 : 744. 1879 ; Collett, Fl. Siml. 219. 1902 ; Parker, For. Fl. Punj. ed. 3 : 265. 1956 ; S. Ghazanfar in Fl. West Pakistan 88 : 3. 1975.

Trees. Flowers pale to yellowish white. Fruits globose, black, pubescent.

*Fr. & Fl.* : May - October.

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

Throughout the Himalaya.

**Cornus oblonga** Wall. in Roxb. Fl. Ind. ed. Carey 1 : 432. 1820 ; Clarke in Hook. f. Fl. Brit. India 2 : 744. 1879 ; Collett, Fl. Siml. 220. 1902 ; Parker, For. Fl. Punj. ed. 3 : 264. 1956 ; S. Ghazanfar in Fl. West Pakistan 88 : 4. 1975.

Shrub or small trees. Flowers pale to yellowish white. Drupe glabrous.

*Fl. & Fr.* : August - November.

Kulu (DD), Simla (DD).

Western and Central Himalaya.

## ALANGIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

**Alangium chinense** (Lour.) Harms in Ber. Deutsch Bot. Ges. 15 : 24. 1897 ; Abdul Ghafoor in Fl. West. Pakistan 50 1 : 1973 ; Nair, Fl. Bash. Himal. 127. 1977. *Stylidium chinense* Lour. Fl. Cochinch. 1 : 221. 1790.

*Marlea begoniaefolia* Roxb. Pl. Corom. 3 : 80. t. 283. 1820 ; Clarke in Hook. f. Fl. Brit. India 2 : 743. 1879. *p. p.* ; Collett, Fl. Siml. 218. 1902 ; Parker, For. Fl. Punj. ed. 3. 265. 1956.

Tree. Flowers in dichotomous, 8 - 12 - flowered cymes, white, hairy.

*Fl. & Fr.* : May - August.

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

Himalaya.

### CAPRIFOLIACEAE

B. M. WADHWA AND H. J. CHOWDHERY

*Abelia triflora* R. Br. ex Wall. Pl. Asiat. Rar. 1 : 14. t. 15. 1830 ; Clarke in Hook. f. Fl. Brit. India 3 : 9. 1880 ; Collett, Fl. Siml. 222. 1902 ; Parker, For. Fl. Punj. ed. 3. 268. 1956. *Zabelia triflora* (R. Br. ex Wall.) Makino in Makinoa 9 : 175. 1948 ; Nair, Fl. Bash. Himal. 131. 1977.

Shrub. Leaves lanceolate, entire. Flowers white, calyx lobe linear, persistent, hairy.

*Fl. & Fr.* : July - October.

Chamba (BSD).

Temperate Himalaya.

*Leycesteria formosa* Wall. in Roxb. Fl. Ind. ed Carey, 2 : 181. 1824 ; Clarke in Hook. f. Fl. Brit. India 3 : 16. 1880 ; Collett, Fl. Siml. 225. 1902 ; Parker, For. Fl. Punjab ed. 3. 274. 1956, Nair, Fl. Bash. Himal. 129. 1977.

Shrubs with hollow stems. Leaves ovate - lanceolate, entire. Flowers white with prominent red bracts.

*Fl. & Fr.* : May - November.

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

Temperate Himalaya.

**Lonicera angustifolia** Wall. ex DC. Prodr. 4 : 337. 1830 ; Clarke in Hook. f. Fl. Brit. India 3 : 13. 1880 ; Collett, Fl. Siml. 224. 1902 ; Parker, For. Fl. Punj. ed. 3. 272. 1956 ; Nair, Fl. Bash. Himal. 128. 1977.

Shrub. Leaves lanceolate. Flowers white, pale rose. Fruits red.

*Fl. & Fr.* : April - July.

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

Temperate Himalaya.

**Lonicera asperifolia** (Decne.) Hook. f. & Thom. in Journ. Linn Soc. Bot. 2 : 166. 1858 ; Clarke in Hook. f. Fl. Brit. India 3 : 11. 1880 ; Parker, For. Fl. Punj. ed. 3. 270. 1956. *Xylosteum asperifolium* Decne. in Jacqum. Voy. Ind. 4 : 77. t. 85. 1843.

Dwarf shrub. Leaves ovate oblong. Flowers yellow with prominent bracts. Fruits orange.

*Fl. & Fr.* : June August.

Lahul and Spiti (BSD, DD).

Western Himalaya.

**Lonicera govaniiana** Wall. ex DC. Prodr. 4 : 337. 1830. *L. discolor* Lindl. in Bot. Reg. 33 : t. 44. 1847 ; Nair, Fl. Bash. Himal. 128. 1977. *L. orientalis* Hook. f. & Thom. var. *discolor* Clarke in Hook. f. Fl. Brit. India 3 : 15. 1880 ; Parker, For. Fl. Punj. ed. 3. 273. 1956.

Shrub. Leaves ovate - elliptic, glaucous beneath.

*Fl. & Fr.* : June - August.

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

Kashmir and Himachal Pradesh to Bhutan.

**Lonicera heterophylla** Decne. in Jacq. Voy. Bot. Ind. 4 : 80. t. 88. 1843 ; Clarke in Hook. f. Fl. Brit. India 3 : 15. 1880 ; Stewart, Ann. Cat. Vas. Pl. W. Pak. & Kash. 692. 1972.

Shrubs. Leaves obovate - oblong, glabrous. Flowers paired. Fruits red.

*Fl. & Fr.* : July - August.

Lahul and Spiti (BSD, DD).



## Alpine Western Himalaya.

**Lonicera hypoleuca** Decne. in Jacq. Voy. Bot. Ind. 4 : 81. t. 89. 1843 ; Clarke in Hook. f. Fl. Brit. India 3 : 14. 1880 ; Parker, For. Fl. Punj. ed. 3. 272. 1956.

Shrub. Leaves ovate, obtuse, white beneath. Flowers in pairs, on small axillary peduncles, yellow. Fruits red.

*Fl. & Fr.* : June September.

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

## North-Western Himalaya and Nepal.

**Lonicera myrtillus** Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 168. 1858 ; Nair, Fl. Bash. Himal. 129. 1977. *L. parvifolia* Edgew. var. *myrtillus* Clarke in Hook. f. Fl. Brit. India 3 : 13. 1880.

Dwarf shrub. Leaves small, oblong. Flowers white or pale-yellow, on short peduncles. Fruits red.

*Fl. & Fr.* : May August.

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

## North - Western Himalaya.

**Lonicera obovata** Royle ex Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 169. 1858 ; Clarke in Hook. f. Fl. Brit. India 3 : 14. 1880 ; Parker, For. Fl. Punj. ed. 3. 272. 1956 ; Nair, Fl. Bash. Himal. 128. 1977.

Shrub. Leaves small, obovate. Flowers peduncled, creamy, with linear bracts. Fruits bluish-black.

*Fl. & Fr.* : May August.

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

## Temperate Himalaya.

**Lonicera orientalis** Lamk. Encycl. 1 : 731. 1783 ; Clarke in Hook. f. Fl. Brit. India 3 : 15. 1880 ; Parker, For. Fl. Punj. ed. 3. 273. 1956.

Shrub or small tree. Leaves ovate-lanceolate, acute, pubescent. Flowers pink. Fruits black.

*Fl. & Fr.* : May September.

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

Temperate Himalaya.

**Lonicera purpurascens** (Decne.) Walp. Rep. Bot. Syst. 2 : 449. 1843 ; Clarke in Hook. f. Fl. Brit. India 3 : 12. 1880 ; Collett, Fl. Siml. 224. 1902 ; Parker, For. Fl. Punj. ed. 3. 272. 1956 ; Nair, Fl. Bash. Himal. 129. 1977. *Xylosteum purpurascens* Decne. in Jacq. Voy. Bot. Ind. 4 : 79. t. 87. 1843.

Shrub. Leaves elliptic oblong, lanceolate. Corolla dull purple in the upper half white below. Fruit red.

*Fl. & Fr.* : May September.

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

Sub-alpine Himalaya.

**Lonicera quinquelocularis** Hardw. in Asiat. Res. 6 : 351. 1799 ; Clarke in Hook. f. Fl. Brit. India 3 : 14. 1880, Collett, Fl. Siml. 225. 1902; Parker, For. Fl. Punjab ed. 3. 274. 1956 ; Nair, Fl. Bash. Himal. 129. 1977.

Shrub. Leaves ovate elliptic, acute, sometimes obtuse. Flowers in axillary pairs, creamy. Fruits white.

*Fl. & Fr.* : April - September.

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

Temperate Himalaya.

**Lonicera semenovii** Regel. Hort. Petrop. 5 : 608. 1879 ; Wendelbo in Rech. Fl. Iran. 10 : 11. 1965. *L. glauca* (non Hill) Hook. f. & Thoms. in Journ. Linn. Soc. Bot. 2 : 166. 1858 ; Clarke in Hook. f. Fl. Brit. India 3 : 11. 1880 ; Parker, For. Fl. Punj. ed. 3. 270. 1956.

Shrub or under shrub. Leaves oblong - lanceolate with recurved margins. Flowers yellow with foliaceous bracts. Fruits red.

*Fl. & Fr.* : June - July.

Lahul and Spiti (BSD, DD).

Temperate North Western Himalaya.

**Lonicera spinosa** (Decne.) Walp. Repert. Bot. Syst. 2 : 449. 1843 ; Clarke in Hook. f. Fl. Brit. India 3 : 13. 1880 ; Parker, For. Fl. Punj. ed. 3. 271. 1956 ; Nair, Fl. Bash. Himal. 129. 1977. *Xylosteum spinosum* Decne. in Jacq. Voy. Bot. Ind. 4 : 78. t. 86. 1843.

Shrub. Leaves narrow, oblong with recurved margins. Flowers white.

*Fl. & Fr.* : June August.

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

Alpine Himalaya.

**Lonicera vaccinioides** Rehder in Fedd. Reper. 6 : 272. 1909 ; Stewart, Ann. Cata. Vas. Pl. W. Pak. & Kash. 694. 1972. *L. hispida* Pall. ex-Roem et Schult Sys. 5 : 258. 1819 ; Clarke in Hook. f. Fl. Brit. India 3 : 11. 1889 ; Parker, For. Fl. Punj. ed. 3. 270. 1956.

Shrub. Leaves densely hairy below. Flowers yellowish with foliaceous bracts.

*Fl. & Fr.* : May August.

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

Temperate and alpine Himalaya.

**Lonicera webbiana** Wall. ex DC. Prodr. 4 : 336. 1830 ; H. Hara in Fl. E. Himal. 2 : 127. 1971. *L. alpigena* auct (non. L.) Clarke in Hook. f. Fl. Brit. India 3 : 15. 1880 ; Collett, Fl. Siml. 225. 1902 ; Parker, For. Fl. Punjab ed. 3. 273. 1956 ; Nair, Fl. Bash. Himal. 128. 1977.

Shrub. Leaves elliptic, acute or acuminate, pilose in the undersurface. Flowers pink. Fruit red.

*Fl. & Fr.* : April July.

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

North Western Himalaya.

**Sambucus nigra** L. Sp. Pl. 269. 1753 ; Parker, For. Fl. Punj. ed. 3. 275. 1956 ; Wendelbo in Rech. f. Fl. Iran. 10 : 1. 1965 ; Nair, Fl. Bash. Himal. 130. 1977.

Shrub. Leaflets elliptic ovate, dentate. Flowers white.

*Fl. & Fr.* : May September.

Kinnaur (BSD).

North: Western Himalaya.

**Sambucus wightiana** Wall. ex Wight & Arn. Prodr. Fl. Ind. Or. 1. 388. 1834 ; Wendelbo in Rech. f. Fl. Iran. 10. 2. 1965. *S. cebulus* (non L.) Clarke in Hook. f. Fl. Brit. India 3 : 2. 1880 ; Parker, For. Fl. Punj. ed. 3. 275. 1956.

Herb or shrub. Flowers white.

*Fl. & Fr.* : July September.

Chamba (BSD), Kulu (BSIP).

Western Himalaya.

**Viburnum cotinifolium** D. Don, Prodr. Fl. Nep. 141. 1825 ; Clarke in Hook. f. Fl. Brit. India 3 : 3. 1880 ; Collett, Fl. Siml. 221. 1902 ; Parker, For. Fl. Punj. ed 3. 266. 1956 ; Nair, Fl. Bash. Himal. 130. 1977.

Small tree. Leaves ovate-elliptic, entire, tomentose. Flowers white with reddish tinge.

*Fl. & Fr.* : April September.

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

North - Western Himalaya upto Bhutan.

**Viburnum cylindricum** Buch. Ham. ex D. Don, Prodr. Fl. Nep. 142. 1825. *V. coriaceum* Bl. Bijl. 656. 1826 ; Clarke in Hook. f. Fl. Brit. India 3 : 5. 1880 ; Collett, Fl. Siml. 222. 1902 ; Parker, For. Fl. Punj. ed. 3. 267. 1956 ; Nair, Fl. Bash. Himal. 130. 1977.

Small tree. Leaves oblong - lanceolate. Flowers greenish-white.

*Fl. & Fr.* : July October.

Chamba (DD), Simla (DD).

Temperate Himalaya.

**Viburnum foetens** Decne. in Jacq. Voy. Bot. Ind. 4 : 75. t. 84. 1843 ; Clarke in Hook. f. Fl. Brit. India 3 : 8. 1880 ; Wendelbo in Rech. f. Fl. Iran. 10 : 3. 1965.

Shrub or small tree. Leaves elliptic, dentate. Flowers pinkish-white or pink. Fruits edible.

*Fl. & Fr.* : April July.

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

Kashmir and Himachal Pradesh.

**Viburnum mullaha** Buch. Ham. ex D. Don, Prodr. Fl. Nep. 141. 1825 ; Nair, Fl. Bash. Himal. 130. 1977. *V. stellulatum* Wall. Pl. As. Rar. 2 : 54. t. 169. 1831 ; Clarke in Hook. f. Fl. Brit. India 3 : 4. 1880 ; Collett, Fl. Siml. 222 : 1902 ; Parker, For. Fl. Punj. ed. 3. 260. 1956.

Shrub or small tree. Leaves ovate-lanceolate, toothed. Flowers white.

*Fl. & Fr.* : May October.

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

Temperate Himalaya.

**Viburnum mullaha** Buch. - Ham. ex D. Don var. **glabrescens** (Clarke) Kitamura in Fauna and Fl. Nep. Himal. 235. 1955. *Viburnum stellulatum* Wall. var. *glabrescens* Clarke in Hook. f. Fl. Brit. India 3 : 4. 1880.

Leaves glabrescent. Corymbs with a few scattered hairs.

*Fl. & Fr.* : June September.

Kinnaur (DD).

Temperate Himalaya.

**Viburnum nervosum** D. Don, Prodr. Fl. Nep. 141. 1825 ; Clarke in Hook. f. Fl. Brit. India 3 : 8. 1880 ; Parker, For. Fl. Punj. ed. 3. 267. 1956.

Large shrub. Leaves ovate, elliptic, oblong or obovate, serrate. Flowers white, tinged with pink.

*Fl. & Fr.* : July November.

Chamba (RRL), Kulu (DD), Simla (BSIP, DD).

Sub-alpine Himalaya.