

FLOWERING PLANTS OF SHANKARACHARYA HILL, SRINAGAR, KASHMIR

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A B S T R A C T

This paper describes the angiospermic flora of the Shankaracharya Hill, covering 204 species of flowering plants belonging to 38 families. Analysis of the species collected shows that the following five families are the richest ones as indicated by the number of species in each family; Gramineae (45), Compositae (22), Cruciferae (17), Leguminosae (16) and Labiatae (12). These together represent about 56% of the species collected.

INTRODUCTION

The Shankaracharya Hill also known as Takht-i-sulaiman, is situated at a distance of about 3 km from Srinagar city. It is a very popular tourist spot. The present paper is the outcome of the study carried out by the author from January, 1968 to September, 1970. In addition to enumeration of species, the main diagnostic features, the time of flowering and fruiting and local names wherever known are also recorded. Specimens were collected every month. They are deposited in the Herbarium of Regional Research Laboratory (Branch), Srinagar.

GEOLOGY AND SOIL

The Shankaracharya hill of the Zanskar range is about 300 metres higher than Srinagar and 1900 metres above main sea level. The rocks of the hill are igneous and of the sulaimanite type. Soil is gravelly and silty. There is hardly any perennial water source in the area which could have made a definite change in the vegetation of the hill from its surroundings. Soil erosion due to rain has a marked effect on the vegetation of the hill. Many of the flowering plants growing in the fields of Srinagar have well adapted themselves on the hill up to 1800 m.

ENUMERATION

RANUNCULACEAE

Adonis aestivalis Linn. FBI 1: 15.

Annual herbs. Flowers showy, in pinkish and reddish colours. Fls. & Frts. April-June. Not as common as in fields. *Kaul* 5940S.

Anemone biflora DC. FBI 1: 7.

Bulbous herb. Flowers showy, white or pinkish. Fls. & Frts. Feb.-April. Common along the main road. *Kaul* 96S.

Aquilegia vulgaris Linn. FBI 1: 24.

Erect tufted herb. Fruit elongated. Fls. & Frts. July-September. Seen only once on the hill near the top. *Kaul* 19642S.

Ceratocephalus falcatus (Linn.) Pers. *Ranunculus falcatus* Linn., FBI 1: 16.

Tufted small annual herbs. Flowers yellow. Fls. & Frts. March-April. Common near the foot of the hill. *Kaul* 98S.

Clematis grata Wall. FBI 1: 3.

Shrubby climber; flowers yellowish. Fls. & Frts. July-September. Rare on the back side of hill. *Kaul* 19672S.

Delphinium denudatum (Wall.) HK. f. & T. FBI 1: 25.

Annual herbs; flowers deep blue. Fls. & Frts. July-September. Rare near the middle along the main road of hill. *Kaul* 19599S.

D. incanum Royle, FBI 1: 25.

Annual herbs; flowers bluish. Fls. & Frts. June-September. Common near the middle. *Kaul* 19600S.

Ranunculus diffusus (DC.) HK. f. & T. FBI 1: 19.

Annual herbs growing near wet places; flowers yellow. Fls. & Frts. April-June. Rare on back side. *Kaul* 19500S.

R. laetus Wall. ex HK. f. & T. FBI 1: 19.

Perennial herbs. Flowers yellow. Fls. & Frts. May-August. Common near foot of the hill. *Kaul* 158S.

BERBERIDACEAE

Berberis lycium Royle, FBI 1: 110.

Shrubby perennial. Fruits edible. Fls. & Frts. June-August. Common along Pari Mahal region. *Kaul* 292S.

B. petiolaris Wall. ex Don

Shrubby perennial. Flowers yellow. Fls. & Frts. May-August. Not common. *Kaul* 196502S.

Berberis umbellata Wall. ex HK. f. & T. FBI 1: 110.
Shrubby perennial. Flowers yellowish. Fls. & Frts. April-June. Common along Pari Mahal region. *Kaul* 19501S.

CRUCIFERAE

Alyssum minimum Willd. FBI 1: 141.
Annual herbs. Flowers yellow. Fls. & Frts. March-May. Rare. *Kaul* 124S.

Arabidiopsis thaliana (Linn.) Heynhold.
Annual small herbs. Flowers white. Fls. & Frts. March-April. Common at the foot of hill. *Kaul* 116S.

Arabis glabra Crantz. FBI 1: 135.
Annual herbs. Flowers dirty white. Fls. & Frts. March-May. Not common. *Kaul* 5957S.

A. hirsuta (Linn.) Scop.
Annual herbs. Flowers white. Fls. & Frts. March-May. Very rare. *Kaul* 121S.

A. nuda Belang. FBI 1: 137.
Annual very small herb. Flowers yellow. Fls. & Frts. March-May. Not as common as in fields. *Kaul* 105S.

Barbarea intermedia Boreux.
Annual or biennial herb. Flowers yellow. Fls. & Frts. May-July. Rare near the base of hill. *Kaul* 21S.

Capsella bursa-pastoris Moench. FBI 1: 159.
Annual or biennial herb. Flowers white. Fls. & Frts. March-May; sometimes flowers in October and November months. Common on the hill near the moist conditions. *Kaul* 5946S.

Cardamine hirsuta Linn. FBI 1: 138.
Annual herb. Flowers white. Fls. & Frts. March-May. Not as common as in fields. *Kaul* 120S.

Coronopus didymus (Linn.) Smith.
Annual or biennial herbs. Flowers small white. Fls. & Frts. May-August. Rare. *Kaul* 23S.

Descurainia sophia (Linn.) Webb. *Sisymbrium sophia* Linn. FBI 1: 150.

Annual herbs, flowers yellow. Fls. & Frts. March-May. Not so common. *Kaul* 101S.

Erophila vulgaris DC. FBI 1: 145.
Annual small herbs. Flowers white. Fls. & Frts. March-May. Common near the foot of hill. *Kaul* 117S.

Eruca sativa Lamk. FBI 1: 158.
Annual herbs. Flowers yellow but petal veined black. Fls. & Frts. March-July. Very rare. *Kaul* 100S.

Erysimum altaicum C. A. Meyer, FBI 1: 154.
Annual herbs. Flowers yellow. Fls. & Frts. May-July. Rare. *Kaul* 5956S.

Malcolmia africana Br. FBI 1: 146.
Annual prostrate herbs. Flowers white to purple. Fls. & Frts. April-June. Not common. *Kaul* 5989S.

Rorippa islandica (Oeder) Borbes. *Nasturtium palustre* DC. FBI 1: 133.

Annual or biennial herbs. Flowers yellow. Fls. & Frts. May-July. Not common. *Kaul* 144S.

Sisymbrium irio Linn. FBI 1: 150.
Annual or biennial herbs. Flowers yellow. Fls. & Frts. March-July. Common. *Kaul* 19556S.

S. loeselii Linn. FBI 1: 151.
Annual herbs. Flowers yellow. Fls. & Frts. May-July. Rare near the base of the main road. *Kaul* 1965S.

CARYOPHYLLACEAE

Arenaria neelgerrensis Wight & Arn. FBI 1: 239.
Annual herbs. Flowers white. Fls. & Frts. March-June. Rare on the back of hill. *Kaul* 19618S.

A. serpyllifolia Linn. FBI 1: 239.
Annual herbs. Flowers white. Fls. & Frts. March-June. Occasional near the base. *Kaul* 19617S.

Cerastium vulgatum Linn. FBI 1: 228.
Annual herbs. Flowers dirty white. Fls. & Frts. April-June. Rare along the foot of hill. *Kaul* 19616S.

Dianthus jacquemontii Edgew. FBI 1: 214.
Annual or perennial tufted herbs. Flowers white. Fls. & Frts. May-August. Rare near the middle of hill. *Kaul* 19512S.

Silene conoidea Linn. FBI 1: 218.
Annual herbs. Flowers pinkish or purplish. Fls. & Frts. May-July. Rare near the base of the hill.

Stellaria media Linn. FBI 1: 230.
Annual herbs. Flowers white. Fls. & Frts. March-June. Common near the base of hill. *Kaul* 5900S.

PORTULACACEAE

Portulaca oleracea Linn. FBI 1: 246.
Annual herbs. Flowers yellow. Fls. & Frts. May-July. Sometimes seen flowering in September and October as well. Common near the base of the hill. *Kaul* 86S.

HYPERICACEAE

Hypericum perforatum Linn. FBI 1: 255.
Perennial herbs. Flowers yellow. Fls. & Frts. June-August. Not common on hill. *Kaul* 5574S.

MALVACEAE

Malva silvestris Linn. FBI 1: 320.
Annual or biennial trailing herbs. Flowers white. Fls. & Frts. June-August. Occasional below the middle. *Kaul* 19606S.

GERANIACEAE

Erodium cicutarium Leman. FBI 1: 434.

Annual herbs. Flowers pinkish. Fls. & Frts. April-July. Common near the base of the hill. *Kaul* 5991S.

Geranium nepalense Sweet. FBI 1: 431.

Annual or biennial herb. Flowers pinkish or at times dirty white. Grows under the shade of stones and rocks in moist situations. Fls. & Frts. June-August. Not common. *Kaul* 19676S.

G. sibiricum Linn. FBI 1: 431.

Annual herbs. Flowers smaller similar to that of *G. nepalense*. Fls. & Frts. June-August. Occasionally found on the hill. *Kaul* 19677S.

OXALIDACEAE

Oxalis corniculata Linn. FBI 1: 436.

Annual herb. (sometimes perennial). Flowers yellow. Fls. & Frts. May-October. Common. *Kaul* 5986S.

BALSAMINACEAE

Impatiens brachycentra Kar. & Kir. FBI 1: 481.

Annual herb. Flowers small, pale white. Fls. & Frts. July-September. Rare. *Kaul* 5548S.

RHAMNACEAE

Zizyphus vulgaris Lamk. FBI 1: 633.

A small tree. Flowers greenish white. Fruits edible. Fls. & Frts. June-October. *Kaul* 2500S.

LEGUMINOSAE

Astragalus leucocephalus Grah. FBI 2: 128.

Annual herb. Flowers rosy. Fls. & Frts. May-August. Common near the middle. *Kaul* 5899S.

A. psilocentrus Fisch. *A. polycanthus* Royle, FBI 2: 134.

Perennial copiously branched undershrub. Flowers yellow. Fls. & Frts. March-May. Common near the middle of the hill.

Lathyrus pratensis Linn. FBI 2: 180.

Annual herbs. Flowers yellowish. Fls. & Frts. May-August. Not common. *Kaul* 5S.

Lespedeza elegans Camb. FBI 2: 143.

Erect perennial undershrub. Flowers small dirty white. Fls. & Frts. July-October. Not common. *Kaul* 19691S.

L. juncea Pers. FBI 2: 142.

Prostrate annual herb. Flowers small pinkish white. Fls. & Frts. July-October. Common near the middle of the hill. *Kaul* 17S.

L. sericea Miq. FBI 2: 142.

Annual or biennial herb. Flowers small pinkish white. Fls. & Frts. July-October. Not common. *Kaul* 16S.

Lotus corniculatus Linn. FBI 2: 91.

Perennial herb. Flowers yellow. Fls. & Frts. May-September. Common below the middle of the hill. *Kaul* 5589S.

Medicago denticulata Willd. FBI 2: 90.

Annual trailing herb. Flowers yellow. Fls. & Frts. May-August. Common. *Kaul* 5993S.

M. falcata Linn. FBI 2: 90.

A branched suberect herb. Flowers yellowish. Fls. & Frts. June-September. Common near the top of the hill. *Kaul* 5992S.

M. lupulina Linn. FBI 2: 90.

Annual or biennial trailing herb. Flowers yellow small. Fls. & Frts. April-August. Common. *Kaul* 19681S.

Melilotus alba Lamk. FBI 2: 89.

Perennial erect herb. Flowers white. Fls. & Frts. June-September. Common near the top of hill. *Kaul* 19601S.

M. parviflora Desf. FBI 2: 89.

Annual herbs. Flowers yellow. Fls. & Frts. May-August. Rare. *Kaul* 5978S.

Robinia pseudacacia Linn.

A cultivated tree. Flowers white. Fls. & Frts. July-October. Not common. *Kaul* 2501S.

Trifolium pratense Linn. FBI 2: 86.

Perennial herb. Flowers pinkish purple. Fls. & Frts. July-September. Not common. *Kaul* 4S.

T. repens Linn. FBI 2: 86.

Perennial trailing herbs. Flowers white sometimes pinkish. Fls. & Frts. May-August. Common. *Kaul* 55S.

Vicia sativa Linn. FBI 2: 178.

Annual herb. Flowers pinkish. Fls. & Frts. April-June. Growing near foot of hill. *Kaul* 5996S.

ROSACEAE

Cotoneaster nummularia Fisch. & Mey. FBI 2: 386.

Perennial shrubs. Flowers small, fruits black. Fls. & Frts. April-October. Common. *Kaul* 4531S.

Duchesnea indica (Andr.) Focke. *Fragaria indica* Andr. FBI 2: 343.

Prostrate slender hairy herb. Flowers yellowish. Rare on the back side of hill. *Kaul* 4528S.

Geum urbanum Linn. FBI 2: 342.

Perennial herb. Flowers yellow. Fls. & Frts. May-August. Very rare. *Kaul* 19628S.

Potentilla reptans Linn. FBI 2: 356.

Perennial trailing herb. Flowers yellow. Fls. & Frts. May-August. Common. *Kaul* 5578S.

Rosa sp.

Perennial shrubs. Flowers white as well as rosy. Fls. & Frts. April-October. Common. *Kaul* 4528S.

Rubus fruticosus Linn. FBI 2: 337.

Perennial shrubs. Flowers large showy. Fls. & Frts. July-November. Common. *Kaul* 19685S.

CRASSULACEAE

Sedum adenotrichum Wall. FBI 2: 420.

Annual herb-growing within lichens and mosses. Flowers small pinkish. Fls. & Frts. May-August. Common. *Kaul* 4595S.

S. rosulatum Edgew. FBI 2: 420.

Annual small pubescent herb. Flowers small not seen. Fls. & Frts. Not seen. *Kaul* 4537S.

UMBELLIFERAE

Apium graveolens Linn. FBI 2: 679.

Biennial herb. Flowers white. Fls. & Frts. June-September. Very rare. *Kaul* 308S.

Bupleurum falcatum Linn. FBI 2: 676.

Annual or biennial herb. Flowers yellow. (sometimes perennial). Fls. & Frts. May-August. Near the top of hill. *Kaul* 2001S.

Eryngium billardieri Delaroché, FBI 2: 670.

Annual herb. Flowers bluish green. Fls. & Frts. May-August. Not common. *Kaul* 5595S.

Ligusticum thomsonii C. B. Clarke FBI 2: 698.

Perennial herb. Flowers whitish. Fls. & Frts. June-September. Not common. *Kaul* 1009S.

Pimpinella diversifolia DC. FBI 2: 688

Biennial herb. Flowers white. Fls. & Frts. June-August. Rare. *Kaul* 1012S.

Scandix pecten-veneris Linn. FBI 2: 692.

Annual small herb. Flowers white. Fls. & Frts. March-June. Rare.

RUBIACEAE

Galium aparine Linn. FBI 3: 205.

Annual climbing herb. Flowers small white. Fls. & Frts. April-June. Uncommon. *Kaul* 5992S.

G. tricornis With. FBI 3: 207.

Annual herb. Flowers very small, whitish. Fls. & Frts. July-September. Very rare. *Kaul* 19626S.

VALERIANACEAE

Valerianella szovitziana Fisch. FBI 3: 214.

Annual very small herb. Flowers small, whitish. Fls. & Frts. April-July. Rare. *Kaul* 12S.

COMPOSITAE

Achillea millefolium Linn. FBI 3: 312.

Perennial herb. Flowers in small white heads. Fls. & Frts. July-September. Rare. *Kaul* 5547S.

Artemisia absinthium Linn. FBI 3: 328.

Perennial herb. Fls. & Frts. July-October. Not common but abundant. *Kaul* 4599S.

A. scoparia Waldst. FBI 3: 323.

Perennial herb. Flowers in small heads. Fls. & Frts. June-October. Rare. *Kaul* 19683S.

A. tournefortiana Reichb. FBI 3: 324.

Annual tall herb. Flowers in small heads. Fls. & Frts. June-October. Rare. *Kaul* 45975S.

A. vestita Wall. FBI 3: 326.

Shrubby perennial herb. Flower heads small. Fls. & Frts. July-October. Common. *Kaul* 4598S.

Carduus nutans Linn. FBI 3: 361.

Annual or biennial herb. Flower heads large purplish. Fls. & Frts. June-September. Common. *Kaul* 29S.

Centaurea iberica Stev. FBI 3: 385.

Perennial herb. Flower heads purplish. Fls. & Frts. June-September. Common near base. *Kaul* 19692S.

Cichorium intybus Linn. FBI 3: 391.

Perennial herb. Flower heads showy, bluish. Fls. & Frts. June-September. Rare. *Kaul* 19611S.

Cnicus wallichii DC. FBI 3: 363.

Annual herb. Flowers in large heads. Fls. & Frts. June-August. Rare. *Kaul* 27S.

Erigeron bonariensis Linn.

Perennial herb. Flower heads small. Fls. & Frts. May-October. Common. *Kaul* 75S.

E. canadensis Linn. FBI 3: 254.

Annual herbs, tall. Flower heads very small. Fls. & Frts. June-October. Not common. *Kaul* 89S.

Filago germanica Linn. FBI 3: 277.

Small, slender woolly annual herb. Fls. & Frts. April-July. Common. *Kaul* 183S.

Gnaphalium luteoalbum Linn. FBI 3: 288.

Annual woolly herbs. Flower heads small yellow. Fls. & Frts. May-August. Rare on back side. *Kaul* 4596S.

Lactuca longifolia DC. FBI 3: 405.

Annual or biennial herb. Fls. & Frts. June-September. Common below the middle. *Kaul* 4602S.

L. scariola Linn. FBI 3: 404.

Annual or biennial herb. Juice milky. Fls. & Frts. June-August. Rare. *Kaul* 4601S.

Crepis sancta (Linn.) Bab. *Pterotheca falconeri* Hook. f. FBI 3: 399.

Annual herbs. Flower heads yellow. Fls. & Frts. May-August. Common. *Kaul* 65S.

Saussurea heteromalla (D. Don) Hand.-Mazz.

Biennial herb. Flowers in large heads. Fls. & Frts. June-August. Rare near the middle. *Kaul* 3S.

Sonchus asper Vill. FBI 3: 414.

Annual herb. Flowers heads yellow. Fls. & Frts. June-November. Common. *Kaul* 4603S.

Taraxacum officinale Wigg. FBI 3: 401.

Annual or biennial herb. Juice milky. Flower heads milky. Fls. & Frts. March-July. Common. *Kaul* 5939S.

Tragopogon pratense Linn. FBI 3: 418.

Perennial herbs. Flowers in long yellow heads. Fls. & Frts. May-August. Rare. *Kaul* 4604S.

Tricholepis elongata DC. FBI 3: 380.

Annual or biennial herb. Flowers in large heads. Fls. & Frts. July-September. Rare. *Kaul* 37S.

PRIMULACEAE

Anagallis arvensis Linn. FBI 3: 506.

Annual herb with deep pink flowers. Fls. & Frts. April-August. Common. *Kaul* 5937S.

Androsace rotundifolia Hardwick. FBI 3: 496.

Perennial small herbs. Flowers rosy. Fls. & Frts. May-August. Very rare. *Kaul* 4605S.

APOCYNACEAE

Catharanthus roseus (Linn.) G. Don

Perennial climbing plant probably cultivated. Fls. & Frts. June-August. Abundant at a place not common. *Kaul* 4606S.

GENTIANACEAE

Canscora decussata Roem. & Sch. FBI 4: 104.

Annual small herb with white or pink flowers. Fls. & Frts. June-August. Very rare. *Kaul* 4607S.

BORAGINACEAE

Heliotropium strigosum Willd. FBI 4: 151.

Annual herb with small bluish flower. Fls. & Frts. May-August. Rare. *Kaul* 5560S.

Lithospermum arvense Linn. FBI 4: 174.

Annual herb with white or sometimes reddish flowers. Fls. & Frts. April-June. Common. *Kaul* 126S.

Lycopsis arvensis Linn. FBI 4: 168.

Annual herbs with white or bluish flowers. Fls. & Frts. April-July. Common. *Kaul* 125S.

Myosotis caespitosa Schultz. FBI 4: 173.

Annual herb. Found near moist situations, flowers blue. Fls. & Frts. April-August. Rare. *Kaul* 4608S.

CONVOLVULACEAE

Convolvulus arvensis Linn. FBI 4: 219.

Annual trailing herb. Flower white with pinkish tinge. Found near the base of the hill. Fls. & Frts. June-September. *Kaul* 5536S.

Cuscuta capitata Roxb. FBI 4: 227.

A rose-coloured parasite on *Rubus fruticosus*. Fls. & Frts. August-October. Common. *Kaul* 4618S.

SOLANACEAE

Datura stramonium Linn. FBI 4: 242.

Annual shrubby plant. Flowers white. Fls. & Frts. July-October. Not common. *Kaul* 4619S.

Solanum nigrum Linn. FBI 4: 229.

Annual herbs. Flowers white. Fls. & Frts. May-August. Common. *Kaul* 1966S.

SCROPHULARIACEAE

Kickxia subsessilis Pennel.

Annual herb. Flowers yellowish. Fls. & Frts. June-August. Rare. *Kaul* 5593S.

Linaria dalmatica (Linn.) Mill.

Perennial herb. Flowers yellow. Fls. & Frts. April-August. Very common.

Verbascum thapsus Linn. FBI 4: 250.

Biennial herb. Flowers yellow. Fls. & Frts. June-August. Common. *Kaul* 4620S.

Veronica agrestis Linn. FBI 4: 294.

Annual herb. Flowers bluish. Fls. & Frts. March-May and sometimes flowering in October-November as well. Common. *Kaul* 5947S.

V. biloba Linn. FBI 4: 294.

Annual herb. Flowers blue. Fls. & Frts. April-June. Rare. *Kaul* 4622S.

V. persica Poir. FBI 4: 294.

Annual herbs. Flowers small whitish. Fls. & Frts. March-May and in October-November. Common. *Kaul* 5990S.

V. verna Linn. FBI 4: 296.

Annual herbs. Flowers bluish. Fls. & Frts. April-June. Common. *Kaul* 4623S.

VERBENACEAE

Verbena officinalis Linn. FBI 4: 565.

Annual herb. Flowers pinkish white. Fls. & Frts. June-August. Rare. *Kaul* 4624S.

LABIATAE

Clinopodium vulgare Linn. *Calamintha clinopodium* Benth. FBI 4: 650.

Perennial herb. Flowers lilac. Fls. & Frts. May-August. Rare near the top. *Kaul* 48S.

C. umbrosum (M. B.) C. Koch. *Calamintha umbrosa* Benth. FBI 4: 650.

Annual or biennial herb. Flowers rosy. Fls. & Frts. May-August. Rare near the top. *Kaul* 4625S.

Lamium amplexicaule Linn. FBI 4: 679.

Annual herbs. Flowers rosy. Fls. & Frts. April-July. Common near the base. *Kaul* 4631S.

Leucas lanata Benth. FBI 4: 681.

Annual herb. Flowers lilac. Fls. & Frts. July-October. Rare. *Kaul* 40S.

Marrubium vulgare Linn. FBI 4: 671.

Perennial tufted herbs. Flower dirty white. Fls. & Frts. June-October. Common. *Kaul* 4630S.

Nepeta cataria Linn. FBI 4: 662.

Annual or biennial herbs. Flowers white or rosy. Fls. & Frts. June-September. Rare. *Kaul* 5550S.

N. mollis Benth. FBI 4: 660.

Annual herb. Flowers lilac. Fls. & Frts. June-August. Rare. *Kaul* 4628S, 19667S.

N. raphanorhiza Benth. FBI 4: 659.

A perennial bulbous herb. Flowers bluish. Fls. & Frts. April-May. Common along the Pari Mahal side. *Kaul* 6000S.

N. salviaefolia Royle ex Benth. FBI 4: 664.

Perennial herb. Flowers white with red spots. Fls. & Frts. May-August. Common. *Kaul* 4629S.

Plectranthus rugosus Wall. FBI 4: 620.

A shrub. Leaves and flowers aromatic. Flowers white with red spots. Fls. & Frts. June-August. Common near the middle growing between the rocks. *Kaul* 19698 S.

Salvia lanata Roxb. FBI 4: 654.

Biennial herb. Flowers rosy. Fls. & Frts. August-September. Very rare. *Kaul* 4627S.

S. moorcroftiana Wall. FBI 4: 654.

Perennial herb. Flowers lilac. Fls. & Frts. June-September. Very common from the middle of the hill. *Kaul* 4624S.

PLANTAGINACEAE

Plantago lanceolata Linn. FBI 4: 706.

Perennial herb. Flowers in spikes. Fls. & Frts. May-August. Common near the base and top also. *Kaul* 4632S.

P. major Linn. FBI 4: 705.

Perennial herb. Flowers in long spikes. Fls. & Frts. May-August or September. Common. *Kaul* 4633S.

ILLECEBRACEAE

Herniaria hirsuta Linn. FBI 4: 712.

Annual herbs. Flowers very small. Fls. & Frts. June-August. Rare. *Kaul* 165S.

AMARANTHACEAE

Amaranthus paniculatus Linn. FBI 4: 718.

Annual herb. Flowers very small in spikes. Fls. & Frts. June-September. Rare. *Kaul* 70S.

CHENOPODIACEAE

Chenopodium album Linn. FBI 5: 3.

Annual herb. Flowers very small, greenish. Fls. & Frts. June-September. Rare. *Kaul* 56S.

C. ambrosoides Linn. FBI 5: 4.

Annual or biennial herb. Flowers small. Fls. & Frts. June-October or even November. *Kaul* 5967S.

POLYGONACEAE

Polygonum amplexicaule Don, FBI 5: 32.

Annual herb. Flowers rosy. Fls. & Frts. June-September. Rare. *Kaul* 4634S.

P. aviculare Linn. FBI 5: 26.

Annual or biennial herb. Flowers small rosy. Fls. & Frts. July-October. Common. *Kaul* 91S.

P. persicaria Linn. FBI 5: 35.

Annual or biennial herb. Flowers greenish, small. Fls. & Frts. May-October. Rare. *Kaul* 72S.

P. tubulosum Boiss. FBI 5: 27.

Annual herb. Flowers small rosy. Fls. & Frts. June-September. Common. *Kaul* 42S.

Rumex acetosa Linn. FBI 5: 60.

Perennial herb. Flowers greenish. Fls. & Frts. July-October. Rare. *Kaul* 4637S.

R. hastatus Don, FBI 5: 60.

Perennial shrubby plants. Flowers reddish showy. Fls. & Frts. June-September. Common. *Kaul* 4636S.

THYMELAEACEAE

Daphne oleoides Schreb. FBI 5: 193.

Small perennial shrub. Flowers white. Fls. & Frts. June-September. Very common. *Kaul* 4638S.

EUPHORBIACEAE

Euphorbia hispida Boiss. FBI 5: 265.

Annual prostrate herb. Flowers small. Fls. & Frts. May-October. Common. *Kaul* 4635S.

E. helioscopia Linn. FBI 5: 262.

Annual herb. Flowers small. Fls. & Frts. April-November. Common. *Kaul* 5965S.

URTICACEAE

Urtica dioica Linn. FBI 5: 548.

Perennial herb. Flowers small in catkins. Fls. & Frts. July-September. Common. *Kaul* 4639S.

U. parviflora Roxb. FBI 5: 548.

Perennial herb. Flowers small. Fls. & Frts. June-October. Rare. *Kaul* 35S.

LILIACEAE

Colchicum luteum Baker, FBI 6: 356.

Perennial bulbous herb. Flowers yellow. Fls. & Frts. June-October. Common. *Kaul* 35S.

Tulipa stellata Hook. FBI 6: 355.

Perennial bulbous herbs. Flowers showy. Fls. & Frts. March-May. Sometimes flowers in December as well but very rarely. Common on the hill. *Kaul* 4640S.

Gagea kashmirensis Turill.

Perennial small bulbous herb. Flowers yellow. Common. Fls. & Frts. February-March or April. *Kaul* 4641S.

G. lutea Schult. f. FBI 6: 355.

Perennial bulbous small herb. Flowers yellow. Rare. Fls. & Frts. February-May. *Kaul* 46142S.

CYPERACEAE

Carex muricata Linn. var. **foliosa** D. Don, FBI 6: 703.

Annual herb. Rare. Fls. & Frts. June-August. *Kaul* 8005S.

C. notha Kunth, FBI 6: 709.

Annual herb. Common. Fls. & Frts. June-August. *Kaul* 8231S.

C. nubigena D. Don, FBI 6: 702.

Perennial tufted herb. Rare. Fls. & Frts. June-August. *Kaul* 8004S.

C. pseudocyperus Linn. FBI 6: 740.

Annual herb. Common on the lake side of hill. Fls. & Frts. April-July. *Kaul* 8232S.

C. wallichiana Prescott, FBI 6: 747.

Perennial herb. Occasional. Fls. & Frts. April-July. *Kaul* 8233S.

Cyperus eleusinoides Kunth

Perennial herb. Spikelets brown or red. Rare. Fls. & Frts. September-November. *Kaul* 8001S.

C. iria Linn. FBI 6: 606.

Annual herb. Spikelets long. Fls. & Frts. August-November. Rare near the top of hill. *Kaul* 2523S.

C. rotundus Linn.

Annual herb. Spikelets brownish. Common. Fls. & Frts. July-November. *Kaul* 8002S.

Kyllinga metzii Steud. FBI 6: 589. *K. squamulata* Vahl

Annual tufted herb. Flowers not seen. *Kaul* 8003S.

GRAMINEAE

Agropyron canaliculatum Nevski.

Perennial tufted grass. Rare. Fls. & Frts. June-September. *Kaul* 100S.

Agrostis alba Linn. FBI 7: 254.

Perennial tufted grass. Very rare. Fls. & Frts. June-August. *Kapoor* 2698.

Alopecurus arundinaceus Poir, FBI 7: 238.

Annual grass. Very rare. Fls. & Frts. May-July. *Kapoor* 2649.

A. geniculatus Linn. FBI 7: 239.

Annual or biennial grass. Rare. Fls. & Frts. June-September. *Kapoor* 3125.

Bromus inermis Leyss. FBI 7: 357.

Perennial tufted grass. Common. Fls. & Frts. May-August. *Kaul* 2009S.

B. scoparius Linn. FBI 7: 360.

Annual grass. Rare. Fls. & Frts. August-September. *Kaul* 2010S.

Chrysopogon gryllus (Linn.) Trin. FBI 7: 188.

Perennial tufted grass. Rare. Fls. & Frts. May-July. *Kapoor* 2659.

Cymbopogon jwarancusa (Jones) Schult. FBI 7: 203.

Perennial tufted grass. Common at the top. Fls. & Frts. May-September. *Kaul* 1997S.

Cynodon dactylon Pers. FBI 7: 288.

Perennial grass. Common. Fls. & Frts. June-September. *Kaul* 2003S.

Dichanthium annulatum (Forsk.) Stapf

Perennial tufted grass. Common. Fls. & Frts. May-September. *Kaul* 1996S.

Echinochloa crus-galli (Linn.) Roem. et Schult. FBI 7: 31.

Annual grass. Very rare. Fls. & Frts. June-September. *Kaul* 1990S.

E. stagnina (Retz.) Beauv. FBI 7: 31.

Annual grass. Very rare. Fls. & Frts. April-July. *Kapoor* 2668.

Eleusine indica Gaertn. FBI 7: 293.

Annual grass. Rare. Fls. & Frts. September-November. *Kaul* 2730S.

Eragrostis nigra Nees ex Steud. FBI 7: 324.

Annual or biennial grass. Common. Fls. & Frts. May-July. *Kaul* 2004S.

E. pilosa Beauv. FBI 7: 323.

Perennial small tufted grass. Common. Fls. & Frts. September-November. *Kaul* 2724S.

E. tenella Roem. FBI 7: 315.

Perennial tufted small grass. Common. Fls. & Frts. August-November. *Kaul* 2005S.

Festuca rubra Linn. FBI 7: 352.

Annual grass. Very rare. Fls. & Frts. May-July. *Kaul* 2986S.

Glyceria distans Wahlb. FBI 7: 347.

Perennial tufted grass. Rare. Fls. & Frts. April-July. *Kaul* 2622S.

Hordeum murinum Linn. FBI 7: 372.

Annual tufted grass. Common. Fls. & Frts. June-August. *Kaul* 17S.

Imperata cylindrica (Linn.) Beauv. FBI 7: 106.

Perennial grass. Rare. Fls. & Frts. June-August. *Kaul* 1994S.

Koeleria cristata Pers. FBI 7: 308.

Perennial stoloniferous grass. Not common. Fls. & Frts. August-November. *Kapoor* 2731.

K. phleoides Pers. FBI 7: 309.

Annual grass. Very rare. Fls. & Frts. Not seen. *Kaul* 293S.

Leersia hexandra Sw. FBI 7: 94.

Annual grass. Very rare. Fls. & Frts. July-October. *Kapoor* 2700.

Lolium temulentum Linn. FBI 7: 364.

Annual grass. Rare on the hill. Fls. & Frts. September. *Kapoor* 2010.

Milium effusum Linn. FBI 7: 235.

Perennial grass. Rare. Fls. & Frts. September-November. *Kapoor* 2719.

Miscanthus nepalense Hack. FBI 7: 107.

Perennial grass. Very rare. Fls. & Frts. July-October. *Kapoor* 2701.

Muehlenbergia himalayensis Hack. FBI 7: 259.

Annual grass. Common. Fls. & Frts. August-October. *Kapoor* 2717.

Panicum antidotale Retz. FBI 7: 52.

Perennial shrubby grass. Very rare on hill. Fls. & Frts. July-October. *Kaul* 2001S.

Pennisetum orientale Rich. FBI 7: 86.

Perennial grass. Very common. Fls. & Frts. June-September. *Kaul* 1993S.

Phleum alpinum Linn. FBI 7: 236.

Annual grass. Rare. Fls. & Frts. May-July. *Kaul* 1999S.

P. paniculatum Huds. FBI 7: 237.

Annual grass. Occasional. Fls. & Frts. May-July. *Kaul* 1998S.

Poa angustifolia Linn. FBI 7: 340.

Perennial grass. Not common. Fls. & Frts. May-August. *Kaul* 2006S.

P. annua Linn. FBI 7: 345.

Perennial tufted grass. Common. Fls. & Frts. June-September. *Kaul* 127S.

P. bulbosa Linn. FBI 7: 338.

Perennial tufted grass. Common. Fls. & Frts. April-July. *Kaul* 2007S.

Polypogon fugax Nees ex. Steud. FBI 7: 245.

Annual or biennial grass. Rare. Fls. & Frts. June-August. *Kaul* 89S.

P. monspeliensis Desf. FBI 7: 245.

Perennial tufted grass. Not common. Fls. & Frts. June-August, even September. *Kaul* 15S.

Roegneria striata (Steud.) Nevski.

Perennial grass. Very rare. Fls. & Frts. May-August. *Kaul* 121S.

Setaria glauca Beauv. FBI 7: 78.

Annual grass. Common. Fls. & Frts. May-September even October. *Kaul* 1991S.

S. verticillata Beauv. FBI 7: 80.

Annual grass. Not common. Fls. & Frts. May-September. *Kaul* 1992S.

S. viridis Beauv. FBI 7: 80.

Annual grass. Very rare. Fls. & Frts. July. *Kaul* 2003S.

Sorghum halepense (Linn.) Pers. FBI 7: 185.

Perennial tall grass. Common. Fls. & Frts. June-November. *Kaul* 1995S.

S. nitidum (Vahl) Pers.

Perennial grass. Rare. Fls. & Frts. June-November. *Kaul* 9070S.

Stipa orientalis Trin. FBI 7: 299.

Perennial tufted grass. Common. Fls. & Frts. August-November. *Kaul* 2716S.

S. sibirica Lamk. FBI 7: 231.

Perennial grass. Very rare. Fls. & Frts. September-October. *Kaul* 2794S.

Vulpa myuros (Linn.) Gmel. FBI 7: 356.

Perennial grass. Common. Fls. & Frts. April-August. *Kaul* 2008S.

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