

# ADDITIONS TO THE FLORA OF PINDARI GLACIERS AND NEIGHBOURING LOCALITIES IN THE KUMAON HILLS, UTTAR PRADESH\*

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## ABSTRACT

This study adds 178 taxa belonging to 66 families to the list of plants hitherto reported from Pindari Glaciers and adjoining areas.

## INTRODUCTION

Pindari Glaciers have long been a source of attraction to botanists from all over the country. Their observations on the plants and vegetation of this region have resulted in a number of publications. STRACHEY's catalogue, revised and published by DUTHIE in 1906, is the oldest record on the Plants of Kumaon. STRACHEY's observations were based on a collection made jointly by him and WINTERBOTTOM. CHAMPION (1921) published a small list of plants collected by him enroute to Pindari Glaciers. RAO (1960) gave an exhaustive account of plants while making a survey of the vegetation of this region. He also included Almora, Ranikhet and Nainital in his studies. He reports 720 species of plants occurring in this area, of which 676 are Angiosperms, 4 Gymnosperms and the rest Pteridophytes. Recently SINGH AND KUMAR (1975) have added 56 plants to the Pindari Glaciers flora.

This paper makes a further contribution of about 178 taxa to the plants of this region. It is based on the collections made by : (1) the senior author from Pindari Glaciers and adjoining areas during May-June, 1972 ; (2) D. D. Awasthi in May, 1950 ; (3) Duthie in 1886, (4) Osmoston in 1932 ; (5) Bis Ram in 1933 ; (6) Parkinson in 1935; and (7) Champion (date not given). The collections made by the senior author and Awasthi are lodged in the herbarium of National Botanical Research Institute, Lucknow (LWG), and those of Duthie, Osmoston, Bis Ram, Parkinson and Champion are lodged in the herbarium of the Forest Research Institute, Dehra Dun (DD).

The study includes short description, locality or localities and field notes and vernacular names, if known for the taxa.

## ADDITIONAL TAXA

### RANUNCULACEAE

#### **Ranunculus muricatus** L.

An erect herb with yellow flowers. Common. Almora 2000 m. Kaul, 19183.

### MENISPERMACEAE

#### **Cissampelos pariera** L.

Shrubby climber. Kapkot to Bageshwar 1100 m. Awasthi, 54011.

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**Cocculus villosus** DC.

A climbing shrub. Loharkhet, one mile up, 1981 m. Awasthi, 829.

**C. laurifolius** DC.

An erect shrub. Takula to Bageshwar, 5-6 miles, 1371 m. Awasthi, 650.

BERBERIDACEAE

**Berberis coriarea** Royle

Shrub near Dwali, 2590 m. Awasthi, 868 Vern. Moosi, Chyotar.

**B. edgewarthiana** C. B. Sch.

Dwali, 2590 m. Awasthi, 866. Vern. Kinmoda.

**B. kumaonsis** C. B. Sch.

Dhakuri hill, 2590 m. Awasthi, 761.

**B. asiatica** Roxb.

Shrub with spines. Fruits yellow. Flowers pale yellow very common. Jageshwar temple, Near Artola, Distt. Almora. Balapure & Pandey, 93419.

**Mahonia nepalensis** DC.

Syn. *Berberis nepalensis* Spring in part.

A hardy shrub with yellow flowers and leaves. Common. Khati to Dhakuri, 2438 m. Awasthi, 931, also Balapure & Pandey, 72776. Vern. Kaerua.

FUMARIACEAE

**Corydalis vaginans** Royle

Syn. *C. ramosa* Wall.

Herb with blue flowers. Quite common on rocks. Dhakuri to Khati, 2438 m-1828 m. Balapure & Pandey, 91572, Dwali to Phurkia, along the Pindar river, Distt. Almora, 2743 m-3124 m. Balapure & Pandey, 93343, 93349 & 93362.

BRASSICACEAE (CRUCIFERAE)

**Capsella bursa-pastoris** (Linn.) Medic.

Herb with white flowers. Very common. Dwali to Kafni Glacier. 2743 m-3352 m. Balapure & Pandey, 93323.

**Thalspi arvense** Linn.

Herb with white flowers. Near Khati, 2286 m. Awasthi, 920.

**T. alpestre** Linn.

Herb with white flowers. Very common in moist shady places Phurkia to Pindari Glacier, 3124 m-3962 m. Balapure & Pandey, 93357.

VIOLACEAE

**Viola canescens** Wall.

Herb with light blue flowers. Very common in the shade of trees in moist places on the slopes of mountains. Khati to Dwali, on the bank of Pindar river, 2195 m-2743 m. Balapure & Pandey, 91590. Ranikhet, near about the town, 1900 m. Balapure & Pandey, 72722.

POLYGALACEAE

**Polygala abyssinica** Fresen.

Herb with pink flowers. Very common. Bharari to Loharkhet, 1005 m-1828 m. Balapure & Pandey, 93267.

CARYOPHYLLACEAE

**Cerastium vulgatum** Linn.

Small herb with small white flowers. Very common in moist shady places. Ranikhet 1900 m. Balapure & Pandey, 72701, Khati to Dwali, 2195 m-2743 m. Balapure & Pandey, 91596 & 91519.

**Arenaria orbiculata** Royle

Herb with white flowers. Very common. Dwali to Kafni Glacier, 2743 m-3352 m. Balapure & Pandey, 93316.

**A. festucoides** Benth.

Small herb with yellowish flowers. Growing in the shade of Dak bungalow at Dwali, 2743 m. Balapure & Pandey, 91588.

**A. serpyllifolia** Linn.

Caryophyllaceous herb with white flowers. Common. Between Loharkhet & Dhakuri, 1828 m.-2438 m. Balapure & Pandey, 91526.

HYPERICACEAE

**Hypericum oblongifolium** Choisy

Syn. *H. cernuum* Roxb.

Shrub with yellow flowers. Kapkot-Loharkhet (enroute to Pindari Glaciers), 1127 m-1219 m. Awasthi, 694 & Dhakuri hill, 2438 m. Awasthi, 936.

TERNSTROEMIACEAE

**Eurya acuminata** DC.

Shrub with white flowers. Near Khati, 2286 m. Awasthi, 912.

LINACEAE

**Reinwardtia trigyna** Planch

Under shrub with yellow flowers. Kapkot-Loharkhet, 1676 m. Awasthi, 691.

STERCULIACEAE

**Guazuma tomentosa** Kunth

A large tree. Bageshwar-Kapkot, 975 m-1066 m. Awasthi, 680.

RUTACEAE

**Zanthoxylum acanthopodium** DC.

Strong thorny hardy shrub with green fruits. Very common. Almora, on way to Kasar Devi; 1828 m-1981 m. Balapure & Pandey, 93244.

CELASTRACEAE

**Euonymus echinatus** Wall.



Small shrub with whitish yellow flowers. Loharkhet-Dhakuri, 2590 m. Awasthi, 713.

**E. tingens** Wall.

Small tree with yellow white, purple veined flowers. Khati to Dwali ; 2438 m.

RHAMNACEAE

**Govania leptostachya** DC.

Climbing shrub. Almora, 1828 m. Awasthi, 1933.

**Helinus lanceolatus** Brandis

Climbing shrub. Bageshwar-Kapkot, 1066 m. Awasthi, 675.

**Rhamnus virgatus** Roxb.

A spinous shrub. Dwali, 2590 m. Awasthi, 847. Vern. Chandkhala.

AMPELIDACEAE

**Parthenocissus semicordata** Planch.

Syn. *Vitis himalayana* Brand. var. *semicordata* Wall.

Large climber with small green buds. Quite common. Loharkhet-Dhakuri, 2590 m-2743 m enroute Pindari Glaciers, Awasthi. Also Dhakuri to Khati, 914 m-1828 m. Balapure & Pandey, 91537 & 91557.

**Vitis lanata** Roxb.

Climbing over high trees. Flowers yellow green in large panicles. Takula-Bageshwar, 1371 m. Awasthi, 641.

**V. parvifolia** Roxb.

Syn. *V. flexuosa* Thunb. var. *parvifolia* Gegnep.

Climber, flowers green. Near Kapkot, 1067 m. Awasthi, 671.

SAPINDACEAE

**Acer oblongum** Wall.

Large tree with winged fruits, Kapkot-Loharkhet, 1219 m. Awasthi, 685.

**A. villosum** Wall. var. **thomsonii**

A tree. Dhakuri-Khathi, 2133 m. Awasthi, 789, Vern. Khamia.

**A. caesium** Wall.

Very large tree with winged fruits. Very common and dominant species in the forest. Khati to Dwali, on the bank of Pindar river. Balapure & Pandey, 93306 & 93351.

CORIARIACEAE

**Coriaria nepalensis** Wall.

Scandant shrub. Flowers white. Near Bassauli, Takula, 1371 m. Awasthi 585. Also Ranikhet. Balapure & Pandey, 72744 & 72726.

PAPILIONACEAE

**Caragana nubigena** Bunge

Syn. *C. crassicaulis* Benth. ex Baker

Shrub with yellow flowers. Near Pindari Glaciers, 3784 m. Awasthi, 906. Vern. Lachenchu.

**Desmodium laburnifolium** DC.

Shrub with white flowers. Askot, 1219 m. Awasthi, 1947.

**Indigofera dosua** Buch-Ham.

Shrub with pink flowers. Very common. Jageshwar temple near Artola. Almora Distt. 1828 m. Almora, 1981 m. Awasthi, 559. Also Balapure & Pandey, 93400.

**I. atropurpurea** Buch.-Ham.

Syn. *I. pulchella* Roxb.

Shrub with bright pink flowers. Near Khati, 2316 m. Awasthi, 815.

**Lespedeza stenocarpa** Maxim

Syn. *L. microcarpa* Baker

Shrub with deep red flowers. Takula hill. Awasthi, 610.

**Tephrosia candida** DC.

A low shrub with reddish or white flowers. Almora, Chalthi river, 1219 m. Awasthi, 605 & 2018.

**Vicia tenera** Grah.

Herb with pink flowers. Takula hill. Awasthi, 605.

**V. hirsuta** (Linn.) Gray

Herb with small pods. Common. Dhakuri to Khati, 2438-1828 m. Balapure & Pandey, 91575.

**Alysicarpus monilifer** DC.

Herb. Common. Jageshwar temple, Artola, 1828 m, Almora. Balapure & Pandey, 93401.

CAESALPINIACEAE

**Cassia laevigata** Willd.

Bageshwar-Kapkot, 975 m-1066 m. Awasthi, 662.

MIMOSACEAE

**Acacia decurrens** Willd.

Almora, 1981 m. Hira Lal, 5200.

**Albizia stipulata** Boiv.

Very large tree with white flowers. Common in the forest. Bharari to Loharkhet, 1005 m-1828 m. Balapure & Pandey, 93265; Also Bageshwar to Kapkot 1005 m. Awasthi 655; also Almora. Balapure & Pandey, 93273 & 93264.

ROSACEAE

**Duchesnea indica** Focke

Syn. *Fragaria indica* Andr.

Soft silky herb with yellow flowers. Khati, 2316 m. Awasthi, 810.

**Potentilla argyrophylla** Wall. ex Lehm. var. **leucochroa**

Herb with yellow flowers. Pindari Glaciers, Bis Ram, 2350 (DD Herb.)

**Prunus domestica** Linn.

Syn. *P. communis* Hudson.

Small tree with white flowers. Takula, 1310 m. Awasthi, 620 and also Loharkhet-Dhakuri, 2590 m. Awasthi, 754. Vern. Tumdiya Nashpati. Cultivated.

**P. armeniaca** Linn.

Large tree with rounded woolly fruits. Cultivated. Vern. Khubani, Pulma. Almora, on way to Kasar Devi, 1828 m-1981 m. Balapure & Pandey, 93218.

**Pyrus lanata** D. Don

Tree with white flowers. Dhakuri hill, 2590 m. Awasthi, 782.

**Rosa moschata** Mill.

Large thorny shrub with beautiful pink flowers. Very common. Takula-Bageshwar, 1219 m. Awasthi, 631. Also Bharari to Loharkhet, 1005 m-1828 m. Balapure & Pandey, 93248. Dhakuri to Khati, 2438 m-1828 m. Balapure & Pandey, 91547.

**Rubus ellipticus** Smith

Large shrub with white flowers. Almora, 1985 m. Awasthi, 534. Vern. Hissalu.

**R. macilentus** Camb.

Trailing shrub with white flowers. Common. Jageshwar temple, Artola, Almora Distt. 1828 m. Balapure & Pandey, 93391.

**R. biflorus** Buch.-Ham. ex Smith

A straggling shrub with spinescent stem. Flowers white. Common. Dhakuri to Khati, 2438 m-1828 m. Balapure & Pandey, 91574.

SAXIFRAGACEAE

**Saxifraga pulvinaria** H. Sm.

Syn. *S. imbricata* Royle

Herb with whitish flowers. Very common. Phurkia to Pindari Glaciers, along the bank of Pindar river, 3124 m-3962 m. Balapure & Pandey, 93360. Furkia, 3352 m. Awasthi, without no.

**S. ligulata** Wall.

Syn. *Bergenia ligulata* Engl.

Herb. Flowers white or rose purplish, near Dwali, 2438 m-2590 m. Awasthi, 872. Also Almora, 1984 m. Awasthi, 543. Vern. Sadbadua.

**S. oppositifolia** Linn.

Herb with white flowers, very common. Near Pindari Glaciers, 3479 m. Awasthi, 882. Also Dwali to Phurkia along Pindar river 2743 m -3124 m. Balapure & Pandey, 93344.

**Hydrangea macrophylla** Ser.

Trailing shrub. Common. Jageshwar temple near Artola, Almora Distt. 1828 m. Cultivated. Balapure & Pandey, 93391.

CRASSULACEAE

**Sedum rosulatum** Edgew.

Succulent herb with white flowers. Dhakuri, 2590 m-2743 m. Awasthi, 726. Also Khati-Dwali, 2438 m-2590 m. Awasthi, 853.

**S. linearifolium** Royle

Syn. *S. trifidum* Wall.



Succulent herb with pale pink flowers. Dr. Rao's record is from Khati to Dhakuri  
Pass while our record is from Kafni Glacier. Bis Ram (D D Herb.) date 11.10.1933.

#### HALORAGACEAE

##### **Callitriche stagnalis** Scop.

Spreading herb. Common near the lake in a ditch. Bhimtal lake, Nainital,  
1400 m. Balapure & Pandey, 72759

#### ONAGRACEAE

##### **Oenothera rosea** Ait.

Herb with pink flowers. Takula-Bageshwar, 1219 m. Awasthi, 623.

#### UMBELLIFERAE

##### **Bupleurum falcatum** Linn.

Perennial herb with yellow flowers. Takula hill, 2133 m. Awasthi, 600.

##### **Vicatia multifolia** C. B. Cl.

Herb. Near Khati, 2316 m., Awasthi, 808.

##### **V. millefolia** (Klotzsch.) C. B. Cl.

Herb with yellow flowers. Rare. Between Loharkhet & Dhakuri. Balapure  
& Pandey, 91523.

##### **V. conifolia** DC.

Herb with yellow flowers. Dwali, 2743 m on the main route to Pindari glaciers.  
Bis Ram (DD Herb.), 12.6.1933.

#### CORNACEAE

##### **Cornus capitata** Wall.

Large shrub with pale yellow flowers. Takula, 1676 m. Awasthi, 608.

##### **C. macrophylla** Wall.

Large tree. Takula-Bageshwar, 1371 m. Awasthi, 647.

#### ALANGIACEAE

##### **Alangium chinensis** (Lour.) Merrill

Syn. *Marlea chinensis* (Lour.) Parker syn. *A. obtusifolia* Roxb.

Kapkot-Loharkhet, 1066 m. Awasthi, 684.

#### CAPRIFOLIACEAE

##### **Lonicera angustifolia** Wall.

Shrub with white flowers. Near Dwali, 2590 m. Awasthi, 843.

##### **Viburnum cylindricum** Buch.-Ham. ex D. Don

Syn. *V. coriaceum* Bl.

Shrub with white flowers. Takula, 1828 m. Awasthi, 615.

##### **V. colebrookianum** Wall

Large spreading shrub with white flowers. Loharkhet to Dhakuri, 2286m-2438  
m. Awasthi, 752.

**V. erubescens** Wall.

Tree with white flowers. Very common. Between Loharkhet and Dhakuri, 2438 m. Balapure & Pandey, 91507.

**V. nervosum** D. Don.

Tree with greenish fruit. Leaves scented like "Curry leaf." Very common. Dwali to Kafni, 2743 m-3352 m. Balapure & Pandey, 93335.

RUBIACEAE

**Uncaria pilosa** Roxb.

Climbing shrub. Bageshwar-Kapkot, 1005 m. Awasthi, 658.

**Wendlandia puberula** DC.

Small shrub. Flowers white. Near Kapkot, 1066 m. Awasthi, 942.

VALERIANACEAE

**Valeriana pyrolaefolia** Decaisne

Herb with violet flowers. Very common. Near Furkia, 3048 m. Also Dwali to Phurkia, along Pindar river, 2743 m-3124 m. Balapure & Pandey, 93341 & 93348.

COMPOSITAE

**Cnicus argyranthus** Cl.

Herb with pinkish heads. Very common. Takula-Bageshwar, 1219 m-1371 m. Awasthi, 629. Also Jageshwar temple near Artola, Almora, 1828 m. Balapure & Pandey, 93407.

**Sonchus brachyotes** DC.

Syn. *S. arvensis* auct. non Linn.

Herb with yellow heads. Almora-Takula, 1676 m. Awasthi, 575.

**Inula grandiflora** Willd.

Shrub with yellow heads. Dwali Pindari V. 2743 m. Collector's name and number not clear (DD Herb.).

**Aster peduncularis** Wall. ex Nees

Syn. *A. asperulus* Nees

Herb with purple flowers. Furkia, 3225 m. Bis Ram No. Nil (DD Herb.)

**A. multiradiatus** Bth.

Herb. Kafni, 3300 m. Bis Ram (DD. Herb.)

**Senecio nudicaulis** Buch.-Ham.

Herb with yellow heads. Almora-Takula, 1676 m. Awasthi, 565.

**S. chrysanthemoides** DC.

Herb with yellow heads. Kafni, 3300 m. Bis Ram No. Nil. 11.10.1933 (DD Herb.)

**Lactuca dissecta** D. Don

Herb with pale blue flowers. Takula-Bageshwar. 1219 m-1371 m. Awasthi, 629.

**Cicerbita macrorhiza** (Royle) Beauv.

Syn. *Lactuca macrorhiza* Hook. f.



Herb with bluish flowers. Kafni 3300 m. No. Nil., 11.10.1933. Bis Ram (DD Herb.)

**Youngia japonica** DC.

Syn. *Crepis japonica* Benth.

Herb with small yellow heads. Very common in shade of trees in moist places. Khati to Dwali on the bank of Pindar river 2133 m-2438 m. Balapure & Pandey, 91589.

**Erigeron alpinus** Linn.

Herb with white heads. Very common. Dhakuri to Khati, 2438 m-1828 m. Balapure & Pandey, 91569.

CAMPANULACEAE

**Campanula cashmiriana** Royle

Herb with bright blue flowers. Loharkhet-Dhakuri, 2286 m-2438 m. Awasthi, 747.

ERICACEAE

**Lyonia ovalifolia** (Wall.) Drude

Syn. *Pieris ovalifolia* D. Don

Small tree with white flowers. On way to Takula, Almora, 1676 m. Awasthi, 581. Also Donagiri hills, Almora B. Devi, 42026.

**Rhododendron barbatum** Wall.

Tree in fruiting state. Very common. Near Furkia, 3048 m. Awasthi, 876. Also on Dhakuri hill 2743 m. Awasthi, 729. Also Furkia to Pindari Glaciers, along the bank of Pindar river, 3124 m-3962 m. Balapure & Pandey, 93366.

PRIMULACEAE

**Primula geranifolia** Hook. f.

Herb. Khati-Dwali, 2133 m-2438 m. Awasthi, 854.

**P. edgeworthii** Pax.

Near Furkia 3048 m. Awasthi, 893. Also Dhakuri, 2743 m-2895 m. Awasthi, 771.

**P. floribunda** Wall.

Herb with blue flowers. Balapure & Pandey, 93346. Very common. Dwali to Furkia, 2743 m.-3124 m. Also Khati to Dwali, on the bank of Pindar river, 2133 m-2438 m. Balapure & Pandey, 93317.

**P. bracteata** Craib.

Herb with white flowers. Very common. Dwali to Furkia along the Pindar river, 2743 m-3124 m. Balapure & Pandey, 93345.

**Androsace lanuginosa** Wall.

Small herb with white flowers. Very common. Loharkhet-Dhakuri, 1828 m-2438 m Hira Lal, Also Dwali to Kafni glacier, 2743 m-3352 m. Balapure & Pandey, 93309.

**A. rotundifolia** Hardwick.

Herb with pinkish flowers in umbels. Very common in the shade of trees in moist

places. Khati to Dwali, on the bank of Pindar river, 2133 m-2438 m., Balapure & Pandey, 91581.

**A. saxifragaefolia** Bunge

Herb. Common. Bharari to Loharkhet, 1005 m-1828 m. Balapure & Pandey, 93296.

MYRSINACEAE

**Maesa indica** (Roxb.) Wall.

Large shrub with white flowers. Near Bageshwar, 1005 m. Awasthi, 568.

SYMPLOCACEAE

**Symplocos ramosissima** Wall.

A shrub. Kathi, 2286 m. C. E. Parkinson, 12 June, 1935 (DD Herb.)

OLEACEAE

**Jasminum humile** Linn.

Shrub with beautiful yellow flowers. Common on the slope of mountain in the shade of trees. Khati to Dwali, 2438 m. Awasthi, 848. Also Balapure & Pandey, 93302.

**Ligustrum compactum** Hk. f.

Shrub with white flowers. Basali near Almora, Awasthi, 586.

ASCLEPIADACEAE

**Asclepias curassavica** L.

Tall herb with beautiful scarlet flowers. Bharari to Loharkhet, 1005 m-1828 m. Balapure & Pandey, 93241.

**Hoya lanceolata** Wall.

Askot, 1371 m. Osmoston, 3.1.1932 (DD Herb.)

**Pergularia pallida** W. & A.

A twining shrub with yellowish green flowers. Kapkot-Bageshwar, 1005 m. Awasthi, 980.

GENTIANACEAE

**Gentiana pedicellata** Wall.

Almora, Wazirgarh, Awasthi, 2438.

CONVOLVULACEAE

**Porana racemosa** Roxb.

A twining shrub with white flowers. Sama-Kapkot, 1005 m. Srivastava, 689.

SOLANACEAE

**Solanum incanum** L.

Spinescent shrub with green fruits, mature fruits yellow. Quite common. Jageshwar temple, Artola, Almora. Balapure & Pandey, 93414.

SCROPHULARIACEAE

**Lindenbergia macrostachya** Benth.

Herb. Common. Bageshwar-Kapkot, 975 m-1066 m. Awasthi, 676. Also Bharari to Loharkhet, 975 m-1066 m. Balapure & Pandey, 93274.

**Mazus japonica** (Thunb.) Kuntze

Syn. *M. rugosus* Lour.

Herb with pale blue or white flowers. Bageshwar, Kaul & Party, 19322.

**Veronica anagallis** L.

Herb with purple or white flowers. Near Loharkhet, 1737 m. Awasthi, 701.

**Wulfenia amherstiana** Benth.

Herb. Flowers drooping, blue purple varying to white. Very common. Bharari to Loharkhet, 1005 m-1828 m. Balapure & Pandey, 93254.

#### ACANTHACEAE

**Lepidagathis cuspidata** Nees

Bageshwar to Kapkot, 1066 m. Awasthi, 701.

#### LABIATAE

**Ajuga parviflora** Benth. var. **depressa**

Herb with blue flowers. Near Furkia, 3048 m. Awasthi, 896.

**Pogostemon bengalensis** (Benth.) O. Ktze.

Takula-Bageshwar, 1219 m. Awasthi, 688.

**Roylea elegans** Wall.

Shrub. Flowers white tinged with pink. Bageshwar-Kapkot, 1066 m. Awasthi, 677.

**Salvia coccinea** L.

Kapkot-Bageshwar, Srivastava, 54023.

**S. psuedo-coccinea** Jacq.

Kapkot-Bageshwar, 1066 m. Awasthi, 986.

**Teucrium royaleanum** Wall.

Herb. Flowers white. Near Bageshwar, 975 m. Awasthi, 651.

**Phlomis bracteosa** Royle

Herb with densely hairy stem. Flowers dull blue purple. Very common. Dwali to Kafni, 2743 m-3352 m. Balapure & Pandey, 93328 & 93330.

#### AMARANTHACEAE

**Aerva lanata** Juss.

Near Dhakuri, 2438 m, Awasthi, 733.

#### PHYTOLACCACEAE

**Phytolacca acinosa** Roxb.

Tall herb with white flowers. Commonly cultivated at Khati. 2225 m. Balapure & Pandey, 93388.

#### POLYGONACEAE

**Polygonum chinense** Linn.



Shrub with white or pink flowers. Loharkhet, 1676 m. Awasthi, 922.

**P. microcephalum** D. Don

Herb with pink flowers. Very common. Phurkia to Khati, along the bank of Pindar river, 3124 m-2286 m. Balapure & Pandey, 93377.

**Rumex dentatus** Linn.

Herb with greenish flowers. Very common in moist places. Khati to Dwali, on the bank of Pindar river, 2133 m-2438 m. Balapure & Pandey, 91579. Dr. Rao's record is from Nainital.

LAURACEAE

**Machilus gamblei** King ex Hook. f.

Medium-sized tree, with yellowish green flowers. Takula-Bageshwar, 1524 m. Awasthi, 635. Vern. "Kaula".

**M. duthiei** King ex Hook. f.

Tree with pale yellow flowers. Khati-Dwali, 2438 m. Awasthi, 861.

**Persea odoratissima** (Nees) Kosterm.

Syn. *Machilus odoratissima* Nees

Tree with pale yellow flowers. Loharkhet, 1371 m. Awasthi, 941. Vern. Kaua.

**Lindera pulcherrima** Bth.

Large tree. Near Khati, 2346 m. Awasthi, 794.

ELAEAGNACEAE

**Elaeagnus umbellata** Thunb.

Shrub with white flowers. Near Khati, 2316 m. Awasthi, 802. Also from Loharkhet-Dhakuri, 2133 m-2438 m. Awasthi, 742.

LORANTHACEAE

**Dendrophthoe falcata** (Linn. f.) Etting.

Syn. *Loranthus falcatus* Linn. f. Syn. *Loranthus longiflorus* Desr. var. *falcata*

Parasite on a large tree. Not very common. Between Loharkhet & Dhakuri, Balapure & Pandey, 91544.

EUPHORBIACEAE

**Baliospermum axillare** Bl.

Shrub near Bageshwar, 914 m. Awasthi, 652.

**Sapium sebiferum** Roxb.

Small glabrous tree, Takula, 1524 m. Awasthi, 574, Dr. Rao's record is from Bhim Tal 1400 m. which is off the route from Pindari glaciers.

**S. insigne** Benth.

Small tree. Takula, 6-8 Km from Bageshwar, 1524 m. Awasthi, 643. Vern. Khiro.

**Croton tiglium** Linn.

Large shrub with white flowers. fruit green. Very common. Bharari to Loharkhet, 1005 m-1828 m., Balapure & Pandey, 93266. Naturalized along the road.

## MORACEAE

### **Ficus roxburghii** Wall.

A spreading tree. Takula, 1615 m. Awasthi, 614. Vern. Timula.

### **F. pubigera** Wall.

Askot, 1371 m-1524 m. Awasthi, 854.

### **F. clavata** Wall.

An erect shrub. Takula, 1676 m. Awasthi, 613.

### **F. carica** Linn.

Tree with fruits. Common. Bharari to Loharkhet 1005 m-1828 m. Balapure & Pandey, 93243.

## BETULACEAE

### **Alnus nitida** Endl.

Tree. Loharkhet-Dhakuri, 2286 m. Awasthi, 715.

### **Betula alnoides** Buch.-Ham.

Dhakuri-Khati, 2346 m. Awasthi, 800.

## SALICACEAE

### **Salix wallichiana** Anders.

Shrub. Near Dwali along river. Awasthi, 913.

## CONIFERAE

### **Abies webbiana** Lindl.

Syn. *A. spectabilis* Royle

Tree. Dhakuri hill, 2590 m. Awasthi, 763.

## MONOCOTYLEDONS

## ORCHIDACEAE

### **Calanthe tricarinata** Lindl.

Flowering stem. Flower sepal and petals green outside, edged with white, pale yellow green inside. Near Khati, 2133 m. Awasthi, 823.

### **Coelogyne ovalis** Lindl.

Baram Gorichal, Askot, No. 1828. 16.10.50.

### **Luisia inspicua** Hk. f.

Bagrihat-Askot, 914 m on mango tree. Awasthi.

### **Oberonia ensiformis** Lindl.

Near Kapkot bridge 1066 m. Awasthi, 937. Although Dr. Rao has mentioned this species, the name of the locality is not given.

## SCITAMINEAE

### **Roscoea alpina** Royle

Leafy stem with dark purple flowers. Low herb found on wet-ground Dhakuri, C. E. Parkinson 5996. (DD Herb.) collected on 13th June, 1935.

## DIOSCORIACEAE

### **Dioscorea glabra** Roxb.

Climbing plants. Kapkot-Bageshwar. Srivastava 54059.

## LILIACEAE

### **Smilax elegans** Wall.

Climbing shrub. Dhakuri hill. 3048 m. Awasthi, 784.

### **S. glaucophylla** Klotzsch.

Syn. *S. parvifolia* Wall.- ex Hook. f.

Climbing shrub. Flowers minute, purple. Kapkot-Loharkhet, 1219 m. Awasthi, 702.

### **S. macrophylla** Roxb.

A large climber with globular fruits. Common. Ranikhet, Balapure & Pandey, 72708.

### **Trillium govanianum** Wall.

A glabrous herb with purple flowers. Dhakuri hill, 2590 m. Awasthi, 758.

## JUNCACEAE

### **Juncus bufonius** L.

A small, pale coloured, tufted herb. Bageshwar, 975 m. Kaul & Party, 9269.

## ARACEAE

### **Arisaema curvatum** Kunth

A tender herb. Quite common in shade under the Rhododendron tree. Between Loharkhet and Dhakuri, 1828 m-2438 m. Balapure & Pandey, 91555.

### **A. wallichianum** Hk. f.

Tender herb with beautiful dark green and black hood. Quite common in moist places under Rhododendron. Loharkhet and Dhakuri, 1828 m-2438 m. Balapure & Pandey, 91549 & 91556.

## CYPERACEAE

### **Carex obscura** Nees

Kafni Glacier, 3300 m. Bis Ram 2133, collected on 23.6.1933 (DD Herb.).

### **C. condensata** Nees

Near Askot 1219 m. Duthie 6103. Collected on 7.7.1886 (DD Herb.).

## GRAMINEAE

### **Arundinella nepalensis** Trin.

Bageshwar, 975 m. Kaul & Party 19264.

### **Cymbopogon martinii** Stapf

Patsali, Almora, 1524 m. Awasthi, 1322.

### **Chrysopogon montana** Trin.

Almora, 2000 m. Awasthi, 1325.



**Festuca ovina** Linn.

Khati, 2300 m. Awasthi.

**Rottboellia exaltata** Linn. f.

Askot, 1219 m. Awasthi.

**Pyrrosia mannii** (Giels) Ching

Very common on trees. Jageshwar, near Artola, Almora 2000 m. Balapure & Pandey, 93405.

**Botrychium lanuginosum** Wall.

Dhaulchhina hills, Almora, 2000 m. Awasthi, 1374.

**Osmunda claytoniana** Linn.

Near Khati, Awasthi, 787. Dhakuri hills, Awasthi, 787 & 760.

**O. regalis** L.

Near Khati, 2300 m. Awasthi. 786.

**Deunstadtia appendiculata** (Wall.) J. Sm.

Loharkhet-Dhakuri Hill, Awasthi, 734.

**Polystichum stimulans** Pr.

Khati. 2300 m. Awasthi, 836.

**P. squarrosus** (D. Don) Fee.

Almora, 9 miles to Takula, Awasthi, 571.

**P. aculeatum** (L.) Roth.

Khati, 2300 m. Awasthi, 788.

**Cyrtomium caryotidum** (Wall. ex. Hooker et Grev.) Pr.

Khati, 2300 m. Awasthi, 840.

**Woodwardia radicans** (L.) Sm.

Almora, 9 miles, Takula, Awasthi; 570. Also Khati. 2300 m. Awasthi 841.

**Arthromeris wallichiana** (Spr.) Ching

Dorahal, Dunagiri, Almora 2000 m, Bhagirathi Devi 12045.

**Vittaria fluxuosa** Fee

On the bank of river, Khati 2300 m, Awasthi 838.

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