

Assessment of Angiosperm taxa at Bharsar and its adjoining area of district Pauri Garhwal, Uttarakhand, India with emphasis on ethnomedicinal uses

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Abstract. Bisht AS. 2017. *Assessment of Angiosperm taxa at Bharsar and its adjoining area of district Pauri Garhwal, Uttarakhand, India with emphasis on ethnomedicinal uses.* Asian J For 1: 1-17. The Himalayas region becomes an enigma for various aspects including biological diversity. Bharsar region, district Pauri Garhwal, Uttarakhand, India is a biologically important region in the Himalaya, yet there is limited information on the flora diversity comprised in this region. This paper aimed to reveal the biological diversity of plants within Angiosperm in the Bharsar region. Botanical surveys were conducted in Bharsar and its adjoining area from December 2014 to December 2016. A total of 75 families and 274 species of Angiosperm plant were recorded during the study period with 237 species were dicotyledons (66 families), and 37 species of monocotyledons (9 families). Out of the 75 angiosperms families, Asteraceae contributed the highest with 13.14% (36 species), followed by Fabaceae 6.16% (17 species), Lamiaceae and Rosaceae both 5.43 % (15 species), Poaceae 4.71%, Ranunculaceae 4.35 % (12 species), Polygonaceae 4.04% (11 species). The people in this region use a variety of plant species for various purposes including medicine, food, fuel, and fodder. Bharsar happens to be one of the newly developed areas and experiences different types of biotic pressure of plant life which are especially accelerating with the process of developmental activities. This study serves as baseline information for future studies including those aiming to monitor the biodiversity in Bharsar region.

Keywords: Angiosperm, Bharsar, diversity, flora, Garhwal, Himalaya, medicinal plants

INTRODUCTION

The Himalayas is the pivotal source of attractions, curiosity, and challenge to human intellect through the ages. Amongst several aspects of the Himalayas, the vegetation provides an everlasting and interesting field of investigation. The diversity, copiousness, as well as uniqueness of the plant components in various habitats, retained sound and aesthetic environment of the Himalayas. However, in recent decades, excessive exploitation of vegetation, unplanned land use, natural disasters, and several developmental processes, have accelerated the deterioration of vegetation or loss of individual species. This situation is worsened since there is a limited detailed botanical record for several of the localities or regions. One of such botanical interests is located in a little-known region in the Bharsar in district Pauri, which sustains unique and rich genetic resources.

In view of the multiple stresses and depletion of genetic resources and habitat, today's foremost concern of the globe in general and Himalayas, in particular, is the conservation of biological diversity, for which detailed descriptions of plant genetic entities are essential. Keeping in view: (i) the diversity and richness of biological resources in vast and varied stretch of land; (ii) the lack of earlier record; (iii) the deterioration of mountain ecosystem; and (iv) present-day concern of biodiversity, an

attempt is made to reveal the biological diversity of plant within Angiosperm in the Bharsar region of District Pauri Garhwal, Uttarakhand, India.

MATERIALS AND METHODS

Study area

The present study was carried out in the temperate regions of Bharsar area (Figure 1). Bharsar is situated about 57 km from the district headquarter, Pauri Garhwal on the Pauri- Thalain-Ram Nagar National Highway 121. The district Pauri Garhwal is the most fascinating segment of the Himalaya, stretching from the Ram Ganga River that separates Pauri-Kumaon border in the East and to Ganga demarcating the Western border.

Soil

Soil texture, color, and nature represent wide range of variations, depending upon geology, altitude, slope aspects, climate, vegetation, and biological and chemical interactions of particular site. In general, the soil is deep clay-loam. The soil is slightly acidic and rich in potassium, medium in phosphorous and nitrogen contents, with the exception of some cultivated fields.

Climate

In general, the climate of Bharsar represents mild summer, higher precipitation, and prolonged cold winter season. The climatic factors, such as precipitation, temperature, relative humidity and wind, in association with elevation, slope aspects, drainage, vegetation, etc., are responsible for the micro-climate of this area. Generally, days in Bharsar are fairly warm followed by cool nights. The area receives adequate sunshine hours whereas the growing period is shorter due to long winter. The area also receives heavy precipitation during monsoon and occasional snowfall during winter season. The mean monthly weather data for one year is presented in Figure 2.

Data collection

The present investigation was a result of extensive and intensive field surveys, conducted from November 2013 to April 2016 and focused on an assessment of angiosperm diversity at the Bharsar and its adjoining areas of Pauri Garhwal. The specimens were collected by usual methods of collection, preservation, and maintenance of specimen in the herbarium with field notes of the collected specimens were identified with the help of recent and relevant floras i.e. Gaur (1999), Naithani (1985).

Information on medicinal properties of various plant species was gathered through personnel interviews with the local inhabitants and also cross-checked with various literature. Usually, the information was collected from the local 'vaidyas' or medicinal practitioners, however occasionally the information was also obtained from housewives, rural old folk, and grazers with long experience.

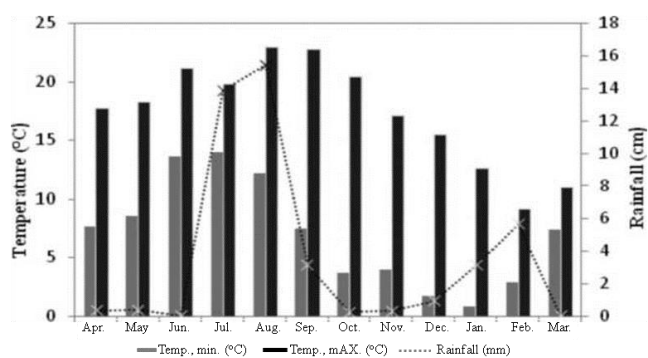


Figure 2. Temperature and rainfall in Bharsar, District of Pauri Garhwal, Uttarakhand, India



Figure 1. Study site in Bharsar, District of Pauri Garhwal, Uttarakhand, India

Table 1. The summary of families, genera and species of Angiosperms in Bharsar, District of Pauri Garhwal, Uttarakhand, India

Groups	Families		Genera		Species	
	Number	Percent	Number	Percent	Number	Percent
Dicotyledones	66	88.00	177	84.43	237	86.59
Monocotyledons	9	12.00	33	15.56	37	13.40
Total	75	100.0	212	100.00	274	100.00

RESULTS AND DISCUSSION

Results

In total, 274 species of 75 families of Angiosperm flora were collected during the study period in which 237 species were dicotyledons (66 families) and 37 species of monocotyledons (9 families). Out of the 75 families, Asteraceae contributed the highest share of 13.04% (36 species), followed by Fabaceae 6.16 % (17 species), Lamiaceae and Rosaceae both 5.43 % (15 species), Poaceae 4.71%, Ranunculaceae 4.35 % (12 species), Polygonaceae 4.04% (11 species) and other families make 56.84 % of total flora in study area during study period. The composition based on plant habitus is shown in Figure 3 and detailed statistics are presented in Tables 2 and 3.

The families were arranged according to the Cronquist system of classification (1981). The genera and species were arranged alphabetically. Ethnobotanical uses have also appended wherever applicable those plants are medicinally used.

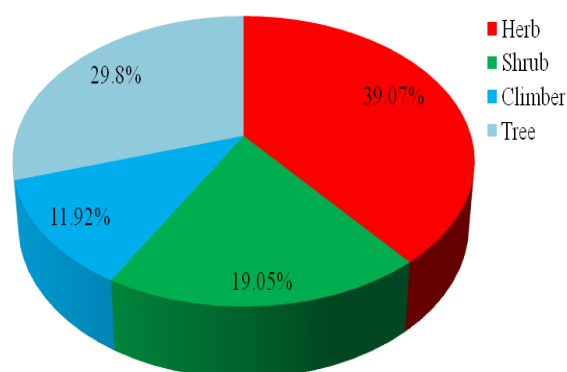


Figure 3. Composition of Angiosperm flora in study area in Bharsar, District of Pauri Garhwal, Uttarakhand, India based on habitus

Table 2. Contribution of family, genera, and species in study area in Bharsar, District of Pauri Garhwal, Uttarakhand, India

Family	Genera		Species	
	Number	Percent	Number	Percent
Acanthaceae	4	1.91	4	1.46
Amaranthaceae	3	1.44	3	1.10
Amaryllidaceae	1	0.48	1	0.37
Anacardiaceae	2	0.96	2	0.73
Apiaceae	4	1.91	4	1.46
Apocynaceae	1	0.48	1	0.37
Araceae	2	0.96	2	0.73
Araliaceae	1	0.48	1	0.37
Asteraceae	26	12.38	36	13.14
Balsaminaceae	1	0.48	1	0.37
Begoniaceae	1	0.48	1	0.37
Berberidaceae	1	0.48	2	0.73
Betulaceae	1	0.48	1	0.37
Brassicaceae	3	1.44	3	1.10

Cannabinaceae	1	0.48	1	0.37
Caryophyllaceae	3	1.44	4	1.46
Cesalpiniaceae	1	0.48	1	0.37
Chenopodiaceae	1	0.48	1	0.37
Campanulaceae	2	0.96	2	0.73
Convolvulaceae	1	0.48	1	0.37
Corylaceae	1	0.48	1	0.37
Crassulaceae	2	0.96	2	0.73
Cucurbitaceae	4	1.91	4	1.46
Cyperaceae	4	1.91	6	2.19
Daphniphyllaceae	1	0.48	1	0.37
Dioscoreaceae	1	0.48	2	0.73
Dipsacaceae	1	0.48	1	0.37
Ericaceae	5	2.38	3	1.10
Euphorbiaceae	3	1.43	3	1.10
Fabaceae	12	5.72	17	6.21
Fagaceae	1	0.48	4	1.46
Fumariaceae	1	0.48	2	0.73
Gentianaceae	3	1.43	8	2.92
Geraniaceae	1	0.48	2	0.73
Hippocastanaceae	1	0.48	1	0.37
Hypericaceae	1	0.48	3	1.10
Juglandaceae	1	0.48	1	0.37
Lamiaceae	13	6.19	15	5.48
Lauraceae	3	1.44	4	1.46
Liliaceae	3	1.43	3	1.10
Linaceae	1	0.48	1	0.37
Lythraceae	1	0.48	1	0.37
Malvaceae	1	0.48	1	0.37
Meliaceae	2	0.96	2	0.73
Mimosaceae	1	0.48	1	0.37
Moraceae	1	0.48	5	1.83
Myricaceae	1	0.48	1	0.37
Orchidaceae	6	2.86	6	2.19
Oxalidaceae	1	0.48	2	0.73
Papaveraceae	1	0.48	1	0.37
Plantaginaceae	1	0.48	2	0.73
Poaceae	12	5.72	13	4.75
Polygonaceae	7	3.34	11	4.02
Primulaceae	2	0.96	2	0.73
Ranunculaceae	4	1.91	12	4.38
Rhamnaceae	1	0.48	1	0.37
Rosaceae	11	5.24	15	5.48
Rubiaceae	3	1.43	6	2.19
Rutaceae	3	1.43	3	1.10
Sapotaceae	1	0.48	1	0.37
Saxifragaceae	4	1.91	4	1.46
Scrophulariaceae	6	2.86	6	2.19
Smilacaceae	2	0.96	2	0.73
Solanaceae	1	0.48	2	0.73
Symplocaceae	1	0.48	1	0.37
Theaceae	1	0.48	1	0.37
Thymelaeaceae	1	0.48	1	0.37
Tiliaceae	2	0.96	2	0.73
Ulmaceae	1	0.48	2	0.73
Urticaceae	3	1.44	3	1.10
Valerianaceae	1	0.48	2	0.73
Verbenaceae	2	0.96	2	0.73
Violaceae	1	0.48	3	1.10
Vitaceae	1	0.48	1	0.37
Zingiberaceae	2	0.96	2	0.73
Total	210	100	274	100

Table 3. List of taxa with ethnobotany notes in Bharsar, District of Pauri Garhwal, Uttarakhand, India

Botanical name	Local name	Habit	Ethnobotany
DICOTYLEDINEAE			
Lauraceae			
<i>Cinnamomum tamala</i> Buch. – Ham.	Dalchini, Tejpat.	Tree	Bark and dried leaves are used for flavoring tea and various food preparations; bark is chewed for dyspepsia and throat irritation
<i>Neolitsea cuipala</i> Buch. – Ham. ex D. Don.	Lampatiya	Tree	Twigs are used as fuel and leaves as fodder. Fruits paste with Camphor are applied on infested wounds of cattle. Wood is used for agricultural implements.
<i>Neolitsea pallens</i> D. Don.	Bilaru	Tree	Wood is used for construction of various articles. Oil extract from the fruits is used in scabies and eczema.
<i>Persea odoratissima</i> (Nees)	Kaula	Tree	Wood is for construction and furniture; plants are used for silkworm farming.
Ranunculaceae			
<i>Anemone obtusiloba</i> D. Don.	Kanchphool	Herb	Root decoction is given to cure diarrhea.
<i>Anemone rivularis</i> Buch – Ham.	Mirchilee	Herb	Paste of leaves is applied externally on forehead in headache. Leaf juice is applied to wound, sores, and earache in local therapy.
<i>Anemone vitifolia</i> Buch.-Ham. ex DC.	Mudeela	Herb	Roots and leaves paste are applied externally on ringworm and eczema in folk medicine and leaves used as fodder
<i>Clematis barbellata</i> Edgew.	Kanguli	Climber	Leaves are poisonous to cattle, leaf paste is externally applied for skin ailments.
<i>Clematis gouriana</i> Roxb. ex DC.	Kanguli	Climber	Leaves are poisonous to livestock, fiber is used for coarse ropes. The root decoction (about 15 ml) is used three times every day for three days in stomachache.
<i>Clematis connata</i> DC.	Ghantiyali	Climber	Leaves are used as fodder for goat and sheep.
<i>Clematis montana</i> Buch.-Ham. ex DC.	Kujju.	Climber	Leaves are browsed by sheep and goats. Leaf extract is given to cure diabetes and urinary troubles
<i>Ranunculus diffusus</i> DC.	Angasia – Jhar.	Herb	-
<i>Ranunculus hirtellus</i> Royle	Simariya	Herb	Plant paste is externally used on deteriorated wounds. Plant is browsed by goats.
<i>Ranunculus laetus</i> Wallich ex D. Don. in Royle	Dainya	Herb	
<i>Thalictrum foliolosum</i> DC.	Mamiri	Herb	Root is used in ophthalmia and also in colic and fever.
<i>Thalictrum secundum</i> Edgew.	Peelijari	Herb	Root is juice taken to relieve stomach disorders in folk medicine.
Berberidaceae			
<i>Berberis aristata</i> DC.	Kingore	Shrub	Juice from bark of stem or root often known as 'Rasaut' dropped in ophthalmia. Infusion of root is given in fever. Edible fruits, bark yields yellow dye.
<i>Berberis asiatica</i> Roxb. ex DC.	Kilmora	Shrub	Root decoction (about 20 ml.) is taken thrice a day in body inflammation and stomachache.
Papaveraceae			
<i>Argemone mexicana</i> Linn	Kanjilu	Herb	The seed emetic and narcotic are used as medicine; root decoction as wormicide; root chewed in leucorrhoea.
Fumariaceae			
<i>Corydalis cashmeriana</i> Royle	-	Herb	-
<i>Corydalis cornuta</i> Royle	Balsam jar	Herb	Aqueous paste of roots taken to reduce body swelling and inflammations root juice given in fever.
Daphniphyllaceae			
<i>Daphniphyllum himalense</i> Benth.	Ratniyalu	Tree	Wood is used in agriculture implements and fuel.

Ulmaceae			
<i>Celtis australis</i> Linn.	Kharik	Tree	Edible fruits, leaves provide good fodder. Bark gives yellow dye, wood used for making small articles. It is an important tree of agroforestry.
<i>Celtis eriocarpa</i> Decne. in Jacq.	Kharik	Tree	Edible fruits, leaves as fodder, wood for fuel and making small articles, etc.
Cannabinaceae			
<i>Cannabis sativa</i> Linn.	Bhang	Herb	Bark – fiber used for making ropes, sacs, and rough clothes; stem as a fuel. Seed is used as condiment; seed – oil edible, besides, its leaves and flowers used as an intoxicating agent
Moraceae			
<i>Ficus auriculata</i> Lour.	Timla	Tree	Leaves are made into cups and plates; also provide good fodder for cattle; ripe fruit edible, unripe fruits made into vegetables. Plants are conserved for their religious significance and utilisations.
<i>Ficus palmata</i> Forsk.	Bedu	Tree	Leaves and twigs yield good fodder, fruits delicious in taste, often taken with salt or filled inside the bread, fruits medicinal for digestive disorders and useful plant of Agroforestry.
<i>Ficus sarmentosa</i> Buch. - Ham	Beduli	Shrub	Edible fruits; leaves provide good fodder.
<i>Ficus subincisa</i> Buch. – Ham.	Chachari	Tree	Leaves and branches are used as fodder; Edible fruits
<i>Ficus religiosa</i> Linn.	Peepal	Tree	Traditional use as in Temples and as fodder.
Urticaceae			
<i>Urtica dioica</i> Linn.	Kandali	Shrub	Stem yield strong – shining fiber, used for sacs, ropes, and mass; young branches and leaves are used as delicious pot herb; seed oil edible as well as medicine in sciatica, rheumatism and several skin ailments; hair – wash leaf extract believed to avoid baldness.
<i>Elatostema sessile</i> J. & G.Forster	Chaulu.	Herb	-
<i>Girardinia diversifolia</i> (Link.) Friis, Kew Bull.	Bhainsya kandali	Herb	-
Juglandaceae			
<i>Juglans regia</i> Linn.	Akhrot	Tree	Edible fruits and also provide oil, wood is hard, excellent for furniture, carved work, gunstocks, and veneers. Bark used as dye and as medicine, rind of fruits used to intoxicate fishes and for dyeing and tanning. Leaves mixed with stored grains as fungicide and insecticide and important tree of social forestry.
Myricaceae			
<i>Myrica esculanta</i> Buch.-Ham. ex D.Don.	Kaphal	Tree	Edible fruits, raw or made into refreshing drinks, bark is used to intoxicate fishes and yield yellow dye and wood is used as fuel and in agricultural implements.
Betulaceae			
<i>Alnus nepalensis</i> D.Don.	Utees	Tree	Wood is used for carpentry and construction; bark used is in local medicine; fast-growing trees used as soil binders.
Fagaceae			
<i>Quercus floribunda</i> Lindley ex Rehder.	Moru or Tilonj,	Tree	Wood is used as household articles and as fuel, leaves provide fodder, fruits eaten by wild animals.
<i>Quercus glauca</i> Thunb.	Harinj, Phaniyant	Tree	Wood is used as household articles and as fuel, leaves provide fodder.
<i>Quercus leucotrichophora</i> A. Camus in Riviera Sci.	Banj, Eng. White Oak.	Tree	Wood is used as fuel, rarely for agricultural implements; leaves as fodder. Leaves are used as fodder, gum of the tree medicinally is used for gonorrhoeal and digestive disorders. Fruits are eaten by monkeys and bears decomposed leaves used, as organic manure. It is also an important tree of social forestry.
<i>Quercus semecarpifolia</i> Smith	Khairu or Kharsu	Tree	Wood is used as fuel, rarely for agricultural implements; leaves as fodder, important tree for social forestry.
Corylaceae			
<i>Carpinus viminea</i> Lindley	Kathway, Chamkharik	Tree	Wood is used for furniture and articles of sports as well as weaving shuttle; leaves used as fodder.
Chenopodiaceae			
<i>Chenopodium album</i> Linn	Bathua	Herb	Leaves is used as pot– vegetable; bread prepared from the grinned grains.

Amaranthaceae				
<i>Achyranthes bidentata</i> Blume	Chicheree, Latjira	Herbs		Root infusion is taken in malarial fever. Leaf extract supposed to facilitate delivery, root powder used in making local beverages, plant decoction used in dropsy and bronchitis.
<i>Alternanthera sessilis</i> (Linn.) DC. in Cat.	Gudre-Saag	Herb		Occasionally leaves are used as vegetables during scarcity.
<i>Cyathula tomentosa</i> (Roth) Moq. in DC.	Lichkura	Herb		Leaf extract has emetic properties and given in snakebite, plant used as fodder.
Caryophyllaceae				
<i>Arenaria serpyllifolia</i> Linn.		Herb		
<i>Stellaria media</i> (Linn.) Vill.	Badyal	Herb		Plant is used as green vegetables, as well as fodder; plant paste is externally applied on burns, boils, and wounds.
<i>Stellaria monosperma</i> Buch. – Ham.	Badyalu	Herb		
<i>Gypsophila cerastioides</i> D. Don.	Bakarchee	Herb		Poultice of plant applied on boils and wounds.
Polygonaceae				
<i>Bistorta amplexicaul</i> D. Don.	Kutrya	Herb		Decoction of plant is said to cause abortion if taken orally. Leaf paste is applied on wounds and extracted to relieve dysentery
<i>Fagopyrum dibotrys</i> Wallich ex Meisn.	Kanalya	Herb		Leaves occasionally are used as vegetables and leaf paste rubbed on insect bites.
<i>Fallopia pterocarpa</i> Wall.	-	Herb	-	
<i>Koenigia delicatula</i> (Meisn) Hara.	-	Herb	-	
<i>Persicaria barbata</i> (Linn.) Hara.	-	Herb	-	
<i>Persicaria capitata</i> (Buch.-Ham. ex D. Don)	Kaflya	Herb	-	
<i>Polygonum emodi</i> Meisn.	-	Herb	-	
<i>Polygonum plebeium</i> R. Br.	Dondya	Herb		Plant is used for manure and root extract is applied on head to avoid baldness.
<i>Polygonum recumbens</i> Royle	-	Herb		
<i>Rumex hastatus</i> D. Don.	Almoru	Herb		Sour leaves, made into sauce, leaf extract applied on cuts and wounds to check bleeding and also believed to relieve nettle sting inflammation.
<i>Rumex nepalensis</i> Spreng.	Almora	Herb		The sap of leaves and stems is applied on cuts for its astringent powder.
Theaceae				
<i>Eurya acuminata</i> DC	Deura	Tree		Wood is used as fuel and for agricultural implements. Green leaves and young twigs are lopped for fodder.
Hypericaceae				
<i>Hypericum elodeoides</i> Choisy in DC.	Basanti.	Herb	-	
<i>Hypericum oblongifolium</i> Choisy	Chitroi	Herb		Leaves are lopped for fodder, roots yield yellow dye, decoction of leaves and stem given to facilitate delivery
<i>Hypericum uralum</i> Linn.	Bhyoul	Herb		Paste of leaves is applied on cuts to stop bleeding. Infusion of leaf given in malarial fever. Seed powder against food poisoning and as abortifacient.
Tiliaceae				
<i>Grewia sapida</i> Roxb. ex DC.	Bhimal	Shrub		The extraction of bark is given to pregnant women for smooth delivery. The extraction is also given in constipation.
<i>Triumfetta rhomboidea</i> Jacq.	Liswa Kura	Shrub		Root juice is applied on the cuts; hot infection of fruits and leaves is given to facilitate delivery.
Malvaceae				
<i>Urena lobata</i> Linn.	Chatkura	Shrub		Stem yields a coarse fiber, flower expectorant, root paste applied on body pain and rheumatism.
Violaceae				
<i>Viola biflora</i> J. Smith in Rees.	Banfsa	Herb		The whole plant either in the form of extract or powder is taken as diaphoretic, useful in skin and blood diseases, flowers and leaves boiled with tea, supposed to be good for fever and cough.
<i>Viola tricolor</i> Wallich in Roxb	Banfsa	Herb		Decoction of plants is useful in malarial fever, bronchitis and asthma, root used as an emetic, flower demulcent, sometimes eaten raw and leaf juice applied on cuts and wounds.
<i>Viola pilosa</i> Blume	Banafsa.	Herb		Fresh flower is boiled with tea to relieve cough and cold. Flowers are eaten raw: leaf paste applied on headache and jaundice.

Cucurbitaceae			
<i>Coccinia grandis</i> (Linn.) Voigt.	Kaduri	Herb	Leaves and root juice are given in diabetes, leaves are also supposed to be antiseptic; fruit juice is given in gonorrhoea.
<i>Cucumis hardwickii</i> Royle.	Elaroo	Herb	Decoction of root barks is given and fevers; seeds are given in suppressed urination.
<i>Mukia maderaspatana</i> Linn.	Ban kakari	Climber	Fruit and vegetable are given in malarial fever and urinary disorders; seed paste with warm water is given to relieve vomiting.
<i>Solena amplexicaulis</i> Lam.	Gawal Kakari	Herb	Root and seed are given in digestive troubles; seed mixed with leaf extract of Vasik, believed to cause abortion.
Begoniaceae			
<i>Begonia picta</i> Smith	Patharchatta	Herb	Decoction of plant in boiled water is given in colic and dyspepsia and young leaves occasionally cooked as vegetable.
Brassicaceae			
<i>Barbarea vulgaris</i> R.Br. in Aiton f.	-	Herb	-
<i>Rorippa indica</i> (Linn.) Hiern.	Piria	Herb	Plant juice is given in diarrhoea and pastes applied on sprains.
<i>Thlaspi arvense</i> Linn.	Maula, Bulbulii	Herb	Leaves are used as green vegetables; poultice of leaves applied on cuts and wounds
Ericaceae			
<i>Gaultheria nummularioides</i> D.Don.	Bhwinla	Shrub	-
<i>Lyonia ovalifolia</i> (Wallich) Drude.	Anyar	Tree	Wood is used as fuel, young leaves poisonous to cattle, and seed paste applied on wounds and boils.
<i>Rhododendron arboreum</i> Smith.	Burans	Tree	Wood is used for fuel and charcoal, flowers eaten raw or made into sauce, jellies, jams or refreshing drinks, flowers and bark medicinally for digestive and respiratory disorders, and flowers useful in bee forage.
Sapotaceae			
<i>Madhuca longifolia</i> Koeing	Mahwa	Tree	Wood for various constructions flowers and Edible fruits, afresh or made into several preparations; useful in apiculture as bee – forage; seeds yield an oil, used for candle and soap manufacturing; flowers often used in local beverages.
Symplocaceae			
<i>Symplocos ramosissima</i> Wallich ex G.Don.	Lodh	Tree	Leaves are used a fodder; flowers visited by bees for nectar and pollen
Primulaceae			
<i>Androsace lanuginosa</i> Wallich in Roxb.	-	Herb	-
<i>Primula denticulata</i> Smith	Jalkutra, Eng. Primrose	Herb	Aqueous paste of flowers is used in the treatment of diabetes and urinary ailments and root paste applied to kill lice.
Crassulaceae			
<i>Sedum rosulatum</i> Edgew.	-	Herb	-
Saxifragaceae			
<i>Astilbe rivularis</i> . Buch. – Ham.	-	Shrub	Traditionally is used in workshop of deities. Powder is believed to be an abortifacient, leaves used as fodder.
<i>Bergenia ciliata</i> (Har) Sternb	Silpari, Pasanbhed.	Herb	The leaves and roots of plants are given to the patient of kidney stone. The folk belief is that if the patient takes it thrice a day i.e. morning, noon, evening he will get rid of stone very soon.
<i>Parnassia nubicola</i> Wallich ex Royle.	Phutkya.	Herb	Plant extract is taken to stimulate vomiting in case of food poisoning, paste from rootstock applied externally as an antidote to snakebite.
<i>Saxifraga diversifolia</i> Wallich ex Seringe in DC.	Silyans.	Herb	Root extract is used as vermifuge
Rosaceae			
<i>Agrimonia pilosa</i> Ledebour in Index Sem.	Lesukuria	Herb	Plant decoction is given in cough and diarrhoea, root paste with mustard oil is applied around the belly in suppressed urination.
<i>Cotoneaster microphyllus</i> Wallich ex Lindley in Edgew.	Bugarchilla	Shrub	Branches are used for making baskets, ripe fruit edible, and fuel from wood. Leaf extract and fruits are given in diarrhoea, root paste is applied on cuts and wounds and flowers useful in apiculture.

<i>Fragaria nubicola</i> Lindley ex Lacaita in J. Linn. Soc. Bot.	Gand-kaphal	Herb	Edible fruits, leaf juice is dropped for relieving earache and fruits are also used in local beverages.
<i>Potentilla atrosanguinea</i> Lod.	-	Herb	-
<i>Potentilla fulgens</i> Wallich ex Hook.	Bajardantu, Bajradanti	Herb	The paste of root is used for healing wounds. Edible fruits, plant juice applied to mouth in stomatitis and aphthae.
<i>Potentilla gerardiana</i> Lindl. ex Lehm.	-	Herb	Root paste is applied to wounds.
<i>Potentilla nepalensis</i> Hook.	-	Herb	-
<i>Prinsepia utilis</i> Royle	Bhainkal	Shrub	Seeds yield oil, used for edible purposes as well as medicinal in rheumatic pains. Root bark is used in diarrhea, flowers useful in apiculture as bee forage and sometimes plant used as biofence.
<i>Prunus cerasoides</i> D.Don.	Panyyan	Tree	Branches for walking sticks, bark in psych medicines, leaves as fodder and ripe Edible fruits, and the juice from the bark applied on body swelling and contusion, flower useful source of bee forage. Plant regarded as sacred, used in several rituals of locals.
<i>Pyracantha crenulata</i> (D.Don) M. Roemer.	Ghingaru	Shrub	Branches are used for walking sticks and tool handles, fruits are rarely edible, flowers are useful in apiculture as bee forage and plants act as soil binder.
<i>Pyrus pashia</i> Buch.-Ham. ex D.Don.	Malu or Mahel	Tree	Leaves and twig as fodder. Ripe Edible fruits are used in digestive disorders; wood made in to stick; flower use fuel in apiculture; believed to check soil erosion in landslide zones.
<i>Rosa brunonii</i> Lindley.	Kunja, Kujju	Shrub	Edible fruits, wood is used as an occasional fuel, flowers is useful in apiculture as bee forage and flower paste is applied on skin ailments.
<i>Rubus ellipticus</i> Smith in Rees.	Hinssar, Hisolu	Shrub	Edible fruits, root extract is used in local beverages as intoxicating ingredient, flowers are useful in apiculture as bee forage and plant act as soil binders.
<i>Rubus foliosus</i> D.Don.	Kala Hissar	Shrub	Young twigs and Edible fruits.
<i>Rubus paniculatus</i> . Smith	Kathula	Shrub	Fruit is edible; leaf paste is externally applied on skin ailments.
<i>Spiraea bella</i> Sims in Curtis	Kuji.	Shrub	Branches are used as brooms, seed paste applied to wash sores and wounds.
Mimosaceae			
<i>Acacia dealbata</i> Link.	Chikaka	Tree	-
Caesalpiniaceae			
<i>Caesalpinia decapetala</i> Roth.	Kingri	Shrub	Leaves are used as fodder of goat and sheep; leaves applied to burns; bark yield tannin, flowers useful of bee- forages.
Fabaceae			
<i>Astragalus leucocephalus</i> Graham ex Benth. in Royle	Rudravanti	Herb	Roots are used as blood purifiers and in skin diseases; plant infusion as tonic, leaves used as fodder.
<i>Crotalaria albida</i> Heyne ex Roth	Chunchuni	Herb	Roasted seed powder is taken as blood purifier and roots chewed in constipation.
<i>Crotalaria medicaginea</i> Lam.	Ban-Methi	Herb	Leaf juice is applied in scabies and urticaria.
<i>Desmodium concinnum</i> DC.	Sakina	Herb	-
<i>Desmodium microphyllum</i> (Thunb.) DC.	-	Shrub	-
<i>Desmodium multiflorum</i> DC.	-	Herb	Plants are browsed by cattle.
<i>Dumasia villosa</i> DC.	-	Herb	-
<i>Eriosema himalaicum</i> Ohashi.	Bhatiya	Shrub	The tuberous root is edible.
<i>Erythrina arborescens</i> Roxb	-	Tree	Leaflets are used for making plates and cups; bark is used in skin diseases; leaf extract is given in suppressed menses, and also for intestinal worms; an important tree of social forestry.
<i>Erythrina suberosa</i> Roxb.	Manura.	Tree	Wood soft, used for minor articles barks as an insecticide; leaf extracts in gonorrhoeal diseases. An important tree of social forestry
<i>Flemingia strobilifera</i> (Linn.) R.Br. in Aiton f.	Bari-Kapasi	Shrub	Plants are used as brooms. Leaves for treating hysteria and also used as fodder
<i>Indigofera glandulosa</i> Willd.	-	Herb	-
<i>Indigofera heterantha</i> Wallich ex Brandis	Sakina	Shrub	Flowers are used as vegetable, leaves are lopped for fodder, twigs are made into baskets or containers. Leaf juice is taken in diarrhea, dysentery, and cough.

<i>Lathyrus aphaca</i> Linn.	Kurphali	Climber	As a weed of crop fields and used as fodder.
<i>Piptanthus nepalensis</i> (Hook.) D.Don in Sweet.	Chembera.	Shrub	Green pods are chewed raw, ripe seeds are cooked as vegetables and extract is used as galactagogue. Leaf juice is dropped in pushed ear.
<i>Robinia pseudoacacia</i> Roxb.	Black locust	Tree	It is one of the most important nitrogen-fixing Agroforestry trees.
<i>Trifolium repens</i> Linn.	Tpatiya	Herb	Leaf paste is used as an astringent; plant provides good fodder.
Lythraceae			
<i>Woodfordia fruticosa</i> (Linn.) Kurz in J. Asiat.	Dhaura	Shrub	Flowers yield dye for silk, leaves, and bark medicinal, as febrifuge, dried flower used as tonic particularly in hemorrhoids, flowers useful in apiculture as bee forage and also made into refreshing drink during summer and also good soil binder.
Thymelaeaceae			
<i>Daphne papyracea</i> Wallich ex Studel.	Vern. Satpura	Shrub	Ropes and sacs made from the stem fiber, in the past paper was manufactured from the stem and leaves, known as Satpura, especially used for religious purposes and leaf paste applied on eczema
Euphorbiaceae			
<i>Euphobia royleana</i> Boissier in DC.	Sulla	Shrub	Planted for hedges as well as to check soil erosion in the exposed slopes. Latex considered antiseptic and germicidal.
<i>Phyllanthus amarus</i> Schum& Thonn.	Bumianwala.	Herb	Herb as an astringent stomachache diuretic and febrifuge; leaves are said to bear antibacterial properties.
<i>Sapium insigne</i> (Royle) Benth. ex Trimen.	Khinna	Tree	Leaves and bark are used for intoxicating fishes, wood is used for making floats, cases, drums, toys, matchboxes, latex is regarded as poisonous, causes blisters.
Rhamnaceae			
<i>Rhamnus purpureus</i> Edgew. in Trans. Linn. Soc.	Gaunta	Shrub	Wood is used in agricultural implements, leaves are lopped for fodder and manure, flower is useful source of bee forage, barks extract with milk given in digestive disorders.
Vitaceae			
<i>Ampelocissus divaricata</i> Wallichx Lowson	Pan – laguli.	Shrub	Fruits and young leaves are edible; stem as fibers.
Linaceae			
<i>Reinwardtia indica</i> Dumortier	Phiunli	Herb	Petals are chewed as tongue wash, considered sacred, as indicator of spring season and flower useful in apiculture as a source of bee forage.
Hippocastanaceae			
<i>Aesculus indica</i> (Colebr. ex Cambess.) Hook. in Curtis	Pangar	Tree	Cream-colored wood is made into pots and vessels, fruits are given to cattle and goat, flour from seed mixed with wheat flour during famine, seed paste is applied in rheumatic pain, flowers are useful in apiculture as a source of bee forage, leaves as fodder and manure, and also important tree of social forestry.
Anacardiaceae			
<i>Cotinus cogygria</i> Scopoli.	Jal-Tungla	Shrub	Bark and leaves are used for tanning, leaves are used for cattle padding and flowers useful sources of bee forage.
<i>Rhus parviflora</i> Roxb.	Tungla	Tree	Edible fruits, leaves mixed with tobacco, sometimes during famine fruits ground and mixed with flour. Infusion of leaves given in cholera, flowers useful source of bee-forage in apiary and sometimes used as biofence
Meliaceae			
<i>Melia azadirach</i> Linn.	Dainkan.	Tree	Leaves fruits and seeds are useful in skin diseases as well as in rheumatic pains. Fruits and leaves as antiseptics, leaves as fodder; wood useful source of bee – forage in apiary.
<i>Toona hexandra</i> (Wallich ex Roxb.) M. Roemer	Tun	Tree	It is important tree for construction purposes, furniture, and other articles. Sulphur dye is obtained from the flowers, useful source of bee-forage and apiculture, and also important tree of social forestry.
Rutaceae			
<i>Boenninghausenia albiflora</i> (Hook.) Reichb. ex Meisn.	Pissumar	Herb	Leaf paste is applied on cuts and wounds, root powder is used as antiseptic and juice given in vomiting and dysentery.
<i>Skimmia anquetilia</i> . Taylar & Airy	Nair patti	Shrub	Leaves are chewed for cooling effects, as well as mixed with other ingredients to manufacture incense dhup.
<i>Zanthoxylum aromatum</i> DC.	Timroo	Tree	Leaves and fruits are chewed for mouth wash and tooth care. Walking sticks are made from the stem, sometimes kept in the house doors, believed to get rid of all evils, bark used for intoxicating the fishes and, flowers are important source of bee forage in apiary.

Oxalidaceae			
<i>Oxalis corniculata</i> Linn.	Bhilmori, Khati-Buti	Herb	Leaves are taken as salad or cooked as vegetables and leaf juice is dropped in cataract and conjunctivitis.
<i>Oxalis dehradunensis</i> Raizada in Suppl. Duthie's Fl. U. Gang.	Khatura	Herb	A fine paste of the top shoot along with a few fruits of black pepper is applied to boils, abscesses wound and weeping eczema, also relieves in abscess of the breast.
Geraniaceae			
<i>Geranium nepalense</i> Sweet.	-	Herb	Plant infusion is used in fever and renal disorders; roots paste applied externally on itching and eczema; rot in tanning industry.
<i>Geranium wallichianum</i> D.Don ex Sweet.	Ratanjot	Herb	Root juice in diarrhea and ophthalmic, red dye obtained from the roots said to promote growth of hairs, as well as dye to woolen clothes.
Balsaminaceae			
<i>Impatiens thomsonii</i> Hook.	-	Herb	Seed edible powder of roasted seed with honey given to relieve cough and cold.
Araliaceae			
<i>Hedera nepalensis</i> K. Koch.	Laguli	Climber	Leaf and fruit paste are applied on ulcers and leaf juice given in dyspepsia.
Apiaceae			
<i>Bupleurum hamiltonii</i> Balakrishnan.	-	Herb	Roots are used in stomach and liver disorders and plant browsed by cattle.
<i>Centilla asiatica</i> Linn.	Brahmi	Herb	Plant juice or powder is used in the treatment of mental disorders and as a blood purifier; herb is regarded as a tonic and diuretic; leaf paste is applied for skin diseases including leprosy.
<i>Pimpinella diversifolia</i> DC.	Teroi, Phoree	Herb	Plant extract is given in digestive disorders and as well as in cold and cough.
<i>Selinum candollei</i> DC.	Bhutkeshi,	Herb	Root powder with honey is useful in cough and asthma and incense of root beneficial in hysteria.
Gentianaceae			
<i>Gentiana aprica</i> Decne.	Chirotu	Herb	Plant juice with flower decoction of <i>Viola</i> sp. is given in tea as a remedy of intermittent fever and headache.
<i>Gentiana capitata</i> Buch.-Ham. ex D.Don.		Herb	-
<i>Gentiana pedicellata</i> (D.Don.) Wallich ex Grisebach.	Chhoti buggi	Herb	-
<i>Gentianella contorta</i> Royle.	-	Herb	-
<i>Swertia angustifolia</i> Buch.-Ham. ex D.Don.	Chirata	Herb	Plant extract is used as a tonic and febrifuge and used as substitute for original 'Chiryata'.
<i>Swertia cordata</i> (D.Don.) C.B. Clarke in Hook. f.	Chratu	Herb	Plant is used as substitute for 'Chirayita'.
<i>Swertia chirayita</i> (Roxb.ex Fleming). Vern.	Chrayata	Herb	The plant is well known for Ayurvedic medicine "Chretta" which is used in blood diseases and as febrifuge.
<i>Swertia paniculata</i> Wall.	-	Herb	Plant is used as substitute of 'Chirayata'.
Apocynaceae			
<i>Quirivella frutescens</i> (Linn.) M.R. and S.M. Almeida,	Bel-kami	Shrub	Branches are made into baskets, leaf extract is supposed to be febrifuge and paste applied in leucoderma. Flowers are used as a source of bee-forage in apiary.
Solanaceae			
<i>Solanum erianthum</i> D.Don.	Akra	Shrub	Roots, leaves and fruits after heating are applied on wounds and burns, extract chiefly used in urinary troubles and skin diseases. Fruits occasionally eaten.

Verbenaceae

<i>Callicarpa macrophylla</i> Vahl.	Daiya	Shrub	Edible fruits, useful in oral aphthae, leaves after heating are applied externally on rheumatic pain and flowers are used as a source of bee forage.
<i>Caryopteris foetida</i> (D.Don) Thellung.	Karwi	Shrub	Used as fodder, leaf juice applied on wounds and flowers as source of bee-forage

Lamiaceae

<i>Ajuga bracteosa</i> Wallich ex Benth. in Wallich.	Neelkanthi	Herb	Leaf extract is used in malarial fever, bitter plant extract is used as a tonic, astringent, and febrifuge.
<i>Clinopodium umbrosum</i> (M. Bieb.) C. Koch in Linnaea.	-	Herb	Plant extracts are used as an astringent, carminative and as blood purifier, leaves infusion is used in gastric troubles and flowers as a source of bee-forage.
<i>Leucas lanata</i> Benth. in Wallich.	Bis-kapra.	Herb	Plant infusion is given with honey in the treatment of whooping cough and young shoots cooked as vegetable.
<i>Micromeria biflora</i> (Buch.-Ham. ex D.Don) Benth.	Gorakhopan	Herb	-
<i>Micromeria capitellata</i> Benth. in DC.	Van ajwain	Herb	Flavor of crushed leaves is inhaled in cold and sinusitis, extract of leaves with milk given in gastro-enteritis.
<i>Nepeta ciliaris</i> Wallich ex Benth. in Wallich.	Nueet	Herb	Decoction of leaves and seeds is taken in fever. Leaves also yield essential oil.
<i>Origanum vulgare</i> Linn.	Bantulsi	Herb	Plant extract is used in bronchitis, colic and diarrhea, leaves eaten as vegetable and flavoring agent, flowering branches hung on the houses to get rid of bad spirits.
<i>Plectranthus mollis</i> (Aiton) Sprengel		Herb	Flowers as a source of bee forage.
<i>Pogostemon benghalense</i> (Burm. f.) Kuntze	Kala-Basingu	Shrub	Leaf extract in water is given in colic and fever, flower important source of bee-forage and plant is a good soil binder.
<i>Prunella vulgaris</i> Linn.	Ust-khadus	Herb	Extract of the herb is used in gastric and breathing problems.
<i>Rabdosia lophanthoides</i> (Buch.-Ham. ex D.Don.) Hara.	-	Herb	-
<i>Rabdosia rugosa</i> (Wallich ex Benth.) Hara.	Chhenchneri	Shrub	Decoction of leaves is used in fever and flowers are important source of bee forage.
<i>Salvia lanata</i> Roxb.	Ghanyajhar	Herb	Leaf infusion is given in colic and diarrhea, flower paste used in cold and cough and flower as a source of bee-forage.
<i>Scutellaria scandens</i> Buch.-Ham ex D.Don.	Kutlaphul	Herb	Flowers as a source of bee forage.
<i>Teucrium quadrifarium</i> Buch.-Ham. ex D.Don.	Bilmga	Shrub	Root chewed for sore throat, infusion of leaves used as abortifacient.

Plantaginaceae

<i>Plantago erosa</i> Wall.	-	Herb	-
<i>Plantago depressa</i> Willd.	Luhurya	Herb	Paste from leaves and seeds are applied on cuts wounds and piles; plant part tied around the belly of infant for good health

Scrophulariaceae

<i>Hemiphragma heterophyllum</i> , Wall.	-	Herb	-
<i>Mazus surculosus</i> D.Don	-	Herb	-
<i>Misopates orontium</i> (Linn.) Rafinesque-Schmaltz,	Weasel's Snout	Herb	Plant is believed to be poisonous to cattle.
<i>Pedicularis punctata</i> Decne. in Jacquem.	-	Herb	-
<i>Scrophularia himalensis</i> Royle ex Benth.	Sikula	Herb	Leaves are mixed with stored grains as an insecticide.

Acanthaceae

<i>Barleria cristata</i> Linn.	Saundi, Kala-bansa	Shrub	Root decoction is used against bronchitis and pneumonia; leaves and root paste is applied on wound-swelling, root chips are added to local beverages, seeds are regarded as antidote to snake bite, flowers as a source of bee forage and plant act as soil binder.
<i>Dicliptera bupleuroides</i> Nees in Wallich.	Kulartore	Herb	The plant is used as fodder, leaf paste is applied on wounds to check bleeding, leaf juice useful in cough and gastroenteritis. Flowers as a source of bee-forage in apiary.
<i>Lepidagathis incurva</i> Buch.-Ham. ex D.Don.	-	Herb	-
<i>Pteracanthus angustifrons</i> (C.B. Clarke) Bremekamp.	Pathora	Shrub	-

Campanulaceae

<i>Cynanthus integer</i> Wall.	-	Herb	-
<i>Cynanthus lobatus</i>	-	Herb	-

Rubiaceae

<i>Galium asperifolium</i> Wallich in Roxb.	Liswa kuri	Herb	Plants paste is used fuel for skin ailments.
<i>Galium aparine</i> Linn.	Khuskusa, Kuri	Herb	Extract of leaves is used as astringent and plant paste applied on skin diseases.
<i>Galium elegans</i> Wallich in Roxb	Manjeethee	Herb	Plant extract is given in colic, dyspepsia and as well as in jaundice.
<i>Leptodermis lanceolata</i> Wall.	Padera	Shrub	Occasionally browsed by cattle; bark paste is externally applied in migraines; flowers as an important source of bee – forage in apiculture.
<i>Rubia manjith</i> Roxb. ex Fleming in Asiat. Res.	Majethi	Climber	Dye commercially known as Manjit, extracted from the root and stem, roots medicinal, as tonic and astringent, stem used as an antidote to snakebite and flower extract in bacillary dysentery.
<i>Spermodictyon suaveolens</i> Roxb.	Padera	Shrub	Root powder or extract is given in diarrhea and cholera. Leaves as fodder and are also used as insecticide for the stored grains and flowers as an important source of bee-forage.

Valerianaceae

<i>Valeriana hardwickii</i> Wallich in Roxb.	Somaya	Herb	Root decoction is used in urinary disorders; paste is applied externally in joint pains. Dried roots are used as incense and insecticide.
<i>Valeriana jatamansii</i> Jones in Asiat. Res.	Balchari	Herb	Roots are used as an aphrodisiac and in mental disorders, as well as in local beverages to promote aroma. Dried roots are also used as an incense and insecticide

Dipsacaceae

<i>Morina longifolia</i> Wallich ex DC.	Biskandaru.	Herb	Root paste is applied externally on wounds dried roots burnt as incense; the aroma of the flower believed to cause unconsciousness
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Asteraceae

<i>Ageratum conyzoides</i> Linn.	Gundrya	Herb	Plants with the root of <i>Thallictrum foliosum</i> made into paste and applied on sores, cuts and various skin ailments.
<i>Ainsliaea latifolia</i> (D.Don) Schultz-Bipontinus in Jahresber	Kauru	Herb	Decoction of roots is given in colic
<i>Anaphalis adnata</i> Wallich.	Bugla	Herb	Paste of head and leaves is applied on cuts, wounds and boils, Fibers of leaves and stem used to lit the fire by friction of stones, locally known as Agela.
<i>Anaphalis contorta</i> (D.Don) Hook. F. in Fl. Brit. India	Bugla	Herb	Paste of heads and leaves is applied on cuts, wounds and boils. Smokes of plants are used as insect repellent.
<i>Anaphalis triplinervis</i> (Sims) C.B. Clarke in Comp. Indicae	Buglya	Herb	Leaf juice is dropped in laceration of toes during rainy season. Paste of heads and leaves is applied on cuts, wounds, and boils.
<i>Artemisia capillaris</i> Thunb.	Jhirun	Herb	Decoction of leaves is taken as a bitter tonic for worms and colic, twigs used as brooms.

<i>Aster molliusculus</i> (Lindley ex DC.)	-	Herb	-
<i>Aster peduncularis</i> Wallich ex Nees.	Phulyan	Herb	Extract of plant is believed to be useful to dissolve renal-calculi and root powder as stomachic.
<i>Bidens pilosa</i> Linn.	Kumra	Herb	Plant extract with honey used in cough and bronchitis, the vegetable of the herbs considered useful in leucoderma and plants browsed as fodder.
<i>Cicerbita cyanea</i> (D.Don) G. Beauv.	-	Herb	-
<i>Cicerbita macrorhiza</i> (Royle) G. Beauv.	-	Herb	-
<i>Conyza japonica</i> (Thunb.) Lessing ex DC.	-	Herb	-
<i>Elephantopus scaber</i> Linn.	Adhomukha	Herb	Root extract is used in intermittent fever and to stop vomiting and leaves as tonic of blood diseases.
<i>Emilia sonchifolia</i> (Linn.) DC. in Wight.	-	Herb	-
<i>Erigeron sublyratus</i> DC. in Wight.	Hirankuri, Dudhi.	Herb	Occasionally upper leaves are cooked as vegetable. Herbs are used as febrifuge and leaf juice used in eye inflammation and night blindness.
<i>Eupatorium adenophorum</i> Sprengel.	Kharna, Bakura	Shrub	An obnoxious introduced weed occupying large grassy localities reducing fodder produce. Crushed leaves are applied on wounds.
<i>Gerbera gossypina</i> (Royle) G. Beauv.	Kapasee	Herb	Leaf juice is applied on wounds and cuts and paste plastered on bone fracture. In old days, fiber was used to manufacture coarse cloth for sacs and mats and also used to burn fire.
<i>Gnaphalium hypoleucum</i> DC. in Wight.	Buglya	Herb	Plant extract is applied on cuts and wounds, plant juice is applied on breast and believed to increase lactation.
<i>Gnaphalium pensylvanicum</i> Willd.	-	Herb	-
<i>Inula cappa</i> (Buch.-Ham. ex D.Don.) DC.	Athhu, Tamagari	Shrub	Roots are given in suppressed urination.
<i>Lactuca dissecta</i> D.Don.	-	Herb	-
<i>Myriactis nepalensis</i> Lessing in Linnaea.	Bakura	Herb	Leaves and young shoots are occasionally used as vegetable
<i>Pentanema indicum</i> (Linn.) Ling in Acta Phyt.	-	Herb	-
<i>Saussurea auriculata</i> (Sprengel ex DC.) Schultz-Bipontinus in Linnaea,	Thimra, Nurya	Herb	Leaf paste of the plant along with the leaves of <i>Betula utilis</i> is used externally in venereal diseases.
<i>Saussurea heteromalla</i> (D.Don.) Hand.-Mazz.	Murang	Herb	Leaf paste with mustard oil is massaged on leucoderma and wounds and root extract is taken in fever and colic.
<i>Senecio graciliflorus</i> DC.	-	Herb	Plant paste is applied on insect bites and ringworm diseases; juice of head dropped in pussied ear; plant believed to be poisonous to cattle
<i>Siegesbeckia orientalis</i> Linn.	Liskura	Herb	Decoction of plant with rice waters is taken in diarrhea and bowel complaints.
<i>Solidago virgaurea</i> Linn.	Pinja-phool	Herb	Juice of leaves is given in kidney troubles, decoction of whole herb is used for treatment of asthma, rheumatism, and wounds and root chewed in throat irritation.
<i>Sonchus asper</i> (Linn.) Hill.	Pili-dudhi, Choplya		The plant is used as a tonic to purify blood and in hepatitis and leaf paste applied on wounds.
<i>Sonchus brachyotus</i> DC.	Karatu	Herb	Roots are used in folk medicine against cough and bronchitis. Young shoots and leaves are used as vegetable in famine.
<i>Tagetes minuta</i> Linn.	Jangli genda	Herb	-
<i>Taraxacum officinale</i> Weber in Wiggers	Kanphuliya	Herb	Root extract is used in the treatment of migraine, hepatitis, and headache. Young shoots and leaves are thoroughly boiled and cooked as vegetable.

MONOCOTYLEDONEAE**Araceae**

<i>Acorus calamus</i> Linn.	Buch, gud buch	Herb	Soft drinks are made from rhizome; extract of rhizome is often used in gastric troubles of infants some times garland is tied around neck or belly to relieve jaundice; also used in bronchitis; rhizome paste used to kill lice.
<i>Arisaema intermedium</i> Blume.	Meen	Herb	Spadix is used in psychomedicine.

Cyperaceae

<i>Carex aristata</i> Tilloch and Taylor.	-	Stolons	-
<i>Cyperus niveus</i> Retz.	Murya-ghas	Herb	-
<i>Cyperus nutans</i> Vahl in Enum.	-	Herb	-
<i>Cyperus rotundus</i> Linn.	Motha	Herb	Dried underground parts used in perfumes and plant extract used as diaphoretic and astringent.
<i>Kobresia laxa</i> Nees in Wight, Contrib.	-	Herb	-
<i>Scirpus ternatanus</i> Reinwardt ex Miq.	-	Herb	-

Poaceae

<i>Apluda aristata</i> Linn.	-	Herb	Used as fodder when young.
<i>Brachiaria reptans</i> (Linn.) Gardner and C.E. Hubbard in Hook.	-	Herb	-
<i>Brachiaria villosa</i> (Lam.) A. Camus in Lecomte.	Malchu	Herb	Used as fodder to milching animals.
<i>Chrysopogon aciculatus</i> (Retz.) Trinius.	Surwala or Lampa.	Herb	As fodder but sharp callus intermingled with the body of cattle.
<i>Cynodon dactylon</i> (Linn.) Persoon.	Dubla	Herb	Plant is believed pious and used in several religious ceremonies.
<i>Dichanthium annulatum</i> (Forsk.) Stapf in Prain	-	Herb	Excessively used as fodder.
<i>Eragrostis nigra</i> Nees. ex Steudel.	-	Herb	-
<i>Eulalia trispicata</i> (Schultes.) Henrard in Blumea.	-	Herb	-
<i>Heteropogon contortus</i> (Linn.) P. Beauv. ex Roemer & Schultes	Kumrya-ghas	Herb	Grass stored as fodder for the period of scarcity.
<i>Poa annua</i> L.	-	Herb	-
<i>Saccharum filifolium</i> Steudel.	-	Herb	-
<i>Setaria viridis</i> (Linn.) P. Beauv.	Birali-ghas	Herb	The grain edibles hay and green grass as fodder.
<i>Sporobolus diander</i> (Retz.) P. Beauv.	Sitya	Herb	Crushed leaves are applied on burns and pimples and good soil binder and also provide fodder.

Zingiberaceae

<i>Hedychium spicatum</i> Buch.-Ham. ex J.E. Smith in Rees.	Kapoor Kachari	Herb	Boiled underground parts ate with salt, roasted powder of rhizome given in asthma, seeds believed to cause abortion and decoction of rhizome with sawdust of deodara taken in tuberculosis.
<i>Roscoea purpurea</i> J.E. Smith	Kakoli	Herb	Dried powder of leaves is used in wound and cuts of cattle; plant extract as a tonic.

Liliaceae

<i>Asparagus racemosus</i> Willd	Satavari, Jhiri	Herb	Root aphrodisiac, antiseptic, refrigerant is often used with freshwater or milk. Root decoction with jaggery used an abortifacient.
<i>Polygonatum cirrhifolium</i> (Wallich) Royle.	Khakan Medha	Herb	Leaves are eaten as vegetable; root infusion with milk used as an aphrodisiac and blood purifier; paste in cut and wound.
<i>Theropogon pallidus</i> (Kunth) Maxim.	-	Herb	-

Smilacaceae

Smilax aspera Linn. Kukurdara Climber Occasionally young leaves are cooked. Roots are diuretic and diaphoretic. Root paste with mustard oil massaged on rheumatic-arthritis and flowers as a source of bee-forage.

Dioscoreaceae

Dioscorea belophylla (Prain) J.O. Tairu Climber Tuber edible as well as medicinal much liked by wildlife.

Dioscorea bulbifera Linn. Genthii Climber Tuber are cooked as vegetable. Dried tuber used as an antiseptic, applied on burns and wounds, flowers occasionally visited by bee

Orchidaceae

Calanthe plantaginea Lindley. - Herb -

Coelogyne cristata Lindley. Gondya Herb Infusion of pseudobulbs given in constipation and also as an aphrodisiac

Dactylorhiza hatagirea (D. Don.) Soo Hattarjari Herb Used in Aphrodisiac and tonic.

Nom

Dandrobium monticola P.F. - Herb -

Habenaria intermedia D.Don - Herb -

Nervillia prainiana King and Pantling. - Herb -

Discussion

The study area is rich in plant biodiversity corresponding to the climate and topography of the area. The area has temperate vegetation with altitudes ranging from 1500-2200 m asl. Different factors have influenced (lower or exceeded) the normal limit of vegetation type and flowering seasons. Natural vegetation in vicinity of towns and villages in the subtropical belt has been subjected to face more biotic disturbances as compared to the villages at high elevations. There is abundance of grasses and annuals during monsoon, whereas perennials, shrubs, and trees mostly bloom during spring and summer (Bisht and Sharma 2014).

The most attractive part of vegetation in the study area was the presence of numerous medicinal plant species, the fact is generally ignored by scientists. Each plant species has its own value in the form of fodder, and vegetables, flowers as bee forage, resin, tannin, gum, dye, ornamentation, psychomedicine, and medicines, etc. A total of 274 species, near about 47 species were also purely medicinal and used in the form of leaves, stem, bark, root, flowers, fruits, seeds, and whole plant. These plant species are used against dropsy, bronchitis, boils and wounds, insect and snake bite, relieve from suffering of nettle sting, malarial fever, facilitate delivery, body pain, rheumatism, fever, cold and cough, gonorrhoea, colic and dyspepsia, diarrhea, digestive and respiratory disorders, diabetes and urinary ailments, relieving earache, body swelling and contusions, psych medicines, treatments of migraines, hepatitis and headache, dysentery, etc. by villagers and Vaishyas. Some important species include *Achyranthus bidentata*, *Agrimonia pilosa*, *Anaphalis contorta*, *A. triplinervis*, *Aster peduncularis*, *Anemone vitifolia*, *Argemone ochroleuca*, *Asparagus recemosus*, *Berberis aristata*, *Barleria cristata*, *Begonia picta*, *Bupleurum hamiltonii*, *Clematis buchananiana*, *Coccinia grandis*, *Coelogyne cristata*, *Cyathula tomentosa*, *Gerbera gossypina*, *Gnaphalium hypoleucum*, *Hedychium spicatum*, *Inula cappa*, *Jasminum humile*, *Leucus lanata*, *Saussurea heteromalla*, *Senecio graciliflorus*, *Siegesbeckia orientalis*, *Solidago virgaurea*, *Sonchus asper*, *Swertia cordata*, and *Taraxacum officinale*.

The extinction of these medicinal plants from their natural habitat is a matter of great concern but it has not attracted the attention of naturalists and environmentalists. This is probably because the medicinal wealth of this area is little known hence no agency or related departments care for the protection and management of these continuously declining species of drug importance. Changing atmospheric conditions and lack of knowledge, infectious nature of some dominating weeds e.g *Eupatorium adenophorum* and *Parthenium* sp. are among the other factors responsible for the extinction of these important medicinal plant species. (Bisht 2005; Bisht and Bhatt 2012). Due to lack of awareness about medicinal importance of these weeds they are discarded by the farmers. These weeds can become an additional source of income for the farmers, if they are made aware of the medicinal importance of these crop weeds (Bisht et al 1988).

The important medicinal plant species in Bharsar, a total of 34 medicinal plant species belonging to 32 genera and 25 families were collected and recorded for their use in various ailments. Most of the local people in the study area are poor and illiterate. On one hand, these people are out of the reach of modern medicines and on the other hand, the market prices of most available medicines are very expensive. As a result, these medicinal plants are used to cure following diseases, especially for abscess, asthma, abortion, cough, cold, smallpox, dysentery, diarrhea, diabetes, eczema, fever, itches, jaundice, menstrual disease, paralysis, piles, skin diseases, snake-bite, toothache, worm, wound and others.

The study reveals that local people still depend on a number of plants for their daily needs especially medicine. Among identified medicinal trees, most of them are commonly found near the villages surrounding, wasteland, and forest areas. Plants of scientific knowledge, which have been investigated pharmacologically and chemically, and their active principle are used in modern medicine or provide valuable leads for partial or total synthesis of new drugs (Dhar et al. 2002; Parkash et al. 2002).

Despite their significance to rural livelihoods, the abundance and diversity of understory medicinal plant species are threatened by changes in the structural attributes of the cover story in native old-growth forests as a result of degradation (Galliam 2007). Therefore, the present study adds new knowledge on ethnobotanical uses of Angiosperm plants from Bharsar and adjoining area of district Pauri Garhwal. People in this region are partially or completely dependent on forest resources for medicine, food, fuel, and fodder. A great deal of traditional knowledge of the use of various plant species is still intact with the indigenous people, and this fact is especially relevant with the mountainous areas such as the Himalayas due to less accessibility of terrain and comparatively slow rate of development (Farooque et al. 2004).

Convention on Biological Diversity states that indigenous people play a vital role in environmental management and development through their traditional practices. It requires nation to protect the traditional knowledge and customary practices related to the use of biological diversity (Glowka et al. 1997).

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