

A Contribution to the Flora of Rajouri and Poonch Districts in the Pir Panjal Himalaya (Jammu & Kashmir), India

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ABSTRACT: The current paper provides a taxonomic inventory of the vascular plant species collected by the authors during the last two decades from the Rajouri and Poonch districts, located along the Pir Panjal range in the Indian Himalayan State of Jammu and Kashmir. The inventory records a total of 352 species, which belong to 270 genera in 83 families. Of the total taxa, the angiosperms are represented by 331 species in 253 genera and 77 families; gymnosperms by 12 species in 9 genera and 3 families; and pteridophytes by 9 species in 7 genera and 3 families. Asteraceae is the largest family, contributing 42 species; while Artemisia is the largest genus, with 5 species. The inventory is expected to provide baseline scientific data for further studies on plant diversity in these two border districts, and can be used to facilitate the long-term conservation and sustainable use of plant resources in this Himalayan region.

INTRODUCTION

Of the various environmental problems faced in modern times, the loss of biodiversity is the most serious one. The unprecedented rate of species extinction, mainly driven by unbridled human activities, is fraught with grave economic and ecological consequences. The global diversity of biota on the planet Earth is, however, so vast that only 1.7 % of it is scientifically known (Dar and Farooq 1997); this poses problems in assessing the taxa that are lost. Given such a perilous state of affairs, taxonomic inventory of biodiversity has gained much urgency worldwide. The situation is particularly pronounced in the developing world, which coincidentally harbors the richest but the most threatened biodiversity (Khuroo *et al.* 2008).

In the Himalaya, recognized as a global biodiversity hotspot (Mittermeier *et al.* 2005), crucial taxonomic information about many of its regions is still not available. The Indian State of Jammu and Kashmir (J & K) in the Western Himalaya is one such region which has been recognized as floristically under-explored by the Botanical Survey of India (Dar *et al.* 2012). Biogeographically, J & K State comprises three distinct provinces: the subtropical Jammu, the predominantly temperate Kashmir, and the cold-arid Ladakh. Owing to great variety of habitats all along these provinces, the State is very rich in floristic diversity. Its flora has attracted the attention of many foreign and local botanists since the last about two centuries. Many of its plants are cited in the illustrious works of Hooker (1872-97) and Stewart (1972).

In J & K State, Jammu province possesses the greatest floristic richness. Several taxonomic studies dealing with floristic diversity of this province have been carried out over the last three decades. Sharma and Kachroo (1981-82) published the Flora of Jammu and adjacent areas, providing taxonomic details in Vol. 1 and illustrations in Vol. 2. Kapur and Sarin (1990) dealt with the flora of

Trikuta hills, presenting a good floristic account of the plants harboring these hills and the surroundings of Shri Vaishno Devi Shrine. Swami and Gupta (1998) published the Flora of Udhampur district, which is a useful treatise on the higher plants of this region. Bhellum and Magotra (2012) catalogued the flowering plants of Doda, Kishtwar and Ramban districts, dealing with floristic richness of these three adjacent districts in the Chenab Valley.

The Rajouri and Poonch, however, are floristically the least surveyed districts in the Jammu province, with scanty and scattered information available on their flora [Singh and Kirn (1981); Kirn (1992); Singh (1992); Vir Jee *et al.* (1984); Dar *et al.* (2009); Malik *et al.* (2010)]. All these publications are preliminary short communications, none having attempted an inventory of plants occurring in these two districts. To bridge this knowledge gap, the results of the plant surveys and collections from these two districts for over two decades are consolidated in the present paper, with a view to facilitate complete floristic inventorization of the whole region.

MATERIALS AND METHODS

Study Area

The Rajouri and Poonch districts are located on the southerly foothills of the Pir Panjal Himalaya in the Indian State of Jammu and Kashmir. The two districts represent a transition zone between the subtropical Jammu and the temperate Kashmir provinces. Whereas the Rajouri district is located at 32°57' to 33°34' N latitudes and 74°00' to 74°48' E longitudes, the Poonch district is located between 33°28' to 34°00' N latitudes and 73°56' to 74°32' E longitudes (Figure 1). The Rajouri district comprises seven tehsils, which cover a total area of 2,630 km², out of which forests constitute 1,267 km² (48.17 %). The Poonch district on the other hand comprises four tehsils, which cover a total area of 1,674 km² out of

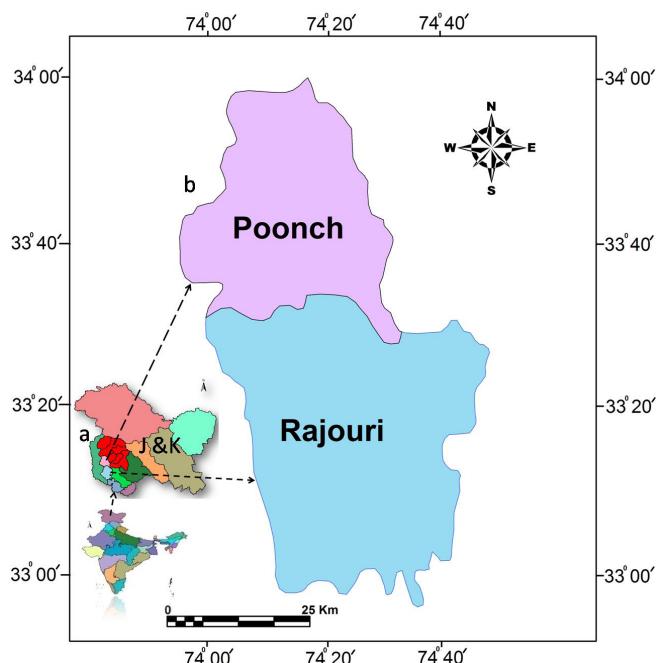


FIGURE 1. Location map of the study area: a) Jammu and Kashmir (J & K) State, India; b) Rajouri and Poonch districts.

which forests are spread over 951 km² (56.81 %). Both these districts are strongly undulated to mountainous, with most of the population (about 96 %) living in isolated villages (Anonymous, 2012). The topography is varied with peculiar physical features; most of the cultivated land exists in upland areas, with maize being the staple food of people in the area. The climate in both these districts is broadly subtropical, although the foothill areas along the Pir Panjal range show dry temperate conditions, while subalpine and alpine conditions prevail higher up in the mountains.

The vegetation usually comprises Chir-pine (*Pinus roxburghii*) forests, broad-leaved deciduous forests, broad-leaved evergreen forests, scrub forests, interspersed with frequent grassland patches and agricultural croplands. The Pir Panjal mountain range, generally with steep slopes and gradual ascendance in altitude, exhibits a climatic gradient from temperate through subalpine to alpine in the uppermost reaches. Commensurate with these wide climatic conditions, the flora of the region depicts rich diversity.

Taxonomic identification

The present paper is the result of detailed field studies made during the floristic surveys conducted in the Rajouri-Poonch districts from 1987-1988, in 1993, and again from 2008-2010. During these surveys, plants were collected from diverse habitats in different areas of the twin districts. During collection, detailed field observations were recorded, including notes on ethnobotanical uses of various plants by the local people. The collected plant specimens were properly processed following standard

herbarium techniques, and identified at the Centre for Biodiversity and Taxonomy, University of Kashmir, using relevant Floras and other available taxonomic literature (Hooker, 1872-97; Stewart, 1972; Sharma and Kachroo, 1981-82) and online resources, such as Flora of Pakistan and Flora of China. Identifications were in some cases verified against previously identified herbarium specimens at the Kashmir University Herbarium (KASH). The exsiccatae of all the plant species included in this paper are deposited in KASH.

RESULTS

The present paper for the first time provides an inventory of 352 species of vascular plants collected by the authors from various areas in the Rajouri and Poonch districts of Jammu province in the J & K State.

Taxonomic enumeration

The sequence of plant groups in this enumeration starts with pteridophytes, followed by gymnosperms and then angiosperms. Within each of these plant groups, the families, genera and species are arranged alphabetically in tabular form. For each of the species, its current valid name and author citation is provided in the first column; while in the second column details of exsiccatae are given, including district and local area of collection, altitude of the area, date of collection, name of the collector(s) and collection number (s) [Table 1]. For some species, brief and helpful field/lab taxonomic notes are also appended.

DISCUSSION

Rajouri and Poonch, two border districts located on southerly foothills of the Pir Panjal Himalaya are botanically the least surveyed areas in the Jammu province of Jammu & Kashmir State, with very little and preliminary information available on their flora. Singh and Kirn (1981) provided a list of some alpine plants of Poonch; Kirn (1992) presented a brief account of some medicinal plants of Pir Panjal Range; Singh (1992) gave an introductory account of some wild flowering plants of Rajouri; Vir Jee *et al.* (1984) reported their concise taxo-ethnobotanical observations made in some rural areas of Rajouri; Dar *et al.* (2009) published an abstract of the inventory of higher plants of Rajouri; while Malik *et al.* (2010) listed some woody plants of Rajouri and Poonch in their paper on woody flora of Jammu & Kashmir. To augment the floristic knowledge of these areas, the present studies were undertaken.

In the present paper, the results of plant surveys and collections made from Rajouri-Poonch districts during the last two to three decades are consolidated, with a view to facilitate documentation of their overall floristic diversity. The inventory provided here records a total of 352 species of vascular plants, which belong to 270 genera in 83 families. Ethnobotanical notes are also appended with some taxa to document their traditional uses.

TABLE 1. Enumeration of plants collected from Rajouri and Poonch districts in Jammu & Kashmir State of India.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|---|--|
| Pteridophytes | |
| Aspleniaceae | |
| <i>Asplenium adiantum-nigrum</i> L. | Poonch, Bufliaz, 2000 m, 8.1.2010, Akhtar 1074. |
| Equisetaceae | |
| <i>Equisetum arvense</i> L. | Poonch, Bufliaz, 1900 m, 8.1.2010, Akhtar 990. |
| Pteridaceae | |
| <i>Adiantum capillus-veneris</i> L. | Poonch, Bufliaz, 1900 m, 8.1.2010, Akhtar 1274. |
| <i>Adiantum incisum</i> Forssk. | Poonch, Behramgali, 2300 m, 8.1.2010, Akhtar 913. |
| <i>Cyrtomium caryotideum</i> Presl. | Poonch, 950 m, 8.8.1986, Kachroo 9796. |
| <i>Dryopteris barbigera</i> O. Kze. | Poonch, Behramgali, 2300 m, 8.1.2010, Akhtar 912. |
| <i>Polystichum lonchitis</i> (L.) Roth. | Poonch, Surankote, 1500 m, 8.1.2010, Akhtar 1075. |
| <i>Pteris cretica</i> L. | Poonch, Behramgali, 2150 m, 8.1.2010, Akhtar 1201. |
| <i>Pteris vittata</i> L. | Poonch, Behramgali, 2150 m, 8.1.2010, Akhtar 901. |
| Gymnosperms | |
| Cupressaceae | |
| <i>Cryptomeria japonica</i> D. Don | Poonch, Govt. Degree College, 950 m, 18.1.1993, Mukhtar s. n.; Rajouri, Agriculture Dept. Office, 910 m, 9.1.1993, G. H. Dar 9954. |
| <i>Cupressus funebris</i> Endl. | Poonch, District Forest Office, 950 m, 4.1.1993, G. H. Dar 9997. |
| <i>Cupressus sempervirens</i> L. | Rajouri, District Forest Office, 910 m, 4.1.1993, Mukhtar s. n. |
| <i>Cupressus torulosa</i> D. Don | Rajouri, District Forest Office, 910 m, 4.1.1993, G. H. Dar 9994. |
| <i>Juniperus chinensis</i> Linn. | Rajouri, District Forest Office, 910 m, 4.1.1993, G. H. Dar 9997. |
| Cycadaceae | |
| <i>Cycas revoluta</i> Thunb. | Poonch, Govt. Degree College, 950 m, 18.1.1993, Mukhtar s. n. |
| Pinaceae | |
| <i>Abies pindrow</i> Royle | Poonch, Lohren, 2220 m, 5.1.2010, Akhtar 1161. |
| <i>Cedrus deodara</i> (Roxb.) G. Don | Poonch, Bufliaz forest, 2000 m, 5.1.2010, Akhtar 1267. |
| <i>Picea smithiana</i> (Wall.) Boiss. | Poonch, Bufliaz forest, 2100 m, 5.1.2010, Akhtar 1667. |
| <i>Pinus roxburghii</i> Sargent | Poonch, Mendhar, 950 m, 10.1.2010, Akhtar 1208. |
| <i>Pinus wallichiana</i> A.B. Jackson | Poonch, Lohren, 2250 m, 8.1.2010, Akhtar 1237. |
| Taxaceae | |
| <i>Taxus wallichiana</i> Zucc. | Poonch, Bufliaz forest, 2150 m, 8.8.1987, G. H. Dar 9796. |
| Angiosperms: Dicotyledons | |
| Acanthaceae | |
| <i>Aechmanthera tomentosa</i> Nees. | Rajouri, Dudag, 1000 m, 20.1.2010, Akhtar 1058. |
| <i>Hemigraphis latebrosa</i> Nees | Rajouri, Darhal, 1650 m, 7.1.2010, Akhtar 1042. |
| <i>Justicia adhatoda</i> L. | Rajouri, Sunderbani, 600 m, 6.1.2010, Akhtar 1103. |
| <i>Justicia simplex</i> D. Don | Rajouri, Ujhan, 1000 m, 27.9.1988, G. H. Dar 9783. |
| <i>Lepidagathis incurva</i> Buch.-Ham. ex D. Don | Rajouri, Chingus (Nowshera), 860 m, 6.1.2010, Akhtar 1109; Rajouri, Chowdhary Nar, 1100 m, 2.3.1988, G. H. Dar 9613. |
| Amaranthaceae | |
| <i>Amaranthus caudatus</i> L. | Rajouri, Darhal-Poonch Road, 1300 m, 8.1.2010, Akhtar 1623. |
| <i>Amaranthus spinosus</i> L. | Rajouri, City, wastelands and roadsides, 950 m, 23.8.1987, G. H. Dar 9327. |
| <i>Amaranthus tricolor</i> L. | Rajouri, Behrote 1000 m, 22.12.1987, G. H. Dar 9499; Rajouri, Chowdhary Nar, 1050 m, 15.9.1987, G. H. Dar 9359, 9368; Rajouri, 20.11.1987, G. H. Dar 9467. |
| <i>Amaranthus viridis</i> L. | Rajouri, Kalakote, 750 m, 20.11.1987, G. H. Dar 9472; Rajouri, Palma, 950 m, 20.10.1987, G. H. Dar 9449. |
| <i>Achyranthes aspera</i> L. | Poonch, Bufliaz, 1900 m, 12.8.1987, G. H. Dar 9260. |
| <i>Achyranthes aspera</i> var. <i>argentea</i> Hook. f. | Rajouri, Shahdara Sharief, 1560 m, grassy roadsides, 16.8.1987, G. H. Dar 9285. |
| <i>Aerva sanguinilenta</i> (L.) Blume | Rajouri, Kheora, 1000 m, 16.8.1987, G. H. Dar 9375. |
| <i>Alternanthera sessilis</i> (L.) DC. | Rajouri, near Airport, 950 m, masonry bunds along roadsides, 4.8.1987, G. H. Dar 9240; Rajouri, 20.4.1988, G. H. Dar 9741. |
| <i>Celosia argentea</i> L. | Rajouri, Fatehpur, 960 m, 23.11.1987, G. H. Dar 9480. |
| <i>Gomphrena celosioides</i> Hart. | Rajouri, near Darhal bridge, along roadsides, 1200 m, 6.10.1987, G. H. Dar 9420. |
| Apiaceae | |
| <i>Bupleurum linearifolium</i> DC. | Noorichumb, 2200 m, 12.8.1987, G. H. Dar 9274. |
| <i>Coriandrum sativum</i> L. | Rajouri, Thanna Mandi, 1450 m, cultivated, 29.2.1988, G. H. Dar 9611; Rajouri, Fatehpur, 1100 m, 22.11.1987, G. H. Dar 9477; Rajouri, Behrote, 1100 m, 3.1.1988, G. H. Dar 9505. |
| <i>Daucus carota</i> L. | Poonch, Lohren, 2100 m, 10.1.2010, Akhtar 1408. |
| <i>Foeniculum vulgare</i> Miller | Rajouri, 950 m, 20.2.1988, G. H. Dar 9582. |
| <i>Pimpinella stewartii</i> (Dunn) E. Nasir | Rajouri, 950 m, single plant in flower bed, flowers white, 31.8.1988, G. H. Dar 9761. |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|---|--|
| <i>Scandix pecten-veneris</i> L. | Rajouri, 950 m, 5.3.1988, G. H. Dar 9657; Rajouri, Jawhar Nagar, 970 m, 15.2.1988, G. H. Dar 9560; Poonch, Lohren, 2100 m, 10.1.2010, Akhtar 1408. |
| Araliaceae | |
| <i>Hedera nepalensis</i> Koch. | Poonch, Bufliaz forest, 2200 m, 10.1.2010, Akhtar 1246; Rajouri, Palma, 1900 m, G. H. Dar 9299. |
| Asclepiadaceae | |
| <i>Pergularia extensa</i> N.E. Brown | Rajouri, roadsides, 950 m, 6.1.2010, Akhtar 1105 a. |
| <i>Vincetoxicum hirundinaria</i> Medicus | Rajouri, Nowshera road, 800 m, 6.1.2010, Akhtar 1105 b. |
| Asteraceae | |
| <i>Achillea millefolium</i> L. | Rajouri, Shahdara Sharief, 1550 m, grassy slopes along road, 16.8.1987, G. H. Dar 9286; Poonch, Bufliaz, 2100 m, 8.1.2010, Akhtar 1238. |
| <i>Anaphalis cinnamomea</i> C. B. Clarke | Rajouri, Ujhan, 1100 m, 27.9.1988, G. H. Dar 9772; Rajouri, Kheora, 1100 m, 20.10.1987, G. H. Dar 9447. |
| <i>Anaphalis contorta</i> Hook. f. | Rajouri, Ujhan, 1100 m, 20.11.1987, G. H. Dar 9476. |
| <i>Arctium lappa</i> L. | Poonch, Bufliaz, 1800 m, 9.1.2010, Akhtar 940. |
| <i>Artemisia absinthium</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1240. |
| <i>Artemisia vulgaris</i> L. | Rajouri: Dangri, and Poonch: Lohren, 2100 m, 5.1.2010, Akhtar 1081. |
| <i>Artemisia nilagirica</i> (Clarke) Pamp. | Rajouri, Kheora, 1000 m, 15.9.1987, G. H. Dar 9375. |
| <i>Artemisia parviflora</i> Roxb. | Rajouri, Palma, 1000 m, 15.10.1987, G. H. Dar 9431; Rajouri, Ujhan, 27.9.1988, G. H. Dar 9777. |
| <i>Artemisia tournefortiana</i> Reichb. | Rajouri, Rathal, 1210 m, 21.1.2010, Akhtar 1065. |
| <i>Aster albescens</i> Hand.-Mazz. | Poonch, 950 m, 16.8.1987, G. H. Dar 9865. |
| <i>Bidens chinensis</i> (L.) Willd. | Rajouri, Kheora, 1000 m, rays white, disk yellow, 19.10.1988, G. H. Dar 9796. |
| <i>Bidens tripartita</i> L. | Rajouri, Shahdara-Sharief, 1550 m, 20.1.2010, Akhtar 1062; Rajouri, Kheora, 1000 m, 15.3.1988, G. H. Dar 9665. |
| <i>Calendula officinalis</i> L. | Poonch, 950 m, 8.1.2010, Akhtar 959, cultivated. |
| <i>Carduus edelbergii</i> Rech. f. | Poonch, Lohren, 2200 m, 5.1.2010, Akhtar 955. |
| <i>Centaurea iberica</i> Trevex Spreng. | Poonch, Lohren, 2200 m, 5.1.2010, Akhtar 950. |
| <i>Cichorium intybus</i> L. | Rajouri, Kheora, 1000 m, 20.8.1988, G. H. Dar 9745. |
| <i>Cirsium arvense</i> (L.) Scop. | Poonch, Lohren, 2150 m, 5.1.2010, Akhtar 1555. |
| <i>Cirsium falconeri</i> (Hook. f.) Petrak | Poonch, Bufliaz forest, 2200 m, 5.1.2010, Akhtar 1555. |
| <i>Cirsium wallichii</i> DC. | Rajouri: Budhal, and Poonch: Lohren, 2150 m, 5.1.2010, Akhtar 1155. |
| <i>Conyza bonariensis</i> (L.) Cronquist | Rajouri, Darhal, 1550 m, 22.9.1987, G. H. Dar 4515; Poonch, Mendhar, 1000 m, 6.2.1988, G. H. Dar 9528. |
| <i>Conyza canadensis</i> (L.) Cronquist | Rajouri, Ujhan, 1100 m, 20.8.1988, G. H. Dar 9776; Rajouri, Shahdara Sharief, 1550 m, gravel slopes along road 16.8.1987, G. H. Dar 9287. |
| <i>Cotula anthemoides</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1643 a. |
| <i>Crepis sancta</i> Babc. | Poonch, Lohren road, 1800 m, 9.1.2010, Akhtar 1643 b. |
| <i>Echinops cornigerus</i> DC. | Poonch, Bufliaz, 2200 m, 20.10.2005, Z. S. Khan 1234. |
| <i>Galinsoga parviflora</i> Cav. | Rajouri, Shahdara Sharief, 1500 m, 12.7.1988, G. H. Dar 9569; Rajouri, Behrote, 1200 m, 10.1.1988, G. H. Dar 9506; Poonch, Lohren forest, 2100 m, 9.1.2010, Akhtar 1243. |
| <i>Gnaphalium luteo-album</i> L. | Rajouri, Jawhar Nagar, 950 m, 5.3.1988, G. H. Dar 9637; Rajouri, Darhal, 1600 m, 5.3.1988, G. H. Dar 9626 and 25.4.1988, G. H. Dar 9748; Moradpur, Nowshera, 830 m, 10.4.1988, G. H. Dar 9705. |
| <i>Helianthus annuus</i> L. | Rajouri, Rathal, 1200 m, 21.1.2010, Akhtar 1565, cultivated. |
| <i>Inula cappa</i> (Ham.) DC. | Rajouri, Palma, 1000 m, 20.10.1987, G. H. Dar 9452; Rajouri, Ujhan, 1100 m, 15.10.1987, G. H. Dar 9433; Rajouri, Kheora, 1000 m, shrubby plant growing along stony slopes, flowers yellow, 19.10.1988, G. H. Dar 9795. |
| <i>Ixeris polyccephala</i> Cass. | Poonch, Mendhar, 950 m, heads yellow, 6.2.1988, G. H. Dar 9520. |
| <i>Lactuca dissecta</i> D. Don | Poonch-Bufliaz road, 1800 m, 8.1.2010, Akhtar 957. |
| <i>Lactuca serriola</i> L. | Rajouri, Kalakote, 780 m, 5.1.2010, Akhtar 1079. |
| <i>Launaea procumbens</i> (Roxb.) Ram. & Raj. | Rajouri, Chowdhary Nar, 1100 m, 24.11.1987, G. H. Dar 9482. |
| <i>Myriactis nepalensis</i> Less | Rajouri, Darhal, 1550 m, 25.4.1988, G. H. Dar 9749. |
| <i>Parthenium hysterophorus</i> L. | Rajouri, Nowshera-Poonch roadsides, 900 m, 6.1.2010, Akhtar 1100. |
| <i>Saussurea heteromalla</i> (D. Don) Hand.-Mazz. | Rajouri, Chingus, 860 m, 6.1.2010, Akhtar 1081. |
| <i>Sonchus arvensis</i> L | Poonch, Mendhar, 950 m, sides of water courses, heads yellow, 6.2.1988, G. H. Dar 9521. |
| <i>Siegesbeckia orientalis</i> L. | Rajouri, Behrote, 1000 m, 27.12.1987, G. H. Dar 9502. |
| <i>Tagetes minuta</i> L. | Poonch, Pheeri Jhalas, Mendhar, 1150 m, 5.1.2010, Akhtar 1162. |
| <i>Taraxacum officinale</i> Weber | Rajouri, Kheora, 1000 m, 5.3.1988, G. H. Dar 9620; Poonch, Bufliaz, 2100 m, 8.1.2010, Akhtar 1257. |
| <i>Tussilago farfara</i> L. | Poonch, Lohren forest, 2250 m, 9.1.2010, Akhtar 1245. |
| <i>Vernonia cinerea</i> (L.) Lees. | Rajouri, 950 m, 20.03.1988, G. H. Dar 9684. |
| <i>Xanthium strumarium</i> L. | Rajouri, Revenue Colony, 950 m, 1.12.1987, G. H. Dar 9487. |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|---|---|
| Balsaminaceae | |
| <i>Impatiens balsamina</i> L. | Rajouri, Darhal, Bodharoo, 1550 m, 20.9.1987, G. H. Dar 9400; Rajouri, Chowdhary Nar, 15.9.1987, G. H. Dar 9316; Poonch, Lohren, 2200 m, 9.1.2010, Akhtar 1258. |
| Berberidaceae | |
| <i>Berberis glaucocarpa</i> Stapf. | Rajouri, Muradpur, Nowshera, 830 m, 15.3.1988, G. H. Dar 9670. |
| <i>Berberis lycium</i> Royle | Rajouri, Darhal, 1550 m, 20.3.1988, G. H. Dar 9682; Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1152. |
| Boraginaceae | |
| <i>Anchusa arvensis</i> (L.) Bieb. ssp. <i>orientalis</i> (L.) Nordh | Rajouri, roadsides, 950 m, 5.3.1988, G. H. Dar 9648. |
| <i>Cynoglossum glocadiatum</i> Wall. ex Benth. | Poonch, Bufliaz, 2000 m, 12.8.1987, G. H. Dar 9258. |
| <i>Trichodesma indicum</i> (L.) R. Br. var. <i>amplexicaule</i> (Roth) T. Cooke | Rajouri, Kheora, 1000 m, exposed slopes; flowers light blue, 15.9.1987, G. H. Dar 9371. |
| Brassicaceae | |
| <i>Arabidopsis thaliana</i> (L.) Heynh. | Poonch, Mendhar, 900 m, flowers white, 6.2.1988, G. H. Dar 9538. |
| <i>Brassica juncea</i> (L.) Czern. & Coss. | Poonch, Mendhar, 900 m, cultivated, flowers yellow, 6.2.1988, G. H. Dar 9525 |
| <i>Brassica rapa</i> L ssp. <i>campestris</i> (L.) Clapham. | Rajouri, Fatehpur, 1000 m, 21.11.1987, G. H. Dar 9475. |
| <i>Capsella bursa-pastoris</i> (L.) Medik. | Poonch, Mendhar, 900 m, 6.2.1988, G. H. Dar 9542; Rajouri, Jawhar Nagar, 1000 m, 15.7.1988, G. H. Dar 9550. |
| <i>Cardamine impatiens</i> L. | Rajouri, Thanna Mandi, 1400 m, 15.4.1988, G. H. Dar 9727. |
| <i>Coronopus didymus</i> (L.) Sm. | Rajouri, City, Ward 10, 950 m, Masonry bunds along vegetable fields, 25.8.1987, G. H. Dar 9338. |
| <i>Eruca sativa</i> Mill. | Poonch, Mendhar, 900 m, in cultivated mustard fields, flowers yellowish, 6.2.1988, G. H. Dar 9526; Rajouri, Darhal, 1550 m, 26.2.1988, G. H. Dar 9599. |
| <i>Lepidium capitatum</i> Hook. f. & Thomson | Rajouri, Shahdara Sharief, 1550 m, 17.2.1988, G. H. Dar 9572; Rajouri, Behrote, 1100 m, 1.1.1988, G. H. Dar 9503. |
| <i>Lepidium sativum</i> L. | Rajouri, Darhal, 1550, 23.2.1988, G. H. Dar 9587. |
| <i>Lepidium virginicum</i> L. | Rajouri City, near Army Theater, roadsides slopes, 950 m, 22.8.1987, G. H. Dar 9313 |
| <i>Nasturtium officinale</i> R. Br. | Rajouri, Darhal, 1550 m, 15.4.1988, G. H. Dar 9730. |
| Buxaceae | |
| <i>Buxus wallichiana</i> Baill. | Rajouri, Gabar Forest, Budhal; Poonch, Bufliaz, 2000 m, 8.1.2010, Akhtar 1198. |
| Basellaceae | |
| <i>Basella rubra</i> L. | Rajouri, Gabar Forest, Budhal, 2000 m, 6.1.2010, Akhtar 992. |
| Caesalpiniaceae | |
| <i>Bauhinia variegata</i> L. | Rajouri, main road, 950 m, 5.1.2010, Akhtar 1219. |
| <i>Cassia occidentalis</i> L. | Rajouri, 950 m, flowers pure yellow, 2.9.1987, G. H. Dar 9385 a. |
| <i>Cassia tora</i> L. | Rajouri, 950 m, 20.9.1987, flowers pure yellow, G. H. Dar 9385 b. |
| Campanulaceae | |
| <i>Campanula pallida</i> Wallich | Rajouri, Jawhar Nagar, 950 m, 15.4.1988, G. H. Dar 9731. |
| Cannabaceae | |
| <i>Cannabis sativa</i> L. | Rajouri, 950 m, near bus stand, abundant on wastelands, roadsides and along vegetable fields, 22.8.1987, G. H. Dar 9318; Poonch, Lohren road 1900 m, 9.1.2010, Akhtar 1290. |
| Capparaceae | |
| <i>Cleome viscosa</i> L. | Poonch, 950 m, sandy slopes, flowers yellow, 18.10.1988, G. H. Dar 9793. |
| Caprifoliaceae | |
| <i>Viburnum grandiflorum</i> Wall. ex DC. | Rajouri, 950 m, 5.8.1987, G. H. Dar 9243; Poonch, Lohren, 1900 m, 09.01.2010, Akhtar 1218. |
| Caryophyllaceae | |
| <i>Cerastium cerastoides</i> (L.) Britton | Poonch, Surankote nullah, 1500 m, 7.1.2010, Akhtar 1256. |
| <i>Dianthus crinitus</i> Smith | Rajouri, 950 m, 30.4.1988, G. H. Dar 9652. |
| <i>Stellaria media</i> (L.) Vill. | Rajouri, Budhal, 2000 m, 20.2.1988, G. H. Dar 9583; Poonch, Lohren, 2000 m, 9.1.2010, Akhtar 1412 |
| <i>Silene conoidea</i> L. | Rajouri, Sora, Behrote, 1000 m, 20.12.1987, G. H. Dar 9494 |
| <i>Silene vulgaris</i> (Moench) Garcke | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 918. |
| <i>Vaccaria pyramidata</i> Medik | Rajouri, 950 m, 30.4.1988, G. H. Dar 9752. |
| Chenopodiaceae | |
| <i>Chenopodium album</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1503. |
| <i>Chenopodium botrys</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1261. |
| <i>Chenopodium foliosum</i> (Moench) Aschers. | Poonch, Lohren, 2100 m, 09.01.2010, Akhtar 961. |
| <i>Chenopodium hybridum</i> L. | Poonch, Bufliaz, 2000 m, 9.1.2010, Akhtar 965. |
| <i>Chenopodium murale</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 962. |
| <i>Kochia scoparia</i> (L.) Schrad. | Rajouri, 950 m, 20.9.1987, G. H. Dar 9395. |
| Convolvulaceae | |
| <i>Convolvulus arvensis</i> L. | Poonch, Bufliaz forest, 2000 m, 8.1.2010, Akhtar 1507. |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|---|---|
| <i>Ipomoea crassicaulis</i> (Benth.) B. L. Robinson | Rajouri, 950 m, gregarious milky shrub, 15.9.1987, G. H. Dar 9372. |
| <i>Ipomoea hispida</i> (Vahl) Roem. & Schult. | Rajouri, Khoblan, 1000 m, 26.12.1987, G. H. Dar 9501 |
| <i>Ipomoea nil</i> (L.) Roth | Rajouri, 950 m, 22.08.1987, G. H. Dar 9324; 20.10.1987, G. H. Dar 9455. |
| <i>Ipomoea purpurea</i> Roth | Poonch, Bufliaz forest, 2000 m, 8.1.2010, Akhtar 907, 1401. |
| Cucurbitaceae | |
| <i>Diplocyclos palmatus</i> (L.) C. Jaffery | Rajouri, Sunderbani, 600 m, climbing along hedges, 2.9.1987, G. H. Dar 9347. |
| Ehretiaceae | |
| <i>Ehretia aspera</i> Roxb. | Nowshera, Moradpur, 820 m, 10.4.1988, G. H. Dar 9704. |
| Ericaceae | |
| <i>Rhododendron arboreum</i> Sm. | Poonch, Kanglie, Surankote, 1280 m, 9.1.2010, Akhtar 1122. |
| Euphorbiaceae | |
| <i>Euphorbia helioscopia</i> L. | Rajouri, Shahdara Sharief, 1550 m, waste ground 17.8.1988, G. H. Dar 9566. |
| <i>Euphorbia hispida</i> Boiss. | Poonch, Surankote, 1300 m, 10.1.2010, Akhtar 1250. |
| <i>Euphorbia wallichii</i> Hook. f. | Poonch, Lohren, 2200 m, 9.1.2010, Akhtar 1249. |
| <i>Phyllanthus emblica</i> L. (<i>Emblica officinalis</i> Gaertn.) | Rajouri, Dak Bunglaw, 950 m, 5.1.2010, Akhtar 1220. |
| Fagaceae | |
| <i>Quercus baloot</i> Griffith | Poonch, Bufliaz forest, 2000 m, 8.1.2010, Akhtar 1138. |
| <i>Quercus incana</i> Roxb. | Poonch, Khataoyian, Mendhar, 1190 m, 10.1.2010, Akhtar 1133. |
| <i>Quercus glauca</i> Thunb. | Rajouri, Haryan, Budhal, 1800 m, 5.1.2010, Akhtar 1098. |
| Fumariaceae | |
| <i>Fumaria indica</i> (Haussk.) Pugsley | Rajouri, 950 m, 5.3.1988, G. H. Dar 9638; Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1280. |
| Gentianaceae | |
| <i>Swertia angustifolia</i> Buch.-Ham ex D. Don | Rajouri, Chowdhary Nar, 1100 m, 15.9.1987, G. H. Dar 8361; Rajouri, Ujhan, 1100 m, 27.9.1988, G. H. Dar 9779. |
| <i>Gentiana aprica</i> Decne. | Rajouri, 950 m, 5.3.1988, G. H. Dar 9629. |
| <i>Gentiana carinata</i> Griseb. | Poonch, Bufliaz, Mughal road, 2250 m, 9.1.2010, Akhtar 980. |
| <i>Gentiana argentea</i> (Royle ex D. Don) DC. | Poonch, Surankote, 1300 m, grassy slopes, 15.4.1988, G. H. Dar 9733. |
| Geraniaceae | |
| <i>Geranium rotundifolium</i> L. | Rajouri, Kheora, 1000 m, 5.3.1988, G. H. Dar 9619; Rajouri, Nowshera, 800 m, 20.4.1988, G. H. Dar 9736. |
| Hypericaceae | |
| <i>Hypericum perforatum</i> L. | Rajouri, Fatehpur, 1000 m, 22.11.1987, G. H. Dar 9478. |
| Hippocastanaceae | |
| <i>Aesculus indica</i> (Wall. ex Cambess.) Hook. f. | Poonch, Bufliaz, 2000 m, 10.1.2010, Akhtar 1234. |
| Hamamelidaceae | |
| <i>Parrotiopsis jacquemontiana</i> (Dcne.) Rehder | Poonch, Bufliaz forest, 2100 m, 7.1.2010, Akhtar 1233. |
| Lamiaceae | |
| <i>Ajuga bracteosa</i> Wall. ex Benth. | Rajouri, Chowdhary Nar, 1050 m, dry slopes, 15.9.1987, G. H. Dar 9370. |
| <i>Ajuga parviflora</i> Benth. | Rajouri, Darhal, 1550 m, borders of cultivated fields, 20.3.1988, G. H. Dar 9680; Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1102. |
| <i>Clinopodium umbrosum</i> (M. Bieb.) C. Koch | Rajouri, 950 m, in cultivated fields, 5.3.1988, G. H. Dar 9650; Kheora, Rajouri 30.3.1988, G. H. Dar 9697. |
| <i>Colebrookea oppositifolia</i> Smith | Rajouri, Moradpur, Nowshera, 820 m, 10.4.1988, G. H. Dar 9706; Mendhar, Pokrow, 1350 m, 8.1.2010, Akhtar 1134. |
| <i>Isodon rugosus</i> (Wall. ex Benth.) Codd | Rajouri, 950 m, sandy slopes, 20.9.1987, G. H. Dar 9384. |
| <i>Lamium amplexicaule</i> L. | Rajouri, Jawhar Nagar, 950 m, along vegetable fields 5.2.1988, G. H. Dar 9512; Shahdara Sharief, 1550 m, 17.2.1988, G. H. Dar 9567. |
| <i>Lycopus europaeus</i> L. | Rajouri, Ujhan, 1000 m, damp fields, 15.9.1987, G. H. Dar 9354. |
| <i>Leucas cephalotes</i> (Roth) Spreng. | Rajouri, Kheora, 1000 m, scrubby slopes, 5.3.1988, G. H. Dar 9622. |
| <i>Leucas mollissima</i> Wall. ex Benth. | Rajouri, Kheora, 1000 m, 20.5.1988, G. H. Dar 9754. |
| <i>Mentha longifolia</i> (L.) L. | Poonch, Gabbar forest, 1800 m, 5.1.2010, Akhtar 1427. |
| <i>Mentha royleana</i> Benth. | Rajouri, Chowdhary Nar, 1050 m, boarders of cultivated fields, 15.9.1987, G. H. Dar 9365. |
| <i>Micromeria biflora</i> (Buch.-Ham. ex D. Don) Benth. | Poonch, Mendhar, 900 m, sandy slopes, 6.2.1988, G. H. Dar 9531; Rajouri, Fatehpur, 1000 m, dry slopes, 24.11.1987, G. H. Dar 9481. |
| <i>Nepeta hindostana</i> (Roth) Haines | Rajouri, Kheora, 1000 m, 4.3.1988, G. H. Dar 9617. |
| <i>Ocimum basilicum</i> L. | Rajouri, Manjakot, 1000 m, in cultivated fields, 20.3.1988, G. H. Dar 9689. |
| <i>Origanum vulgare</i> L. | Rajouri, Shahdara Sharief, 1550 m, gravel slopes along roadsides, flowers white, 16.8.1987, G. H. Dar 9290. |
| <i>Prunella vulgaris</i> L. | Rajouri, Ujhan, 1000 m, moist roadsides, 27.09.1988, G. H. Dar 9785; Poonch, Gabber forest, 1800 m, 5.1.2010, Akhtar 927. |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|---|--|
| <i>Stachys emodi</i> Hedge | Rajouri, Ujhan, 1000 m, moist roadsides, 27.9.1988, G. H. Dar 9783. |
| <i>Thymus linearis</i> Benth. | Poonch, Lohren forest, 2200 m, 9.1.2010, Akhtar 1501. |
| Juglandaceae | |
| <i>Juglans regia</i> L. | Poonch, Gabbar forest, 1800 m, 5.1.2010, Akhtar 1201. |
| Buddlejaceae | |
| <i>Buddleja asiatica</i> Lour. | Rajouri, Ujhan, 1050 m, 3.3.1988, G. H. Dar 9614; Poonch proper, 950 m, 8.1.2010, Akhtar 1278. |
| <i>Buddleja crispa</i> Benth. | Poonch Road, 950 m, 10.1.2010, Akhtar 1210. |
| Lythraceae | |
| <i>Woodfordia fruticosa</i> (L.) S. Kurz | Poonch, Noorichumb, 2200 m, 12.8.1987, G. H. Dar 9267. |
| Malvaceae | |
| <i>Abutilon bidendentatum</i> Hochst. ex A. Rich. | Rajouri, Ujhan, 1000 m, 27.9.1988, G. H. Dar 9782 (seeds 3 per mericarp). |
| <i>Hibiscus schizopetalus</i> (Masters) Hook. f. | Rajouri, City, Ward No. 10, 950 m, grown as ornamental shrub, flowers red, 22.8.1987, G. H. Dar 9308. |
| <i>Malva neglecta</i> Wallr. | Poonch, Lohren, 2200 m, 9.1.2010, Akhtar 923. |
| <i>Malva parviflora</i> L. | Shahdara Sharief, Rajouri, 1550 m, plants not more than 30 cm high; flowers purplish-pink, 17.2.1988, G. H. Dar 9563; Thanna Mandi, plants to 50 cm high, flowers pinkish, 22.8.1987, G. H. Dar 9330. |
| | The present collections represent the first authentic specimens of this species in KASH, because all its earlier reports from the Jammu and Kashmir State have been found to be based on misidentification of its allied species, <i>M. microcarpa</i> Pers. (see Naqshi et al. 1988: 1514). The main distinguishing character of <i>M. parviflora</i> is its mericarps having winged and distinctly hooked margins. |
| <i>Malvastrum coromandelianum</i> (L.) Garcke | Rajouri city, near bus stand, 950 m, abundant along roadsides, lawns, cultivated fields, wastelands, etc., flowers yellow, 22.8.1987, G. H. Dar 9323; Rajouri, Jawharnagar, 0950 m, 15.4.1988, G. H. Dar 9725; Rajouri city, Kitchen garden sides, 22.8.1987, G. H. Dar 9326; Rajouri, Dak Banglow lawn, abundant, plants ascending to erect, flowers yellow, 31.8.1988, G. H. Dar 9758; Ujhan, Rajouri 15.9.1987, G. H. Dar 9353 and 20.9.1987, G. H. Dar 9408b; Rajouri, Nowshera, 820 m, 6.1.2010, Akhtar 1110. |
| <i>Sida cordata</i> (Burm. f.) Borssum Waalkes | Rajouri, 950 m, 5.3.1988, G. H. Dar 9628. |
| <i>Sida rhombifolia</i> L. (<i>S. yunnanensis</i> Hu.) | Rajouri, Ujhan, 1000 m, roadside slopes, 27.9.1988, G. H. Dar 9787. |
| Meliaceae | |
| <i>Melia azedarach</i> L. | Rajouri, 950, roadsides, 20.3.1988, G. H. Dar 9691; Rajouri, 950 m, 6.1.2010, Akhtar 1299. The drupes are persistent through the winter and fall by ending February. |
| <i>Toona ciliata</i> Roem. | Rajouri, Darhal road, 1400 m, 6.1.2010, Akhtar 1221. |
| Moraceae | |
| <i>Ficus carica</i> L. | Rajouri, Darhal, 1550 m and Poonch, Surankote, 1300 m, 6.1.2010, Akhtar 1222. |
| <i>Ficus palmata</i> Frossk. | Rajouri, Budhal, 1800 m, 5.1.2010, Akhtar 1153. |
| <i>Morus alba</i> L. | Poonch, Lohren, 2000 m, 9.1.2010, Akhtar 1223. |
| Myrtaceae | |
| <i>Callistemon citrinus</i> (Curtis) Stapf | Budhal, Haryan, 1800 m, 5.1.2010, Akhtar 1140. |
| <i>Eucalyptus alba</i> Reinw. ex Bl. | Poonch, Dak Bunglow, 950 m, 8.1.2010, Akhtar 1123. |
| <i>Eucalyptus globulus</i> Labbil. | Rajouri, Darhal, 1550 m, and Poonch road, 950 m, 8.1.2010, Akhtar 1645. |
| <i>Eucalyptus tereticornis</i> Sm. | Rajouri road, 950 m, 7.10.2006, Z. S. Khan 1345. |
| Mimosaceae | |
| <i>Albizia lebbeck</i> (L.) Benth. | Poonch, Surankote road, 1350 m, 10.1.2010, Akhtar 1221. |
| Oleaceae | |
| <i>Olea ferruginea</i> Royle | Rajouri Biodiversity Park, 960 m, 10.1.2010, Akhtar 1224. |
| Onagraceae | |
| <i>Oenothera rosea</i> Soland. | Rajouri, Soland, 10.4.1988, G. H. Dar 9721; Poonch, Bufliaz forest, 2000 m, 12.1.2010, Akhtar 1047. |
| Oxalidaceae | |
| <i>Oxalis corniculata</i> L. | Rajouri, Kheora, 1000 m, 27.02.1988, G. H. Dar 9681. |
| Papilionaceae | |
| <i>Astragalus grahamianus</i> Royle ex Benth. | Poonch, Bufliaz road, 2000 m, 9.1.2010, Akhtar 934. |
| <i>Lotus corniculatus</i> L. | Poonch, Mendhar, 900 m, 6.2.1988, G. H. Dar 9540. |
| <i>Mallotus philippensis</i> (Lam.) Muell. | Nowshera, Rajouri, 820 m, 6.1.2010, Akhtar 1107 |
| <i>Melilotus indica</i> (L.) All. | Poonch, Mendhar, 900 m, flowers yellow, 6.2.1988, G. H. Dar 9539. |
| <i>Trifolium fragiferum</i> L. | Poonch, Mendhar, 900 m, cultivated as fodder, 6.2.1988, G. H. Dar 9541. |
| <i>Trifolium pratense</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1271. |
| <i>Trifolium repens</i> L. | Rajouri, Jawahar Nagar, 0950 m, 30.3.1988, G. H. Dar 9696; Poonch, Mendhar, 900 m, 6.2.1988, G. H. Dar 9529; Poonch, Lohren forest, 2100 m, 9.1.2010, Akhtar 1264. |
| <i>Lathyrus aphaca</i> L. | Rajouri, Darhal, 1550 m, 10.2.1988, G. H. Dar 9548. |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|--|---|
| <i>Indigofera cassioides</i> Rottl. ex DC. | Rajouri, Nowshera, 820 m, 30.3.1988, G. H. Dar 9685. |
| <i>Indigofera heterantha</i> Wall. ex Brandis | Poonch, Dookrie ,1700 m, 11.1.2010, Akhtar 1227. |
| <i>Indigofera cordifolia</i> Heyne ex. Roth | Rajouri, 950 m, 5.3.1988, G. H. Dar 9632. |
| <i>Vicia sativa</i> L. | Rajouri, Kheora, 1000 m, 26.2.1988, G. H. Dar 9592; Poonch, Bufliaz road, 1700 m, 7.1.2010, Akhtar 1459. |
| <i>Medicago lupulina</i> L. | Rajouri, 950 m, 15.3.1988, G. H. Dar 9678. |
| <i>Medicago polymorpha</i> L. | Rajouri, Jawhar Nagar, 0950 m, 10.3.1988, G. H. Dar 9658. |
| <i>Medicago sativa</i> L. | Poonch, Bufliaz road, 1800 m, 7.1.2010, Akhtar 1453. |
| <i>Tephrosia strigosa</i> (Dalz.) Sant. & Maheshw. | Rajouri, Ujhan, 1000 m, 27.7.1988, G. H. Dar 9770. |
| <i>Robinia pseudoacacia</i> L. | Rajouri, Gabber forest, Budhal, 1800 m, Akhtar 1202. |
| <i>Desmodium laxiflorum</i> DC. | Rajouri, Ujhan, 1000 m, 27.9.1988, G. H. Dar 9788. |
| <i>Crotalaria medicaginea</i> Lamk. | Rajouri, Ujhan, 1000 m, 27.9.1988, G. H. Dar 9780. |
| <i>Lespedeza juncea</i> (L. f.) Pers. | Rajouri, Fatehpur, 1000 m, 20.11.1987, G. H. Dar 9470. |
| Plantaginaceae | |
| <i>Plantago lanceolata</i> L. | Rajouri, Budhal, 1800 m, 5.1.2010, Akhtar 1511. |
| <i>Plantago major</i> L | Rajouri, Budhal, 1800 m, 5.1.2010, Akhtar 1512. |
| Platanaceae | |
| <i>Platanus orientalis</i> L | Rajouri, Darhal, 1560 m, 6.1.2010, Akhta 1581 |
| Papaveraceae | |
| <i>Argemone mexicana</i> L. | Rajouri, City, 950 m, roadside slopes, flowers purple, anthers yellow, 25.8.1987, G. H. Dar 9342. |
| Pittosporaceae | |
| <i>Pittosporum nepaulense</i> (DC.) Rehder & Wilson | Poonch, Mendhar, 900 m, 6.2.1988, G. H. Dar 9537. |
| Plumbaginaceae | |
| <i>Plumbago zeylanica</i> L. | Rajouri, 950 m, scrubby slopes, 20.8.1987, G. H. Dar 9295. |
| Podophyllaceae | |
| <i>Podophyllum hexandrum</i> Royle. | Poonch, Lohren forest, 2200 m, 9.1.2010, Akhtar 951. |
| Polygonaceae | |
| <i>Fagopyrum esculentum</i> Moench | Rajouri, Rathal, 1200 m, 20.1.2010, Akhtar 1057. |
| <i>Oxyria digyna</i> (L.) Hill | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 951. |
| <i>Polygonum orientale</i> L. | Rajouri, Rathal, 1200 m, 20.1.2010, Akhtar 1056. |
| <i>Rumex acetosa</i> L. | Poonch, Bufliaz, 1800 m, 10.01.2010, Akhtar 1465. |
| <i>Rumex dentatus</i> L. | Poonch, Bufliaz, 1800 m, 10.1.2010, Akhtar 965. |
| <i>Rumex hastatus</i> D. Don | Rajouri, Darhal, 1550 m, and Poonch, Bufliaz, 1800 m, 10.1.2010, Akhtar 1310. |
| <i>Rumex nepalensis</i> Spreng. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1254. |
| <i>Polygonum affine</i> D. Don | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 954. |
| <i>Polygonum hydropiper</i> L. | Rajouri, Palma, 1000 m, 20.10.1987, G. H. Dar 9454. |
| <i>Polygonum plebejum</i> R. Br. | Rajouri, 950 m, grasslands, 5.3.1988, G. H. Dar 9649. |
| Portulacaceae | |
| <i>Portulaca oleracea</i> L. | Rajouri, city, 950 m, waste ground near bus stand, 22.8.1987, G. H. Dar 9306. |
| Primulaceae | |
| <i>Anagallis arvensis</i> L. | Rajouri, Jawharnagar, 1100 m, 10.2.1988, G. H. Dar 9546. |
| <i>Androsace rotundifolia</i> Hardw. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1054. |
| <i>Androsace umbellata</i> (Lour.) Merr. | Poonch; Mendhar, 900 m, along water courses, flowers white, 6.2.1988, G. H. Dar 9537. |
| Punicaceae | |
| <i>Punica granatum</i> L. | Rajouri, Nowshera, 820 m, growing wild on hillocks, 20.9.1987, G. H. Dar 993 ; Poonch, Lohren, 2100 m, 6.1.2010, Akhtar 1225. |
| Ranunculaceae | |
| <i>Anemone obtusiloba</i> D. Don | Rajouri, Budhal forest, 2200 m, 5.1.2010, Akhtar 1549. |
| <i>Aquilegia fragrans</i> Benth. | Rajouri, Budhal forest, 2200 m, 5.1.2010, Akhtar 1550. |
| <i>Caltha palustris</i> L. var. <i>alba</i> (Jacq. ex Camb.) Hook. f. and Thoms. | Poonch, Lohren, 2100 m, 9.10.2010, Akhtar 1609. |
| <i>Clematis gouriana</i> Roxb. | Rajouri, Moradpur Nowshera, 820 m, 10.4.1988, G. H. Dar 9713; Ujhan Rajouri, 20.9.1987, G. H. Dar 9409. |
| <i>Clematis grata</i> Wall. | Rajouri, 950 m, 20.10.1987, G. H. Dar 9457. |
| <i>Thalictrum alpinum</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1254. |
| <i>Ranunculus arvensis</i> L. | Poonch, Mendhar, 900 m, common, 6.2.1988, G. H. Dar 9533. |
| <i>Ranunculus hirtellus</i> Royle | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1609 |
| <i>Ranunculus laetus</i> Wall. ex Hook. f. & Thoms | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1409. |
| <i>Ranunculus sceleratus</i> L. | Rajouri, Kheora, 1000 m, 15.3.1988, G. H. Dar 9666. |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|--|--|
| Resedaceae | |
| <i>Oligomeris linifolia</i> (Vahl.) Macbride | Rajouri, Haryan, Budhal, 1800 m, 5.1.2010, <i>Akhtar</i> 1151. |
| Rhamnaceae | |
| <i>Ziziphus mauritiana</i> Lamk. | Rajouri, in front of D.C. office, 950 m, large shrub, up to 3 m, leaves leathery, green above, brownish beneath, 10.10.1987, <i>G. H. Dar</i> 9430, 'Ber'; Poonch, Bufliaz, 1900 m, 8.1.2010, <i>Akhtar</i> 1099. |
| <i>Ziziphus mauritiana</i> Lam. var. <i>fruticosa</i> (Haines) Seb. and Balak. | Rajouri, Kheora, 1000 m, roadside hedges, 8.10.1987, fruits yellowish-green, <i>G. H. Dar</i> 9426. |
| <i>Ziziphus oxyphylla</i> Edgew. | Rajouri, Kheora, 1000 m, roadside hedges, mature fruits red, 8.10.1987 <i>G. H. Dar</i> 9424. |
| Rosaceae | |
| <i>Cydonia oblonga</i> Mill. | Poonch, Surankote, 1350 m, 8.1.2010, <i>Akhtar</i> 1426. |
| <i>Cotoneaster nummularia</i> Fisch. & C. A. Mey. | Poonch, Lohren, 2100 m, 9.1.2.010, <i>Akhtar</i> 1209. |
| <i>Duchesnia indica</i> (Andr.) Focke, | Rajouri, Kheora, 1000 m, 20.5.1988, <i>G. H. Dar</i> 9753; Poonch Mendhar, 6.2.1988, <i>G. H. Dar</i> 9544. |
| <i>Fragaria nubicola</i> Lindley ex Lacaita | Poonch, Lohren, 2100 m, 9.1.2010, <i>Akhtar</i> 1251. |
| <i>Geum roylei</i> Bolle | Poonch, Lohren, 2100 m, 10.1.2010, <i>Akhtar</i> 1212. |
| <i>Prinsepia utilis</i> Royle | Rajouri, Haryan Budhal, 1800 m, 5.1.2010, <i>Akhtar</i> 1365. |
| <i>Potentilla nepalensis</i> Hook. | Rajouri, Deragali, 1800 m, flowers red, 12.8.1987, <i>G. H. Dar</i> 9276. |
| <i>Prunus armeniaca</i> L. | Rajouri, Haryan Budhal, 1800 m, 5.1.2010, <i>Akhtar</i> 1565 |
| <i>Pyrus pashia</i> Buch.- Ham. ex D. Don | Poonch, Bufliaz road, 1800 m, 6.1.2010, <i>Akhtar</i> 1225. |
| <i>Malus domestica</i> Borkh | Poonch, Bufliaz, 2000 m, 9.1.2010, <i>Akhtar</i> 1424. |
| <i>Prunus persica</i> (L.) Batsch. | Poonch, Lohren, 2100 m, 9.1.2010, <i>Akhtar</i> 1527. |
| <i>Prunus cerasus</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, <i>Akhtar</i> 1528. |
| <i>Prunus tomentosa</i> Thunb. | Poonch, Lohren, 2100 m, 9.1.2010, <i>Akhtar</i> 1528. |
| <i>Rosa webbiana</i> Wall. ex Royle | Poonch, Bufliaz, 2000 m, 9.1.2010, <i>Akhtar</i> 1252. |
| <i>Rubus niveus</i> Thunb. | Poonch, Lohren, 2200 m, 9.1.2010, <i>Akhtar</i> 1407. |
| <i>Rubus ulmifolius</i> Schott | Poonch, Surankote, 1350 m, 9.1.2010, <i>Akhtar</i> 1421. |
| <i>Rubus ellipticus</i> Smith | Rajouri, Jawharnagar, 0950 m, 20.2.1988, <i>G. H. Dar</i> 9580. |
| <i>Spiraea bella</i> Sims | Rajouri, Haryan, Budhal, 1800 m, 5.1.2010, <i>Akhtar</i> 1834. |
| Rubiaceae | |
| <i>Galium asperifolium</i> Wall. | Poonch, Lohren, 2100 m, 22.1.2010, <i>Akhtar</i> 1315. |
| <i>Oldenlandia retrorsa</i> Boiss. | Rajouri, Thani Mundi, 1400 m, 20.1.2010, <i>Akhtar</i> 1074. |
| <i>Rubia cordifolia</i> L. | Rajouri: Kheora, 1000 m, along hedges, 8.10.1987, <i>G. H. Dar</i> 9421. According to Hara and Williams (1977), the correct name for our species is <i>R. wallichiana</i> Decne (which is characterized by smaller, whitish, or grayish-white flowers and blakish fruits) - <i>R. cordifolia</i> is said to have red fruits and not occurring in our area. |
| Rutaceae | |
| <i>Zanthoxylum armatum</i> DC. | Rajouri, Thania Mandi, 1400 m, 6.1.2010, <i>Akhtar</i> 1227. |
| Salicaceae | |
| <i>Populus ciliata</i> Wall. ex Royle | Poonch, Lohren, 2100 m, 8.1.2010, <i>Akhtar</i> 1204. |
| <i>Salix alba</i> L. | Poonch, Bufliaz road, 1800 m, 8.1.2010, <i>Akhtar</i> 1206. |
| <i>Salix babylonica</i> L. | Rajouri, Darhal, 1550 m and Poonch, Surankote, 1350 m, 8.1.2010, <i>Akhtar</i> 1205. |
| Sapindaceae | |
| <i>Sapindus mukorossi</i> Gaertn. | Rajouri, Darhal, 1550 m, 6.1.2010, <i>Akhtar</i> 1228. |
| Scrophulariaceae | |
| <i>Limosella aquatica</i> L. | Rajouri Air field, 950 m, 4.8.1987, <i>G. H. Dar</i> 9235. |
| <i>Lindenbergia indica</i> (L.) Vatke | Rajouri, Shahdara Sharief, 1550 m, 16.8.1987, <i>G. H. Dar</i> 9281. On gravel and sandy slopes along road to shrine, flowers yellow. |
| <i>Lindernia crustacea</i> (L.) F.V. Mueller | Rajouri, Ujhan, 1000 m, moist places, 27.9.1988, <i>G. H. Dar</i> 9774; Rajouri Kheora, moist roadsides, flowers purple, 10.8.1987, <i>G. H. Dar</i> 9428; 05. 03. 1988, <i>G. H. Dar</i> 9640; Degree College campus, 1.10.1988, <i>G. H. Dar</i> 9792 (flowers white); Deragali, Poonch, 12.8.1987, <i>G. H. Dar</i> 9256. |
| <i>Mimulus strictus</i> Benth. | Rajouri, 950 m, moist places in paddy fields. Flowers light purple, (stated to be white or pale blue in Indian plants) 18.1.1988, <i>G. H. Dar</i> 9509. |
| <i>Mazus japonicas</i> (Thunb.) O. Ktze | Rajouri, Bonati, 1000 m, along cultivated fields, 5.3.1988, <i>G. H. Dar</i> 965; Poonch, Mendhar, 900 m, sides of water courses in cultivated fields, 6.2.1988, <i>G. H. Dar</i> 9543. |
| <i>Mazus surculosus</i> D. Don. | Poonch, Noorichumb, 2200 m, often grassy hill slopes, 12.8.1987, <i>G. H. Dar</i> 9251. A diffuse, stoloniferous plant with ± rounded leaf blades and rounded teeth or lobes. |
| <i>Veronica biloba</i> L. | Poonch, Lohren road, 1900 m, 9.1.2010, <i>Akhtar</i> 927. |
| <i>Veronica persica</i> Poir. | Rajouri, 950 m, along vegetable fields, 20.2.1988, <i>G. H. Dar</i> 9500; Poonch, Mendhar, 900 m, common, 6.2.1988, <i>G. H. Dar</i> 9534; Budhal, Rajouri, 1800 m, 5.1.2010, <i>Akhtar</i> 1159. |
| <i>Veronica melissifolia</i> Desf. ex Poir. (<i>V. laxa</i> Benth.). | Mendhar, Saki Maidian, Poonch, 900 m, 9.1.2010, <i>Akhtar</i> 1127. |
| <i>Veronica beccabunga</i> L. | Rajouri, Budhal, 1800 m, 5.1.2010, <i>Akhtar</i> 1502. |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|---|---|
| <i>Wulfenia amherstiana</i> Wall. ex Benth. | Noorichumb, Poonch, 2200 m, flowers violet blue 12.8.1987, G. H. Dar 9258. An interesting plant with ± horizontal flowers and far exserted filiform styles, especially conspicuous after falling of corolla. |
| Simaroubaceae | |
| <i>Ailanthus altissima</i> (Mill.) Swingle | Poonch, Surankote, 1350 m, 10.1.2010, Akhtar 1215. |
| Solanaceae | |
| <i>Atropa acuminata</i> Royle | Poonch, Lohren forest, 2450 m, 6.1.2010, Akhtar 1225. |
| <i>Cestrum nocturnum</i> L. | Rajouri, Kheora, 1000 m, 9.7.1987, G. H. Dar 9790. |
| <i>Datura stramonium</i> L. | Rajouri city roadsides and waste places, 950 m, flowers white, tube bluish, 22.8.1987, G. H. Dar 9305. |
| <i>Hyoscyamus niger</i> L. | Poonch, Lohren forest, 2300 m, 6.1.2010, Akhtar 925. |
| <i>Nicotiana plumbaginifolia</i> Viv. | Rajouri, Sora, 1000 m, 20.12.1987, G. H. Dar 9495. |
| <i>Physalis minima</i> L. | Rajouri, Kheora, 1000 m, 9.7.1987, G. H. Dar 9390. |
| <i>Solanum miniatum</i> Bernh. ex Willd. | Rajouri, roadsides, 950 m, 5.3.1988, G. H. Dar 964; Rajouri city, along Kitchen gardens, flowers white, peduncles longer than pedicels, berries black, 28.8.1987, G. H. Dar 9325 (other forms with peduncles shorter than pedicels, and berries red are seen at Noorichumb); Rajouri, Budhal, 1900 m, 5.1.2010, Akhtar 1502. |
| <i>Solanum incanum</i> L. | Rajouri, Kalakote, 780 m, waste places, flowers cream-white, 1.9.1987, G. H. Dar 9346. |
| <i>Solanum pseudocapsicum</i> L. | Rajouri, Darhal, 1550 m, 6.1.2010, Akhtar 1589. |
| <i>Solanum erianthum</i> D. Don | Poonch, Lohren, 2200 m, 6.1.2010, Akhtar 1725. |
| Theaceae | |
| <i>Eurya acuminata</i> DC. | Poonch, Dera Ki Gali, 1800 m, 20.10.2006, Z. S. Khan 1234. |
| Thymelaeaceae | |
| <i>Daphne oleoides</i> Schreber | Poonch, Lohren forest, 2200 m, 9.1.2010, Akhtar 1247. |
| Tiliaceae | |
| <i>Grewia optiva</i> Drummond ex Burret | Rajouri, Kheora, 1000 m, 30.3.1988, G. H. Dar 9686; Rajouri, 950 m, 20.10.1987, G. H. Dar 9458; Poonch road, 900 m, 10.1.2010, Akhtar 1213; Rajouri, Budhal forest, 2200 m, 8.1.2010, Akhtar 1230. |
| <i>Corchorus aestuans</i> L. | Rajouri, Ujhan, 1000 m, along cultivated and waste fields, 27.9.1988, G. H. Dar 9781. A coarse fibre is occasionally extracted from this plant in parts of India which is of no commercial value. The roots and leaves are said to cure gonorrhoea and used in making an injection for urethral discharge. The seeds are stomachic and used in treating pneumonia. |
| Ulmaceae | |
| <i>Celtis australis</i> L. | Rajouri, Budhal forest and Poonch, Surankote, 1800 m, 5.1.2010, Akhtar 1202. |
| <i>Ulmus villosa</i> Brandis ex Gamble | Poonch, Lohren, 2200 m, 9.1.2010, Akhtar 1291; Poonch, Mendhar, 900 m a frequent tree, 6.2.1988, G. H. Dar 9517. |
| Urticaceae | |
| <i>Debregeasia salicifolia</i> (D. Don) Rendle | Rajouri: Shahdara Sharief, 1550 m, common shrub with reddish brown, grey-tomentose branches and white-tomentose undersurface of leaves; male perianth light pink, 17.2.1988, G. H. Dar 9561. |
| <i>Pilea umbrosa</i> Wedd. | Poonch, Noorichumb, 2200 m, moist scrubby slopes, 12.8.1987, G. H. Dar 9278. |
| <i>Urtica dioica</i> L. | Poonch, Lohren, 2200 m, 6.1.2010, Akhtar 1411. |
| Violaceae | |
| <i>Viola biflora</i> L. | Poonch, Bufliaz forest, 1800 m, 8.1.2010, Akhtar 1249 b. |
| <i>Viola odorata</i> L. | Poonch, Bufliaz forest, 1800 m, 5.1.2010, Akhtar 1249 a. |
| Angiosperms: Monocotyledons | |
| Alliaceae | |
| <i>Allium jacquemontii</i> Kunth | Rajouri, 1000 m, sandy slopes along roadsides enroute to the Degree College, 25.4.1988, G. H. Dar 9445. |
| Araceae | |
| <i>Arisaema flavum</i> (Forssk.) Schott. | Poonch, Noorichumb, 2200 m, common throughout, right from Rajouri, 12.8.1987, G. H. Dar 9248. |
| Arecaceae | |
| <i>Phoenix humilis</i> Royle | Rajouri city, lawns and parks, 950 m, 9.8.1993, G. H. Dar 9953. |
| Cyperaceae | |
| <i>Cyperus difformis</i> L. | Rajouri, Sora, 1000 m, 20.8.1987, G. H. Dar 9695. |
| <i>Cyperus exaltatus</i> Retz. | Rajouri, 950 m, 22.7.1987, G. H. Dar 9195. |
| <i>Cyperus rotundus</i> L. | Rajouri, Kheora, 1000 m, 22.9.1987, G. H. Dar 9295. |
| <i>Fimbristylis bisumbellata</i> (Forssk.) Bub. | Rajouri, 950 m, 30.8.1987, G. H. Dar 9945. |
| <i>Scirpus juncoides</i> Roxb. | Rajouri, Kheora, 1000 m, 21.8.1987, G. H. Dar 9795. |
| Liliaceae | |
| <i>Colchicum luteum</i> Baker | Poonch, Lohren forest, 2300 m, 9.1.2010, Akhtar 1294. |
| <i>Fritillaria imperialis</i> L. | Poonch, Lohren forest, 2300 m, 9.1.2010, Akhtar 1295. |
| Orchidaceae | |

TABLE 1. CONTINUED.

| PLANT TAXA | DETAILS OF EXSICCATAE |
|--|---|
| <i>Spiranthes lancea</i> (Thunb.) Backer | Rajouri, Thanna Mandi, 1500 m, 20.2.1988, G. H. Dar 9579. |
| <i>Zeuxine strateumatica</i> (L.) Schlechter | Poonch, Mendhar, 900 m, moist sides of water channels, infrequent, 6.2.1988, G. H. Dar 9545. |
| Poaceae | |
| <i>Agrostis munroana</i> Aitch. & Hemsl. | Rajouri, Kheora, 1000 m, 20.10.1987, G. H. Dar 9439; Ujhan, Rajouri, 15.9.1987, G. H. Dar 9352. |
| <i>Apluda mutica</i> L. | Rajouri, Kheora, 1000 m, 20.10.1987, G. H. Dar 9445. |
| <i>Arthraxon lancifolius</i> (Trin.) Hochst. | Rajouri, Chingus, Nowshera, 860 m, 6.1.2010, Akhtar 1104. |
| <i>Bothriochloa ischaemum</i> (L.) Keng | Poonch, Lohren, 2100 m, crop field, 9.1.2010, Akhtar 1278. |
| <i>Brachiaria ramosa</i> (L.) Griseb. | Rajouri, Ujhan, 1100 m, 27.9.1988, G. H. Dar 9879. |
| <i>Bromus japonicus</i> Thunb. ex Murr. | Poonch road, 950 m, 6.1.2010, Akhtar 1405. |
| <i>Capillipedium assimile</i> (Steud.) A. Camus | Rajouri, Kheora, 1000 m, 20.10.1987, G. H. Dar 9442. |
| <i>Chrysopogon gryllus</i> Trin. ssp. <i>echinulatus</i> (Nees) T. A. Cope | Poonch, Mendhar, 900 m, 6.2.1988, G. H. Dar 9522. |
| <i>Cymbopogon pospischilii</i> (K. Schum.) C. E. Hubbard | Rajouri, Chowdhary Nar, 1050 m, 15.9.1987, G. H. Dar 9356. |
| <i>Cymbopogon martinii</i> (Roxb.) Wats. | Rajouri, Kheora, 1000 m, 20.9.1987, G. H. Dar 9391. |
| <i>Cymbopogon distans</i> (Nees ex Steud.) Wat | Rajouri, 950 m, 1.12.1987, G. H. Dar 9489. |
| <i>Cynodon dactylon</i> (L.) Pers. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1279. |
| <i>Digitaria ciliaris</i> (Retz.) Koel. | Rajouri, 950 m, 30.8.1988, G. H. Dar 9948. |
| <i>Digitaria setigera</i> Roth ex Roem. & Schult. | Rajouri, Air field, 950 m, 27.9.1988, G. H. Dar 9919. |
| <i>Eleusine indica</i> (L.) Gaertn. | Rajouri, 950 m, 30.8.1987, G. H. Dar 9345. |
| <i>Hemarthria compressa</i> (L.f.) R. Br. | Rajouri, 950 m, 31.8.1987, G. H. Dar 9763. |
| <i>Imperata cylindrica</i> (L.) Raeuschel | Rajouri, Kheora, 1000 m, 20.9.1987, G. H. Dar 9394. |
| <i>Isachne himalaica</i> Hook. f. | Rajouri, Ujhan, 1050 m, 27.9.1988, G. H. Dar 9889. |
| <i>Lolium perenne</i> L. | Poonch, Lohren, 2100 m, 9.1.2010, Akhtar 1268. |
| <i>Oplismenus compositus</i> (L.) P. Beauv. | Rajouri, 950 m, 31.8.1988, G. H. Dar 9997. |
| <i>Pennisetum orientale</i> L. C. Rich. | Rajouri, Chowdhary Nar, 1050 m, 20.8.1987, G. H. Dar 9358; Kheora, Rajouri, 20.8.1987, G. H. Dar 9359; Poonch, Noorichumb, 2200 m, 12.8.1987, G. H. Dar 9257. |
| <i>Phragmites karka</i> (Retz.) Trin. ex Steud. | Rajouri, Ujhan, 1050 m, 27.9.1988, G. H. Dar 9989. |
| <i>Poa pratensis</i> L. | Poonch, Bufliaz, 1800 m, 8.1.2010, Akhtar 1269. |
| <i>Poa bulbosa</i> L. | Poonch, Bufliaz, 1800 m, 8.1.2010, Akhtar 1452. |
| <i>Setaria pumila</i> (Poir.) Roem. & Schult. | Rajouri, 950 m, 30.8.1987, G. H. Dar 9947. |
| <i>Setaria viridis</i> (L.) P. Beauv. | Rajouri, 950 m, 30.8.1987, G. H. Dar 9946. |
| <i>Sorghum halepense</i> (L.) Pers. | Poonch, Lohren, 2100 m, crop field, 9.1.2010, Akhtar 1674 |
| <i>Sorghum nitidum</i> (Vahl) Pers. | Poonch, Lohren, 950 m, crop field, 9.1.2010, Akhtar 1675 |
| <i>Themeda anathera</i> (Nees ex Steud.) Hack. | Rajouri, Ujhan, 1050 m, 27.9.1988, G. H. Dar 9789 a. |
| <i>Triticum aestivum</i> L. | Cultivated. Rajouri, Ujhan, 1050 m, 27.9.1988, G. H. Dar 9789 b |
| <i>Stipa sibirica</i> (L.) Lam. | Poonch, Lohren forest, 2300 m, 9.1.2010, Akhtar 1129. |
| Potamogetonaceae | |
| <i>Potamogeton perfoliatus</i> L. | Poonch, Mendhar, 900 m, in water channels along with <i>Chara</i> species; 6.2.1988, G. H. Dar 9518. |
| Typhaceae | |
| <i>Typha angustata</i> Bory and Chaub. | Poonch, Surankote, 1350 m, marshes and stream banks, 9.1.2010, Akhtar 1621. |

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