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Research Article

Assessment of Angiosperm Dicots of Astore Valley Gilgit-Baltistan, Pakistan

Ali Noor[1*], Surayya Khatoon[2], Moinuddin Ahmed[3], Abdul Razaq[1], Sher W. Khan[1], Maisoor A. Nafees[1], Fozia Naseer[2], Syed M. Nizami[4], Shehla Shinwari[1], Wali Khan[5], and Sujjad Haider[1]

[1]Department of Biological Sciences Karakoram International University Gilgit-Baltistan
[2]Department of Botany, University of Karachi
[3]Department of Botany, Federal Urdu University of Science and Technology, Karachi
[4]Integrated Mountain Area Research Center and Forestry Department, Karakoram International University Gilgit-Baltistan
[5]Department of Zoology, University of Malakand, Lower Dir, KP

Abstract: The research objective was to assess the floristic diversity of dicotyledons in Astore valley, Gilgit-Baltistan. Field visits were conducted during 2007-2018. Five hundred and fifty-eight species of Angiosperms Dicot were recorded, and they belonged to 65 families and 266 genera, Among the species were that were two first time recorded in Pakistan *viz Camelina microcarpa* Andrz.-ex DC. and Taraxacum stewartii Soest and five tentatively new species were encountered. Among the 65 families, ten had over 20 specie i.e. Asteraceae which had 47 genera and 95 species, Brassicaceae with 22 genera and 40 species, Papilionaceae with 14 genera and 30 species, Rosaceae with 13 genera and 33 species, and Boraginaceae with 31 species in 13 genera, Scrophulariaceae with 30 species, in 8 genera, Apiaceae with 27 species in 16 genera, Lamiaceae with 26 species in 13 genera, Caryophyllaceae with 25species in 11 genera and Polygonaceae with 21 species in 9 genera. There were 41 larger genera with more than 4-four species, Astragalus had 11 species followed by Nepeta with 10 species, Artemisia and Potentilla with nine each. The 558 species belong to 6 life forms. For each species, the habitat and habit of each species and their distribution status were also recorded. Habit wise 369 species were perennial herbs, 127 annual herbs, 34 shrubs, 24 trees, and 2 under shrubs. The research work will provide the baseline data for researchers regarding the angiosperm dicots of the Himalayan mountainous region of Pakistan.

Keywords: Himalayan, Preliminary Assessment, Astore Valley, Gilgit-Baltistan

1. INTRODUCTION

Astore valley is covering an area of 7222 km^2 and that lies between 43.8o-35.8o North latitude and 74.4o-75.2o longitude. The valley is consisting of four Tehsils and 8 Union Councils and more than 100 villages (Fig.1), [1]. Northern Pakistan especially Astore Valley is full of natural treasurer, particularly regarding the natural vegetation [2, 3]. The assessment of floristic diversity is essential for sustainable utilization, conservation strategies, and ecological management of natural assets of a specific region, which provides the preliminary basis for further comprehensive research [4, 5]. The listing and handling of species are easy in a short time, due to their conscience. [6]; Besides these, it helps in the correct naming and identification of taxa, initial material for estimation of biodiversity, and biogeographic research. Biodiversity includes 4 main parts e.g. genetic diversity, ecosystem diversity, diversity of species, and functional diversity or ecological process [7]. Moreover, it provides important and fundamental awareness to the public to cope with the crises of biodiversity [8]. Documentation and classification of vegetation are also needed for the conservation of biological

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*Corresponding Author: Ali Noor <alinoor_na@yahoo.com>

resources.

Many researchers and workers have played an important role to provide an inclusive inventory list of regional floras, which provides a milestone for further research. They are included [9, 10, 11, 12 , 13, 14, 15, 16, 17, 18, 19]. The erratic data regarding this region is available in [20]; and Flora of Pakistan. The study area consists of diverse topographic features, micro-climatic habitats, and Ecotonic geographic position, the project area consists of highly diverse potential of flora.

With consideration of the aforementioned facts, the present study was focused on carrying out the inventory of angiosperm dicots floral diversity of the area with detailed information e.g. status of the plant species, life-form classes, habit and habitat of the plant species with authentic identification to provide baseline data for further research and conservation strategies, of this region is available in [20]; and Flora of Pakistan. The study area consists of diverse topographic features, micro-climatic habitats, and Ecotonic geographic position, the project area consists of highly diverse potential of flora.

With consideration of the aforementioned facts, the present study was focused on carrying out the inventory of angiosperm dicots floral diversity of the area with detailed information e.g. status of the plant species, life-form classes, habit and habitat of the plant species with authentic identification to provide baseline data for further research and conservation strategies.

2. MATERIALS AND METHODS

To collect the data about the angiosperm dicots of the study area, field trips were arranged in different flowering seasons to different localities of the area from 2007 to 2018. Plant specimen has been collected with detailed information on the field observation notebook. The plant specimen was tagged with collection number, properly pressed in blotting paper, and dried, the dried specimen passed through the poisoning process then mounted on slandered herbarium sheets along with the detailed field observations notes. The vegetation was categorized into different life-form classes and the different ecological zones were also defined based on vegetation pattern, habitat, and microclimatic variations of the study area. Identification of plant specimen was made with help of the Flora of West Pakistan [21, 22, 23]; Flora of Iranica [24], Flora of China [25]. and other relevant materials.

3. RESULTS AND DISCUSSION

The vegetation of the study area is prevailed by the flora of floristically rich regions e.g. Himalayan, Central Asiatic, Sino-Japanese, and Western Irano-Turanian regions. A total of 558 Angiosperm dicots species were recorded during the study period, which is belonging to 65 families and 266 genera. The high species richness families which have more than twenty species in each were categorized i.e. with 95 species family Asteraceae were showed highest species richness in 47 genera (17%) of all species, followed by with 40 (7.168%) species in 22 genera family *Brassicaceae*, which were contributed in the second position, *Papilionaceae* were stand in 3rd position with 35 (6.272%) specie in 14 genera same as family *Rosaceae* with 33 (5.913%) species in 13 genera and *Boraginaceae* 31 (5.555%) species in 13 genera, *Scrophulariaceae* 30 (5.376%) species, in 8 genera, *Apiaceae* 27 (4.838 %) in 16 genera, *Lamiaceae* 26 (4.659%) species in 13 genera, *Caryophyllaceae* 25(4.480 %) species in 11 genera and Polygonaceae 21 (3.763 %) species in 9 genera were showed species richness respectively Fig. 2.

Forty-one genera that have more than four species in each were categorized as larger genera. With 11 species-genus Astragalus has contributed the highest number of species among the 266 genera, followed by Nepeta with ten species, Artemisia and Potentilla with 9 species in each were stand 2nd and 3rd position respectively. Two species viz Camelina microcarpa Andrz. ex DC.and Taraxacum stewartii Soest was recorded for the first time from Pakistan and five tentatively new species. The angiosperm dicots were categorized into 6 life form classes and topography was divided into different 5 ecological zones, distribution status, habit, and habitat of each plant species in the research area were also mentioned, which is reflected in table-1. All plant species names and their family names were updated according to the current classification list of the Kew Flora database.

Inhabit categories 370 species (66.308%) were perennial herbs, 127 (22.759%) were annual herbs,

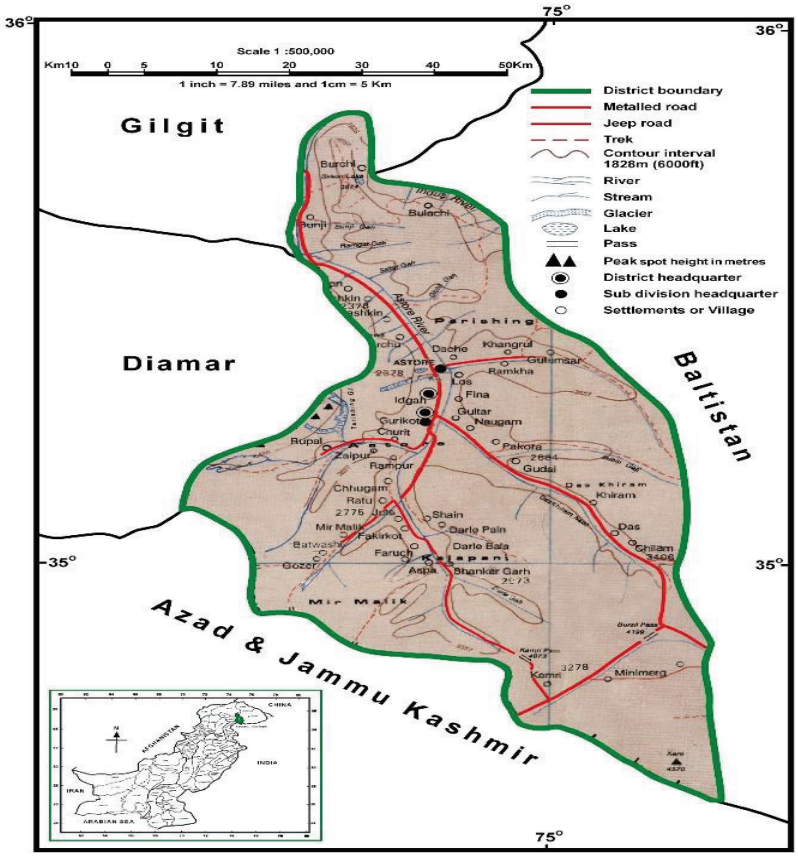

Fig. 1. Map of Astore Valley

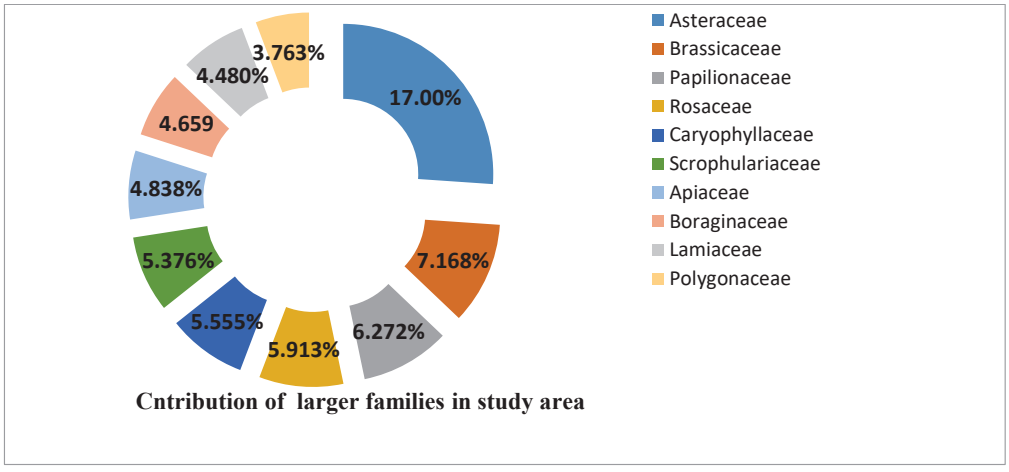

Fig. 2. Contribution in species richness of 10 larger families in Astore Valley

thirty-four species were shrubs and 24 species were trees which were distributed in the study area (Fig. 3). The species which is showing dominancy in the study area was observed Artemisia brevifolium. According to life-form classes, with the highest number 330 (58.137%) species Hemicryptophytes were stood the first position followed by with 128 (22.939%) species Therophytes was the second number in position, Chamaephytes with 45 (8.064%) species in the third number, same as 28 (5%) species were Nanophanerophytes, and 24 (4.301%) species were Phanerophytes. (Fig. 4).

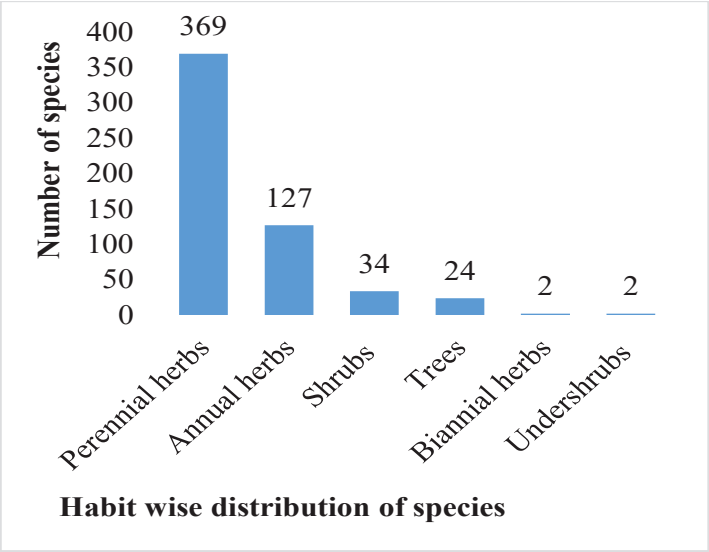

Fig. 3. Habit-wise distribution of species in the study area.

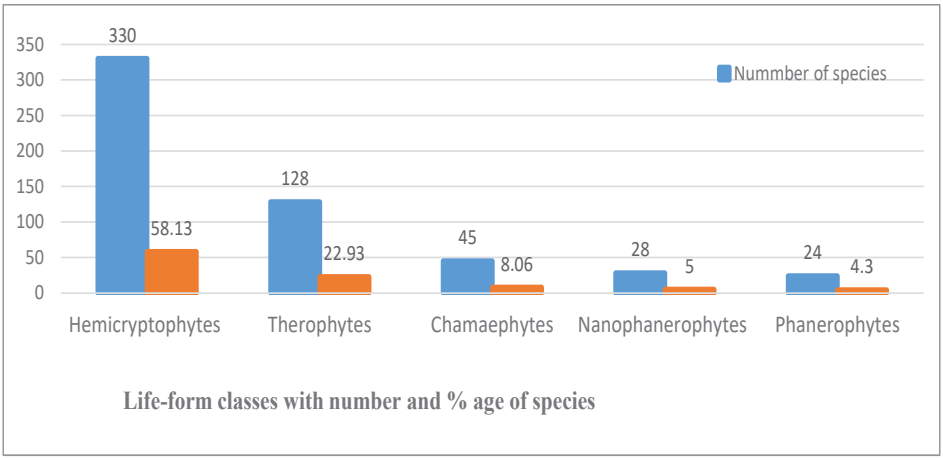

Fig. 4. Comparison of Life-Form classes with number and percentage of species in the study area

The distribution status of the species in the study area is categorized based on observation and data of field notes. According to the tabulated data, the highest number of species 386 (69.175%) were common, 98 (17.562%) species rare, 24 (4.301%) abundant, 23 (4.121%) very rare, 20 (3.584%) species were very common and 7 species are abundant respectively (Fi.g.5). Plants are the most vital gift which is granted by nature, the diversity of plants has played an important role on the planet. Awareness about the plants is based on trial and inaccuracy. So, the transfer of authentic information regarding the usage of plants for various purposes from one generation to another generation is passed by some addition or refined.

With time, wild plants were decreased or cleaned from their natural environment and replaced by desired cultivated/invasive plants on a huge scale [26].

Astore Valley is the hot spot of Himalayan vegetation [27, 28, 29]. The natural wealth particularly the flora of the valley is facing different anthropogenic and natural threats. The people of the region most dependent on plants for food, shelter, food, and other ailments [30]. The induced anthropogenic activities are included unsustainable usage of natural resources, harvesting of plants without scientific manner, lack of land management, steep slopes cultivation, shifting of cultivation

Table 1. Habit, Life-Form Classes, Habitat, and Status of Species in Study Area

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
1.	Amaranthaceae	*Amaranthus hybridus* L. subsp. *hybridus*	AH	Th.	Cultivated land	c.
2.	Amaranthaceae	*Amaranthus retroflexus* L.	AH	Tp.	Cultivated land	c.
3.	Anacardiaceae	*Pistacia khinjuk* Stocks	TR	Ph.	Mountain clefts	r.
4.	Anacardiaceae	*Pistacia chinensis* Bunge subsp. *integerrima* (J. L. Stewart ex Brandis) Rech. f.	TR	Ph.	Stony dry slope	r.
5.	Apiaceae	*Anthriscus nemorosa* (M. Bieb.) Spreng.	PH	Hp.	Alpine slope	c.
6.	Apiaceae	*Bunium persicum* (Boiss.) Fedtsch.	AH	Tp.	Cultivated land	c.
7.	Apiaceae	*Chaerophyllum villosum* Wall.ex DC.	PH	Hp.	Cultivated grass land	c.
8.	Apiaceae	*Bupleurum thomsonii* C.B. Clarke	PH	Hp.	Grassy hill slope	r.
9.	Apiaceae	*Angelica glauca* Edgew.	PH	Hp.	Grassy mountain slope	c.
10.	Apiaceae	*Bupleurum longicaule* var. *himalayense* (Kl.) C.B. Clarke	PH	Hp.	Grassy mountain slope	c.
11.	Apiaceae	*Bupleurum longicaule* Wall. ex D C.	PH	Hp.	Grassy mountain slope	c.
12.	Apiaceae	*Bupleurum nigrescens* Nasir	PH	Hp.	Grassy mountain slope	c.
13.	Apiaceae	*Conioselinum vaginatum* (Spreng.) Thall.	PH	Hp.	Grassy mountain slope	c.
14.	Apiaceae	*Heracleum candicans* Wall.ex DC.	PH	Hp.	Grassy mountain slope	c.
15.	Apiaceae	*Aegopodium alpestre* Ledeb.	PH	Hp.	Grassy mountain slope	c.
16.	Apiaceae	*Seseli libanotis* (L.) W. Koch	PH	Hp.	Grassy mountain slope	r.
17.	Apiaceae	*Ferula assa-foetida* L.	PH	Hp.	Mountain clefts	r.
18.	Apiaceae	*Ligusticum elatum* (Edgew.) C.B.Clarke	PH	Hp.	Mountain clefts	r.
19.	Apiaceae	*Bupleurum hamiltonii* N.P. Balaker.	PH	Hp.	Grassy mountain slope	c.
20.	Apiaceae	*Chaerophyllum reflexum* var. *acuminatum* (Lindl.) Hedge & Lamond	PH	Hp.	Grassy mountain slope	c.
21.	Apiaceae	*Anethum graveolens* L.	AH	Tp.	Grassy mountain slope	c.
22.	Apiaceae	*Carum carvi* L.	AH	Tp.	Grassy mountain slope	c.
23.	Apiaceae	*Bupleurum hamiltonii* N.P. Balaker.	PH	Hp.	Grassy mountain slope	c.
24.	Apiaceae	*Angelica archangelica* var. *himalaica* (Clarke) E. Nasir	PH	Hp.	Moist place	c.
25.	Apiaceae	*Bunium cylindricum* (Boiss. & Hoh.) Drade	AH	Tp.	Moist place	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
26.	Apiaceae	*Platytaenia kuramensis* Nasir	PH	Hp.	Sandy slope	r.
27.	Apiaceae	*Selinum vaginatum* (Edgew.) C. B. Clarke	PH	Hp.	Steep grassy slope	r.
28.	Apiaceae	*Ligusticum thomsonii* var. *evolutior* C. B. Clarke	PH	Hp.	Stony hill slope	r.
29.	Apiaceae	*Chaerophyllum reflexum* Aitch.	PH	Hp.	Undulate slope	c.
30.	Apiaceae	*Heracleum canescens* Lindl.	PH	Hp.	Undulate slope	c.
31.	Apiaceae	*Prangos pabularia* Lindl.	PH	Hp.	Undulate stony slope	c.
32.	Asclepiadaceae	*Vincetoxicum stocksii* Ali & S. Khatoon	PH	Cp.	Cultivated land	c.
33.	Asclepiadaceae	*Cynanchum canescens* (Willd.) K. Schum.	PH	Cp.	Stony place	c.
34.	Asteraceae	*Cicerbita* sp. nov.	PH	Hp.	Alpine meadow	r.
35.	Asteraceae	*Jurinea himalaica* R.R.Stewart	PH	Hp.	Alpine Meadow	rr.
36.	Asteraceae	*Solidago* sp. nov	PH	Hp.	Alpine slope	rr.
37.	Asteraceae	*Saussurea costus* (Falconer) Lipschitz	PH	Hp.	Cultivated land	rr.
38.	Asteraceae	*Cichorium intybus* L.	PH	Hp.	Cultivated grass land	at.
39.	Asteraceae	*Erigeron acer* L.	PH	Hp.	Cultivated grass land	at.
40.	Asteraceae	*Erigeron bellidioides* (D. Don) Benth. & Hook.	PH	Hp.	Cultivated grass land	at.
41.	Asteraceae	*Erigeron multiradiatus* (Lindl. Ex DC.) Benth. ex C. B. Clarke	PH	Hp.	Cultivated grass land	at.
42.	Asteraceae	*Lactuca dolichophylla* Kitam.	PH	Hp.	Cultivated grass land	c.
43.	Asteraceae	*Picris angustifolia* subsp. *aungustifolia* DC.	PH	Hp.	Cultivated grass land	c.
44.	Asteraceae	*Anaphalis virgata* Thomson	PH	Cp.	Dry mountain slope	c.
45.	Asteraceae	*Cirsium grififthii* Boiss.	PH	Hp.	Dry place	c.
46.	Asteraceae	*Anthemis cotula* L.	AH	Tp.	Dry plain	at.
47.	Asteraceae	*Artemisia scoparia* Waldst. & Kitam.	PH	Cp.	Dry plain	c.
48.	Asteraceae	*Lactuca dissecta* D. Don	PH	Hp.	Dry plain	c.
49.	Asteraceae	*Tanacetum artemisioides* Schultz-Bip.ex Hook. f.	PH	Cp.	Dry road side slope	c.
50.	Asteraceae	*Echinops cornigerus* DC.	PH	Hp.	Dry sandy slope	c.
51.	Asteraceae	*Pseudognaphalium affine* (D. Don) Anderb.	PH	Hp.	Dry sandy slope	r.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
52.	Asteraceae	*Seriphidium brevifolium* (Wall. ex DC.) Ling & Y. R. Ling	PH	Cp.	Dry slope	at.
53.	Asteraceae	*Chondrilla yossii* Kitam.	PH	Cp.	Dry slope	c.
54.	Asteraceae	*Scorzonera polyclada* Rech.f. & Koie	PH	Hp.	Dry slope	c.
55.	Asteraceae	*Sonchus asper* (L.) Hill	PH	Hp.	Dry slope	c.
56.	Asteraceae	*Tricholepis furcata* DC.	PH	Cp.	Dry slope	r.
57.	Asteraceae	*Saussurea candicans* C.B. Clarke	PH	Hp.	Dry slope	r.
58.	Asteraceae	*Cousinia thomsonii* C. B. Clarke	PH	Hp.	Dry slope	rr.
59.	Asteraceae	*Scariola orientalis* (Boiss.) Sajok	PH	Hp.	Dry solpe	r.
60.	Asteraceae	*Arctium lappa* L.	AH	Tp.	Dry undulate slope	r.
61.	Asteraceae	*Heteropappus altaicus* (Willd.) Novopokr.	PH	Hp.	Mountain foot slop	at.
62.	Asteraceae	*Anaphalis nepalensis* var. *monocephala* Hand.-Mazz.	PH	Cp.	Mountain foot slop	c.
63.	Asteraceae	*Anaphalis nepalensis* var. *nepalensis* (C.B. Clarke) Ridley	PH	Cp.	Mountain foot slop	c.
64.	Asteraceae	*Crepis multicaulis* Ledeb.	PH	Hp.	Mountain foot slop	c.
65.	Asteraceae	*Hieracium vulgatum* Fr.	PH	Hp.	Mountain foot slop	c.
66.	Asteraceae	*Conyza bonariensis* (L.) Cronquist	AH	Tp.	Mountain foot slop	c.
67.	Asteraceae	*Taraxacum stewartii* Soes	PH	Hp.	Mountain foot slop	r.
68.	Asteraceae	*Artemisia gmelinii* Weber	PH	Cp.	Mountain foot slop	cc.
69.	Asteraceae	*Saussurea chenopodifolia* Klatt	PH	Hp.	Gentle slope	c.
70.	Asteraceae	*Chondrilla setulosa* C B. Clarke ex Hook. f.	PH	Cp.	Gentle slope	c.
71.	Asteraceae	*Taraxacum offcinale* F.H.Wigg.	PH	Hp.	Grass land	at.
72.	Asteraceae	*Carduus edelbergii* Reach. f.	PH	Hp.	Grassy mountain slope	c.
73.	Asteraceae	*Saussurea ceratocarpa* Decne.	AH	Tp.	Grassy mountain slope	c.
74.	Asteraceae	*Hippolytia dolichophylla* (Kitam.) K. Bremer & Humphries	PH	Hp.	Grassy mountain slope	r.
75.	Asteraceae	*Artemisia japonica* Thunb.	PH	Hp.	Plain grassy field	c.
76.	Asteraceae	*Erigeron uniflorus* L.	PH	Hp.	Grassy slope	at.
77.	Asteraceae	*Pilosiella echinoids* (Lumn.) F. W. Schultz & Sch. Bip.	PH	Hp.	Grassy slope	c.
78.	Asteraceae	*Saussurea candolleana* (Wall.) C.B.Clarke	PH	Hp.	Grassy slope	c.

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79.	Asteraceae	*Senecio tibeticus* Hook. f.	PH	Hp.	Grassy slope	c.
80.	Asteraceae	*Sonchus oleraceus* L.	PH	Hp.	Grassy slope	c.
81.	Asteraceae	*Lactuca* sp. nov.	PH	Hp.	Grassy slope	r.
82.	Asteraceae	*Ligularia jacquemontiana* (Decne.) M. A. Rau	PH	Hp.	Grassy slope	r.
83.	Asteraceae	*Ligularia thomsonii* (C.B.Clarke) Pojark	PH	Hp.	Grassy slope	r.
84.	Asteraceae	*Leontopodium leontopodinum* Hand-Mazz.	PH	Hp.	Grassy slope	cc.
85.	Asteraceae	*Spathipappus griffithii* (C.B. Clarke) Tzvetv	PH	Cp.	Mountain clefts	c.
86.	Asteraceae	*Inula obtusifolia* Kern	PH	Hp.	Mountain clefts	r.
87.	Asteraceae	*Psychrogeton andryaloides* (DC.)Novopokr.ex Krasch.	PH	Hp.	Mountain clefts	r.
88.	Asteraceae	*Tanacetum* sp. nov.	PH	Cp.	Mountain clefts	rr.
89.	Asteraceae	*Artemisia roxburghiana* Wall. ex Besser	PH	Cp.	Mountain slope	c.
90.	Asteraceae	*Artemisia salsoloides* Willd.	PH	Cp.	Mountain slope	c.
91.	Asteraceae	*Gnaphalium stewartii* C. B. Clarke ex Hook. f.	AH	Hp.	Mountain slope	c.
92.	Asteraceae	*Artemisia capillaris* Thunb.	PH	Hp.	Mountain slope	c.
93.	Asteraceae	*Cicerbita decipiens* (Hook. f. & Thomson ex C.B Clarke) Beauverd	PH	Hp.	Mountain slope	c.
94.	Asteraceae	*Crepis flexuosa* (Ledeb.) Benth. ex C.B. Clarke	PH	Hp.	Mountain slope	c.
95.	Asteraceae	*Lactuca serriola* L.	PH	Hp.	Mountain slope	c.
96.	Asteraceae	*Leontopodium brachyactis* Gandoger	PH	Hp.	Mountain slope	c.
97.	Asteraceae	*Leontopodium himalayanum* DC.	PH	Hp.	Mountain slope	c.
98.	Asteraceae	*Leontopodium jacotianum* Beauverd	PH	Hp.	Mountain slope	c.
99.	Asteraceae	*Leontopodium linearifolium* Hand.- Mazz.	PH	Hp.	Mountain slope	c.
100.	Asteraceae	*Mulgedium lessertianum* (Wall. ex C.B.Clarke) Wall.ex DC.	PH	Hp.	Mountain slope	c.
101.	Asteraceae	*Saussurea albescens* (DC.) Sch.	PH	Hp.	Mountain slope	c.
102.	Asteraceae	*Scorzonera divaricata* Turcz	PH	Hp.	Mountain slope	c.
103.	Asteraceae	*Scorzonera virgata* DC.	PH	Hp.	Mountain slope	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
104.	Asteraceae	*Tanacetum falconeri* Hook. f.	PH	Hp.	Mountain slope	c.
105.	Asteraceae	*Brachyactis pubescens* Aitch. & Clarke	AH	Tp.	Mountain slope	c.
106.	Asteraceae	*Erigeron umbrosus* (Kar. & Kir.) Boiss.	AH	Tp.	Mountain slope	c.
107.	Asteraceae	*Saussurea ceratocarpa* var. *depressa* (C. B. Clarke ex Hook. f.) Lipschitz	AH	Tp.	Mountain slope	c.
108.	Asteraceae	*Solidago virgaurea* L.	PH	Hp.	Mountain slope	f.
109.	Asteraceae	*Tragopogon gracilis* D.Don	AH	Tp.	Mountain slope	r.
110.	Asteraceae	*Aster falconeri* (C. B. Clarke) Hutch.	PH	Hp.	Mountain slope	cc.
111.	Asteraceae	*Erigeron alpinus* L.	PH	Hp.	Mountain slope	cc.
112.	Asteraceae	*Anaphalis chitralensis* Qaiser & Rubina Abid	PH	Cp.	Mountain slope	rr.
113.	Asteraceae	*Artemisia amygdalina* Decne.	PH	Cp.	Mountain slope	rr.
114.	Asteraceae	*Cirsium echinus* (M. Bieb.) Hand.-Mazz.	PH	Hp.	Mountain slope	c.
115.	Asteraceae	*Waldheimia glabra* (Decne.) Regel	PH	Hp.	Hill top	r.
116.	Asteraceae	*Xanthium sibiricum* Patrin ex Widder	AH	Tp.	Mudy place	c.
117.	Asteraceae	*Senecio glaucus* L.	PH	Hp.	Road side dry slope	c.
118.	Asteraceae	*Inula clarkei* (Hook. f.) R. R. Stewart	PH	Hp.	Road side dry slope	rr.
119.	Asteraceae	*Filago arvensis* L.	AH	Tp.	Sandy plain	at.
120.	Asteraceae	*Conyza canadensis* L. Cronquist	AH	Tp.	Sandy plain	c.
121.	Asteraceae	*Galinsoga parviflora* Cav.	AH	Tp.	Steep slope	f.
122.	Asteraceae	*Artemisia desertorum* Spreng.	PH	Cp.	Stony dry slope	c.
123.	Asteraceae	*Senecio kraschenninnikovii.* Schischkin	PH	Hp.	Stony slope	c.
124.	Asteraceae	*Tragopogon dubius* Scop.	AH	Tp.	Undulate cultivated slope	c.
125.	Asteraceae	*Achillea millefolium* L.	PH	Hp.	Undulate slope	at.
126.	Asteraceae	*Inula rhizocephala* Schrenk	PH	Hp.	Undulate slope	c.
127.	Asteraceae	*Artemisia sieversiana* Ehrh.	AH	Tp.	Undulate slope	c.
128.	Asteraceae	*Brachyactis robusta* Benth.	AH	Tp.	Undulate slope	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
129.	Balsaminaceae	*Impatiens thomsonii* Hook.f.	AH	Tp.	Along the road side shady place	c.
130.	Balsaminaceae	*Impatiens brachycentra* Kar.& Kir	AH	Tp.	Moist place	c.
131.	Balsaminaceae	*Impatiens niamniamensis* Gilg	AH	Tp.	moist place	c.
132.	Balsaminaceae	*Impatiens sulcata* Wall.	AH	Tp.	Shady place	c.
133.	Berberidaceae	*Berberis lycium* Royle	SH	NP.	Cultivated land	c.
134.	Berberidaceae	*Berberis brandisiana* Ahrendt	SH	NP.	Mountain clefts	r.
135.	Berberidaceae	*Berberis glaucocarpa* Stapf	SH	NP.	Slope of mountain	r.
136.	Berberidaceae	*Berberis orthobotrys* Bien. ex Aitch.	SH	NP.	Stony moist place	r.
137.	Berberidaceae	*Berberis stewartiana* Jafri	SH	NP.	Stony moist place	rr.
138.	Betulaceae	*Betula utilis* D.Don	TR	Ph.	Hilly steep slope	c.
139.	Boraginaceae	*Arnebia benthamii* (Wall. ex G. Don) I. M. Johnston	PH	Hp.	Alpine slope	r.
140.	Boraginaceae	*Arnebia euchroma* (Royle) I. M. Johnston	PH	Hp.	Cultivated land	c.
141.	Boraginaceae	*Onosma setosa* var *dichroantha* (Boiss.) Boiss.	PH	Hp.	Dry mountain slope	c.
142.	Boraginaceae	*Lappula sinaica* (DC.) Asch.ex Schweinf.	AH	Tp.	Dry place	c.
143.	Boraginaceae	*Heliotropium dasycarpum* var. *gymnostomum* (Hemsl.) Kazmi	PH	Cp.	Dry plain	c.
144.	Boraginaceae	*Anchusa arvensis* subsp. *orientalis* (L.) Nordth	PH	Hp.	Dry plain	c.
145.	Boraginaceae	*Arnebia hispidissima* (Lehm.) A. DC.	PH	Hp.	Dry plain	c.
146.	Boraginaceae	*Arnebia* sp. nov.	AH	Tp.	Dry slope	c.
147.	Boraginaceae	*Lappula consanguinea* (Fisch & Mey) Gurke	AH	Tp.	Gentle slope	c.
148.	Boraginaceae	*Lindelofia longiflora* var. *falconeri* (C. B. Clarke) Brand	PH	Cp.	Mountain slope	c.
149.	Boraginaceae	*Anchusa arvensis* (L.) M. Bieb	PH	Hp.	Mountain slope	c.
150.	Boraginaceae	*Cynoglossum lanceolatum* Forssk.	PH	Hp.	Mountain slope	c.
151.	Boraginaceae	*Hackelia uncinata* (Benth.) Fischer	PH	Hp.	Mountain slope	c.
152.	Boraginaceae	*Myosotis alpestris* F.W.Schmidt.	PH	Hp.	Mountain slope	c.
153.	Boraginaceae	*Myosotis arvensis* (L.) Hill.	PH	Hp.	Mountain slope	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
154.	Boraginaceae	*Pseudomertensia echioides* (Benth.) Riedl.	PH	Hp.	Mountain slope	c.
155.	Boraginaceae	*Pseudomertensia moltkioides* var. *tanneri* (C. B. Clarke) R. R. Stewert & Kazmi	PH	Hp.	Mountain slope	c.
156.	Boraginaceae	*Lappula barbata* (M. Bieb.) Gurke	AH	Tp.	Mountain slope	c.
157.	Boraginaceae	*Lappula heterantha* (Ledeb.) Gurke	AH	Tp.	Mountain slope	c.
158.	Boraginaceae	*Rochelia bungei* Trautv.	AH	Tp.	Mountain slope	c.
159.	Boraginaceae	*Cynoglossum wallichi var. glochidiatum* (Wall.ex Benth.) Kazmi	BH	Tp.	Mountain slope	c.
160.	Boraginaceae	*Rochelia leiocarpa* Ledeb.	AH	Tp.	Sandy place	c.
161.	Boraginaceae	*Asperugo procumbens* L.	AH	Tp.	Sandy slope	c.
162.	Boraginaceae	*Nonea edgeworthii* DC.	AH	Tp.	Sandy slope	r.
163.	Boraginaceae	*Arnebia guttata* Bunge	PH	Hp.	Undulate slope	c.
164.	Boraginaceae	*Lindelofia macrostyla* (Bunge) Popov	PH	Hp.	Undulate slope	c.
165.	Boraginaceae	*Onosma hispida* Wall. ex G.Don	PH	Hp.	Undulate slope	c.
166.	Boraginaceae	*Pseudomertensia trollii* var. *edelbergii* (Rech.f. & Riedl) Kazmi	PH	Hp.	Undulate slope	c.
167.	Boraginaceae	*Rochelia disperma* (L. f.) C. Koch	AH	Tp.	Undulate slope	c.
168.	Boraginaceae	*Rochelia stylaris* Boiss.	AH	Tp.	Undulate slope	c.
169.	Boraginaceae	*Pseudomertensia moltkioides* (Royle ex Benth.) Kazmi	PH	Hp.	Undulate slope	cc.
170.	Brassicaceae	*Capsella bursa-pastoris* (L.) Medik.	AH	Tp.	Cultivated land	at.
171.	Brassicaceae	*Arabis nova* Vill.	AH	Tp.	Cultivated land	c.
172.	Brassicaceae	*Crucihimalaya mollissima* (C. A. Mey.) Al-Shehbaz, O'Kone & R.A.Price	AH	Tp.	Cultivated land	c.
173.	Brassicaceae	*Sisymbrium altissimum* L.	AH	Tp.	Cultivated land	c.
174.	Brassicaceae	*Tauscheria lasiocarpa* Fisch.ex DC.	AH	Tp.	Cultivated land	c.
175.	Brassicaceae	*Thlaspi arvense* L.	AH	Tp.	Cultivated land	c.
176.	Brassicaceae	*Turritis glabra* L.	AH	Tp.	Cultivated land	r.
177.	Brassicaceae	*Malcolmia intermedia* C. A. Mey.	AH	Tp.	Dry place	at.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
178.	Brassicaceae	*Malcolmia africana* (L.) R. Br.	AH	Tp.	Dry place	c.
179.	Brassicaceae	*Malcolmia africana* var. *trichocarpa* (Boiss. & Buhse) Boiss.	AH	Tp.	Dry plain	c.
180.	Brassicaceae	*Olimarabidopsis pumila* (Celak.) Al-Shehbaz, O'Kone & R.A.Price	AH	Tp.	Dry plain	c.
181.	Brassicaceae	*Alyssum desertorum* Stapf	AH	Tp.	Dry sandy slope	c.
182.	Brassicaceae	*Conringia planisiliqua* Fisch. & Mey.	AH	Tp.	Dry slope	c.
183.	Brassicaceae	*Sisymbrium brassiciforme* C. A. Mey.	PH	Hp.	Mountain foot slop	c.
184.	Brassicaceae	*Asperuginoides axillaris* (Boiss. & Hohen.) Rouschert	AH	Tp.	Mountain foot slop	c.
185.	Brassicaceae	*Arabis saxicola* Edgew	PH	Hp.	Grassy mountain slope	c.
186.	Brassicaceae	*Nasturtium microphyllum* Boenn.	PH	Hp.	Grassy mountain slope	c.
187.	Brassicaceae	*Erysimum robustum* D.Don	AH	Tp.	Grassy mountain slope	c.
188.	Brassicaceae	*Barbarea intermedia* Boreau	PH	Tp.	Plain grassy field	c.
189.	Brassicaceae	*Barbarea vulgaris* R. Br.	PH	Hp.	Slope of grassy land	c.
190.	Brassicaceae	*Matthiola flavida* Boiss.	PH	Hp.	Slope of grassy land	c.
191.	Brassicaceae	*Camelina microcarpa* Andrze.ex DC.	AH	Tp.	Mountain clefts	rr.
192.	Brassicaceae	*Arabis pterosperma* Edgew.	PH	Hp.	Mountain slope	c.
193.	Brassicaceae	*Chorispora macropoda* Trautv.	PH	Hp.	Mountain slope	c.
194.	Brassicaceae	*Chorispora sabulosa* Cambess	PH	Hp.	Mountain slope	c.
195.	Brassicaceae	*Crucihimalaya wallichii* (Hook.f. & Thomson) Al-Shehbaz, O'Kone & R.A.Price	PH	Hp.	Mountain slope	c.
196.	Brassicaceae	*Dendroarabis fruticulosa* (C. A. Mey.) D.A.German & Al-Shebaz	PH	Hp.	Mountain slope	c.
197.	Brassicaceae	*Thlaspi septigerum* Jafri	PH	Hp.	Mountain slope	c.
198.	Brassicaceae	*Draba olgae* Regel & Schmalh.	AH	Tp.	Mountain slope	c.
199.	Brassicaceae	*Draba stenocarpa* Hook. f. & Thomson	AH	Tp.	Mountain slope	c.
200.	Brassicaceae	*Descurainia suphia* (L.) Webb ex Prantl.	AH	Tp.	Marshy place	c.
201.	Brassicaceae	*Crucihimalaya himalaica* (Edgew.) Al-Shehbaz, O'Kone & R.A.Price	AH	Tp.	Marshy place	c.
202.	Brassicaceae	*Nasturtium officinale* R. Br.	AH	Tp.	moist slope	c.
203.	Brassicaceae	*Malcolmia africana* var. *africana*	AH	Tp.	Plain bazar area	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
204.	Brassicaceae	*Erysimum schlagintweitianum* O.E. Schulz	AH	Tp.	River bank	c.
205.	Brassicaceae	*Barbarea plantaginea* DC.	PH	Hp.	Undulate slope	c.
206.	Brassicaceae	**Arabidopsis russelliana* Jafri	AH	Tp.	Undulate slope	c.
207.	Brassicaceae	*Arabidopsis thaliana* (L.) Heynh	AH	Tp.	Undulate slope	c.
208.	Brassicaceae	*Sisymbrium heteromallum* C. A. Mey.	AH	Tp.	Undulate slope	c.
209.	Brassicaceae	*Sisymbrium loeselii* L.	AH	Tp.	Undulate slope	r.
210.	Campanulaceae	*Codonopsis ovata* Benth.	PH	Hp.	Alpine slope	r.
211.	Campanulaceae	*Campanula pallida* Wall.	PH	Hp.	Dry sandy slope	r.
212.	Campanulaceae	*Campanula leucantha* Gilli	PH	Hp.	Mountain foot slop	c.
213.	Campanulaceae	*Campanula cashmeriana* Royle	PH	Hp.	Slope of mountain	r.
214.	Campanulaceae	*Codonopsis clematidea* (Schrenk) C. B. Clarke	PH	Hp.	Moist place	r.
215.	Cannabaceae	*Cannabis sativa* L.	AH	Tp.	Cultivated grass land	c.
216.	Capparidaceae	*Capparis spinosa* L.	SH	Cp.	Dry slope	c.
217.	Caprifoliaceae	*Lonicera asperifolia* Hook. f. & Thomson	SH	Cp.	Mountain slope	c.
218.	Caprifoliaceae	*Lonicera obovata* Royle ex Hook.f. & Thoms.	SH	Cp.	Mountain slope	c.
219.	Caprifoliaceae	*Lonicera microphylla* Willd.ex Schult.	SH	NP.	Mountain slope	c.
220.	Caprifoliaceae	*Lonicera purpurascens* (Decone.) Walp.	SH	NP.	Mountain slope	c.
221.	Caprifoliaceae	*Lonicera quinquelocularis* Hardwicke	SH	NP.	Undulate slope	c.
222.	Caryophyllaceae	*Dianthus crinitus* Sm.	PH	Hp.	Along the road dry place	r.
223.	Caryophyllaceae	*Dianthus falconeri* Edgew. & Hook. f.	PH	Hp.	Along the road dry place	rr.
224.	Caryophyllaceae	*Cerastium cerastoides* (L.) Britton	PH	Hp.	Alpine slope	r.
225.	Caryophyllaceae	*Stellaria monosperma* Bush.-Ham. ex D. Don	PH	Hp.	Alpine slope	r.
226.	Caryophyllaceae	*Lepyrodiclis holosteoides (*C. A. Mey.) Fenzl ex Fisch & C. A. Mey.	AH	Tp.	Cultivated land	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
227.	Caryophyllaceae	*Silene vulgaris* (Moench) Garcke	PH	Hp.	Cultivated grass land	at.
228.	Caryophyllaceae	*Dianthus anatolicus* Boiss.	PH	Hp.	Dry slope	c.
229.	Caryophyllaceae	*Arenaria serpyllifolia* L.	AH	Tp.	Dry slope	r.
230.	Caryophyllaceae	*Spergularia diandra* (Guss.) Heldr.	PH	Hp.	Mountain foot slop	c.
231.	Caryophyllaceae	*Tytthostemma alsinoides* (Boiss. & Buhse) Nevski	AH	Tp.	Mountain foot slop	c.
232.	Caryophyllaceae	*Gypsophila cerastoides* D. Don	AH	Tp.	Gentle slope	c.
233.	Caryophyllaceae	*Cerastium dichotomum* L.	AH	Tp.	Grass land	c.
234.	Caryophyllaceae	*Silene gonosperma* subsp. *himalayensis* (Rohrb.) Bocquet	PH	Hp.	Grassy mountain slope	c.
235.	Caryophyllaceae	*Silene indica* var. *cashmeriana* (Majumdar) Y. Nasir	PH	Hp.	Grassy mountain slope	c.
236.	Caryophyllaceae	*Cerastium davuricum* Fisch. ex Spreng	PH	Hp.	Mountain slope	c.
237.	Caryophyllaceae	*Arenaria orbiculata* Royle ex Edgew. & Hook. f.	PH	Hp.	Mountain slope	c.
238.	Caryophyllaceae	*Sagina saginoides* (L.) H. Karst.	PH	Hp.	Mountain slope	c.
239.	Caryophyllaceae	*Silene kunawarensis* Royle	PH	Hp.	Mountain slope	c.
240.	Caryophyllaceae	*Silene moorcroftiana* Wall.ex Benth.	PH	Hp.	Mountain slope	c.
241.	Caryophyllaceae	*Cerastium pusillum* Ser.	AH	Tp.	Mountain slope	c.
242.	Caryophyllaceae	*Silene conoidea* L.	AH	Tp.	Moist place	r.
243.	Caryophyllaceae	*Stellaria montioides* (Edgew. & Hook. f.) Ghaz.	PH	Hp.	Sunny slope	r.
244.	Caryophyllaceae	*Minuartia kashmirica* (Edgew. Hook. f.) Mattf.	PH	Hp.	Undulate slope	c.
245.	Caryophyllaceae	*Silene graminifolia* Oth.	PH	Hp.	Undulate slope	c.
246.	Caryophyllaceae	*Cerastium glomeratum* Thuill.	AH	Tp.	Undulate slope	c.
247.	Celastraceae	*Euonymus fimbriatus* Wall.	TR	Ph.	Mountain foot slop	r.
248.	Chenopodiaceae	*Chenopodium album* L.	AH	Tp.	Cultivated land	at.
249.	Chenopodiaceae	*Bassia scoparia* (L.) A.J. Scott	PH	Cp.	Cultivated land	r.
250.	Chenopodiaceae	*Dysphania botrys* (L.) Mosyukin & Clemants	AH	Tp.	Cultivated land	cc.
251.	Chenopodiaceae	*Bassia prostrata* (L.) Beck	US	Cp.	Dry place	c.
252.	Chenopodiaceae	*Ceratocarpus arenarius* L.	PH	Cp.	Dry plain	r.
253.	Chenopodiaceae	*Chenopodium badachschanicum* Tzvelev	AH	Tp.	Dry plain	r.

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254.	Chenopodiaceae	*Bassia hyssopifolia* (Pall.) Kuntze	PH	Cp.	Dry slope	c.
255.	Chenopodiaceae	*Krascheninnikovia ceratoides* (L.) Guldenst.	PH	Cp.	Dry slope	c.
256.	Chenopodiaceae	*Salsola kali* subsp. *tragus* (L.) Celak.	AH	Tp.	Dry slope	c.
257.	Chenopodiaceae	*Halogeton glomeratus* (M. Bieb.) Ledeb.	AH	Tp.	Sandy dry place	c.
258.	Chenopodiaceae	*Atriplex schugnanica* Iljin	PH	Hp.	Sandy slope	r.
259.	Chenopodiaceae	*Chenopodium foliosum* Asch.	AH	Tp.	Undulate slope	c.
260.	Convolvulaceae	*Convolvulus arvensis* L.	PH	Hp.	Dry place	c.
261.	Corylaceae	*Corylus jacquemontii* Decne.	TR	Ph.	Gentle slope	r.
262.	Crassulaceae	*Rhodiola heterodonta* (Hook. f. & Thom.) Boriss.	PH	Hp.	Mountain foot slop	c.
263.	Crassulaceae	*Rosularia alpestris* (Kar. & Kir.) Boriss.	PH	Hp.	Mountain foot slop	c.
264.	Crassulaceae	*Sedum ewersii* Ledeb.	PH	Hp.	Grassy mountain slope	c.
265.	Crassulaceae	*Rhodiola fastigiata* (Hook. f. & Thom.) S. H. Fu	PH	Hp.	Grassy steep slope	c.
266.	Crassulaceae	*Pseudosedum lievenii* (Ledeb.) A. Berger	PH	Hp.	Mountain clefts	c.
267.	Crassulaceae	*Rhodiola bupleuroides* (Wall. ex Hook. F. & Thom.) S. H. Fu	PH	Hp.	Slope of mountain	c.
268.	Crassulaceae	*Sedum quadrifidum* Pall.	PH	Hp.	Slope of mountain	c.
269.	Crassulaceae	*Hylotelephium pakistanicum* (G.R. Sarwar) G. R. Sarwar	PH	Hp.	Undulate slope	c.
270.	Cuscutaceae	*Cuscuta europaea* L.	AH	Tp.	Cultivated grass land	c.
271.	Cuscutaceae	*Cuscuta australis* R. Br.	AH	Tp.	Slope of grassy land	c.
272.	Cuscutaceae	*Cuscuta monogyna* Vahl	AH	Tp.	Mountain clefts	r.
273.	Datiscaceae	*Datisca cannabina* L.	PH	Hp.	Moist slope	r.
274.	Dipsacaceae	*Scabiosa speciosa* Royle	PH	Hp.	Gentle slope	c.
275.	Dipsacaceae	*Dipsacus inermis* Wall. var. inermis	PH	Hp.	Grassy mountain slope	c.
276.	Elaeagnaceae	*Elaeagnus angustifolia* var. *angustifolia*	TR	Ph.	Road side dry plain	c.
277.	Elaeagnaceae	*Hippophae rhamnoides* subsp. *turkestanica* Rousi	TR	Ph.	Sandy moist place	c.
278.	Ericaceae	*Rhododendron hypenthum* Balf. F.	SH	Cp.	Slope of mountain	r.

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279.	Euphorbiaceae	*Andrachne aspera* Spreng.	PH	Cp.	Dry plain	r.
280.	Euphorbiaceae	*Euphorbia osyridea* Boiss.	PH	Cp.	Dry sandy place	c.
281.	Euphorbiaceae	*Euphorbia jacquemontii* Boiss.	PH	Hp.	Slope of mountain	c.
282.	Euphorbiaceae	*Euphorbia wallichii* Hook. f.	PH	Hp.	Slope of mountain	c.
283.	Euphorbiaceae	*Euphorbia thyrsoidea* Boiss.	PH	Hp.	Sandy slope	rr.
284.	Euphorbiaceae	*Euphorbia thomsoniana* Boiss.	PH	Hp.	Stony slope	r.
285.	Fumariaceae	*Fumaria indica* (Hausskn.) Pugsley	AH	Tp.	Cultivated land	c.
286.	Fumariaceae	*Corydalis thyrsiflora* Prain	PH	Hp.	Gentle slope	c.
287.	Fumariaceae	*Corydalis govaniana* Wall.	PH	Hp.	Moist place	c.
288.	Gentianaceae	*Gentiana tianschanica* Rupr.ex Kusn.	PH	Hp.	Alpine slope	c.
289.	Gentianaceae	*Gentianella moorcorftiana* (Wall.ex Griseb.) Airy Shaw	PH	Hp.	Alpine slope	c.
290.	Gentianaceae	*Swertia speciosa* G.Don	PH	Hp.	Alpine slope	c.
291.	Gentianaceae	*Gentiana huxleyi* Kusn.	AH	Tp.	Alpine slope	c.
292.	Gentianaceae	*Swertia cordata* (Wall. ex G.Don) C. B. Clarke	AH	Tp.	Cultivated grass land	c.
293.	Gentianaceae	*Lomatogonium carinthiacum* (Walf.) Rchb.	PH	Hp.	Slope of grassy land	c.
294.	Gentianaceae	L*omatogonium caeruleum* (Royle) H. Smith. ex B. L. Burtt	PH	Hp.	Mountain slope	c.
295.	Gentianaceae	*Gentiana alii* (Omer & Qaiser) T.N.Ho.	AH	Tp.	Mountain slope	c.
296.	Gentianaceae	*Jaeschkea oligosperma* Knobl.	AH	Tp.	Mountain slope	c.
297.	Gentianaceae	*Lomatogonium spathulatum* (A. Kern.) Fernald	AH	Tp.	Mountain slope	c.
298.	Gentianaceae	*Swertia thomsonii* C. B.Clarke	AH	Tp.	Mountain slope	c.
299.	Gentianaceae	*Gentianopsis paludosa* (Hook. f.) Ma	AH	Tp.	Moist place	r.
300.	Gentianaceae	*Comastoma borealis* (Bunge) T. N. HO	AH	Tp.	Undulate slope	r.
301.	Geraniaceae	*Geranium collinum* Steph.ex Willd.	PH	Hp.	Mountain slope	c.
302.	Geraniaceae	*Geranium himalayense* Klotzsch	PH	Hp.	Mountain slope	c.

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303.	Geraniaceae	*Geranium kotschyi* subsp. *charlesii* (Aitch. & Hemsl.) P.H.Davis	PH	Hp.	Mountain slope	c.
304.	Geraniaceae	*Geranium pratense* subsp. *stewartianum* Y. J.Nasir	PH	Hp.	Mountain slope	c.
305.	Geraniaceae	*Geranium tuberaria* Camb.	PH	Hp.	Mountain slope	c.
306.	Geraniaceae	*Geranium pratense* subsp. *stewartianum* var. schmidii Y. Nasir	PH	Hp.	Undulate slope	c.
307.	Geraniaceae	*Geranium swatense* schonbeck – Temesy	PH	Hp.	Undulate slope	c.
308.	Grossulariaceae	*Ribes nigrum* L.	SH	NP.	Slope of mountain	c.
309.	Grossulariaceae	*Ribes orientale* Desf.	SH	NP.	Slope of mountain	c.
310.	Grossulariaceae	*Ribes alpestre* Wall.ex Decne.	SH	NP.	Stony hill slope	r.
311.	Hypericaceae	*Hypericum perforatum* L.	PH	Hp.	Gentle slope	r.
312.	Lamiaceae	*Nepeta leucolaena* Benth.ex Hook. f.	PH	Hp.	Cultivated land	c.
313.	Lamiaceae	*Stachys melissifolia* Benth.	AH	Tp.	Dry slope	c.
314.	Lamiaceae	*Thymus linearis* Benth.	PH	Hp.	Mountain foot slop	at.
315.	Lamiaceae	*Dracocephalum nutans* L.	PH	Hp.	Mountain foot slop	c.
316.	Lamiaceae	*Nepeta podostachys* subsp. *paulsenii* (Briq.) A.L. Budantzev	PH	Hp.	Mountain foot slop	c.
317.	Lamiaceae	*Phlomis bracteosa* Royle ex Benth.	PH	Hp.	Mountain foot slop	c.
318.	Lamiaceae	*Prunella vulgaris* L.	PH	Hp.	Mountain foot slop	c.
319.	Lamiaceae	*Lamium album* L.	PH	Hp.	Mountain foot slop	r.
320.	Lamiaceae	*Dracocephalum bipinnatum* Rupr.	PH	Hp.	Gentle slope	c.
321.	Lamiaceae	*Nepeta laevigata* (D. Don) Hand.-Mazz.	PH	Hp.	Gentle slope	c.
322.	Lamiaceae	*Scutellaria edelbergii* Rech. f.	PH	Hp.	Gentle slope	c.
323.	Lamiaceae	*Dracocephalum moldavica* L.	PH	Hp.	Grass land	c.
324.	Lamiaceae	*Nepeta clarkei* Hook .f.	PH	Hp.	Grassy slope	c.
325.	Lamiaceae	*Nepeta linearis* Royle ex Benth.	PH	Hp.	Grassy slope	c.

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326.	Lamiaceae	*Nepeta nervosa* Royle ex Benth.	PH	Hp.	Grassy slope	cc.
327.	Lamiaceae	*Mentha longifolia* (L.) L.	PH	Hp.	Mountain slope	c.
328.	Lamiaceae	*Mentha royleana* Wall.ex Benth.	PH	Hp.	Mountain slope	c.
329.	Lamiaceae	*Clinopodium umbrosum* (M. Bieb.) Kuntz	AH	Tp.	Mountain slope	c.
330.	Lamiaceae	*Elsholtzia densa* Benth.	AH	Tp.	Mountain slope	c.
331.	Lamiaceae	*Stachys tibetica* Vatke	AH	Tp.	Mountain slope	r.
332.	Lamiaceae	*Nepeta connata* Royle ex Benth.	PH	Hp.	Open dry slope	c.
333.	Lamiaceae	*Nepeta adenophyta* Hedge	PH	Hp.	Stony dry slope	rr.
334.	Lamiaceae	*Nepeta discolor* Royle ex Benth.	PH	Hp.	Undulate slope	at.
335.	Lamiaceae	*Leonurus cardiaca* L.	PH	Hp.	Undulate slope	c.
336.	Lamiaceae	*Nepeta erecta* (Royle ex Benth.) Benth.	PH	Hp.	Undulate slope	c.
337.	Lamiaceae	*Salvia nubicola* Wall. ex Sweet	PH	Hp.	Undulate slope	c.
338.	Malvaceae	*Malva verticillata* L.	AH	Tp.	Grass land	c.
339.	Malvaceae	*Malva neglecta* Waller	PH	Hp.	Road side slope	cc.
340.	Malvaceae	*Alcea rosea* L.	AH	Tp.	Undulate slope	r.
341.	Moraceae	*Ficus palmata* Forssk.	TR	Ph.	Road side	c.
342.	Morinaceae	*Morina caolteriana* Rayle	PH	Hp.	Grassy mountain slope	c.
343.	Oleaceae	*Fraxinus xanthoxyloides* (G.Don) Wall.ex A. DC.	TR	Ph.	Dry slope	c.
344.	Onagraceae	*Oenothera glazioviana* Micheli	PH	Hp.	Cultivated land	r.
345.	Onagraceae	*Epilobium angustifolium* L.	PH	Hp.	Slope of grassy land	c.
346.	Onagraceae	*Epilobium latifolium* subsp. *latifolium* Peter C.Hoch & Peter H. Raven	PH	Hp.	Slope of grassy land	c.
347.	Onagraceae	*Epilobium laxum* Royle	PH	Hp.	Mountain slope	c.
348.	Onagraceae	*Epilobium palustre* L.	PH	Hp.	Mountain slope	c.
349.	Onagraceae	*Epilobium amurense* Hausskn	PH	Hp.	Mountain slope	c.
350.	Onagraceae	*Epilobium parviflorum* Schreber	PH	Hp.	Stony slope	c.
351.	Onagraceae	*Epilobium royleanum* Hausskn.	PH	Hp.	Undulate slope	c.
352.	Orobanchaceae	*Orobanche alba* Steph.	PH	Gp.	Slope of grassy land	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
353.	Orobanchaceae	*Orbanche cernua* var. *pseudo-clarkei* Jaferi	BH	Gp.	Undulate slope	r.
354.	Papaveraceae	*Meconopsis latifolia* (Prain) Prin	PH	Hp.	Stony slope	rr.
355.	Papialionaceae	*Astragalus* sp. nov	PH	Hp.	Dry slope	rr.
356.	Papilionaceae	*Oxytropis glabra* DC.	PH	Hp.	Alpine slope	c.
357.	Papilionaceae	*Lotus tenuis* Waldst. & Kit.	PH	Hp.	Cultivated land	c.
358.	Papilionaceae	*Medicago sativa* L.	PH	Hp.	Cultivated land	c.
359.	Papilionaceae	*Trifolium resupinatum* L.	AH	Tp.	Cultivated land	c.
360.	Papilionaceae	*Trifolium pratense* L.	PH	Hp.	Cultivated grass land	f.
361.	Papilionaceae	*Cicer microphyllum* Benth.	PH	Hp.	Cultivated grassy field	c.
362.	Papilionaceae	*Medicago lupulina* L.	AH	Tp.	Cultivated grassy field	c.
363.	Papilionaceae	*Medicago falcata* L.	PH	Hp.	Cultivated moist field	c.
364.	Papilionaceae	*Astragalus grahamianus* Benth.	PH	Cp.	Dry calcareous slope	c.
365.	Papilionaceae	*Colutea nepalensis* Sims	SH	NP.	Dry calcareous slope	r.
366.	Papilionaceae	*Chesneya depressa* (Oliver) Pop.	PH	Hp.	Dry slope	c.
367.	Papilionaceae	*Astracantha strobilifera* (Benth.) Podlech	PH	Cp.	Dry stony slope	c.
368.	Papilionaceae	*Hedysarum falconeri* Baker	PH	Hp.	Dry stony slope	c.
369.	Papilionaceae	*Colutea paulsenii* Freyn	SH	NP.	Dry stony slope	r.
370.	Papilionaceae	*Trifolium repens* L.	PH	Hp.	Grass land	at.
371.	Papilionaceae	*Oxytropis mollis* Benth.	PH	Hp.	Mountain clefts	c.
372.	Papilionaceae	*Astragalus oplites* Benth. ex R. Parker	PH	Cp.	Slope of mountain	c.
373.	Papilionaceae	*Astragalus rhizanthus* subsp. *candolleanus* (Benth.) Podlech	PH	Cp.	Mountain slope	c.
374.	Papilionaceae	*Astragalus falconeri* Bunge	PH	Hp.	Mountain slope	c.
375.	Papilionaceae	*Astragalus himalayanus* Klotzsch	PH	Hp.	Mountain slope	c.
376.	Papilionaceae	*Lotus corniculatus* L.	PH	Hp.	Mountain slope	c.
377.	Papilionaceae	*Oxytropis lapponica* (Wahl.) Gay	PH	Hp.	Mountain slope	c.
378.	Papilionaceae	*Astragalus rhizanthus* Benth.	PH	Hp.	Mountain slope	Cc

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
379.	Papilionaceae	*Melilotus officinalis* (L.) Pall.	AH	Tp.	Moist place	c.
380.	Papilionaceae	*Melilotus officinalis* subsp *alba* (Medik.) H. Ohashi &Tateishi	AH	Tp.	Moist place	c.
381.	Papilionaceae	*Oxytropis tatarica* Camb. ex Bunge	PH	Hp.	Moist place	f.
382.	Papilionaceae	*Astragalus subuliformis* DC.	PH	Hp.	Sandy dry plain	c.
383.	Papilionaceae	*Robinia pseudoacacia* L.	TR	Ph.	Sandy dry slope	r.
384.	Papilionaceae	*Trigonella gracilis* Benth.	PH	Hp.	Steep grassy slope	c.
385.	Papilionaceae	*Astragalus bicuspis* fischer	PH	Cp.	Undulate slope	c.
386.	Papilionaceae	*Astragalus coluteocarpus* subsp. chitralensis Wenninger	PH	Hp.	Undulate slope	c.
387.	Papilionaceae	*Astragalus peduncularis* Royle ex Benth.	PH	Hp.	Undulate slope	c.
388.	Papilionaceae	*Onobrychis laxiflora* subsp.*laxiflora* Baker	PH	Hp.	Undulate slope	c.
389.	Papilionaceae	*Melilotus indic*us (L.) All.	AH	Tp.	Undulate slope	c.
390.	Parnassiaceae	*Parnassia nubicola* Wall. ex Royle	PH	Hp.	Grassy mountain slope	c.
391.	Parnassiaceae	*Parnassia laxmannii* Pallas ex Schultes	PH	Hp.	Undulate slope	c.
392.	Plantaginaceae	*Plantago lanceolata* L.	PH	Hp.	Cultivated land	c.
393.	Plantaginaceae	*Plantago major* L.	PH	Hp.	Moist place	cc.
394.	Platanaceae	*Platanus orientalis* L.	TR	Ph.	Along the road	c.
395.	Plumbaginaceae	*Acantholimon lycopodioides* (Girard) Boiss.	SH	Cp.	Mountain clefts	r.
396.	Podophyllaceae	*Sinopodophyllum hexandrum* (Royle) T.S. Ying.	PH	Hp.	Slope of mountain	r.
397.	Polemoniaceae	*Polemonium caeruleum* L.	PH	Hp.	Slope of mountain	c.
398.	Polygonaceae	*Persicaria alpina* (All.) H. Gross	PH	Hp.	Alpine slope	c.
399.	Polygonaceae	*Rheum australe* D.Don	PH	Hp.	Alpine slope	c.
400.	Polygonaceae	*Persicaria glabra* (Willd.) M.Gomez	PH	Hp.	Cultivated land	c.
401.	Polygonaceae	*Persicaria nepalensis* (Meisn) Miyabe	PH	Hp.	Cultivated land	c.
402.	Polygonaceae	*Fagopyrum acutatum* (Lehm.) Monsf.ex K. Hammer	AH	Tp.	Cultivated land	c.
403.	Polygonaceae	*Fallopia convolvulus* (L.) A. Löve	AH	Tp.	Cultivated land	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
404.	Polygonaceae	*Rheum webbianum* Royle	PH	Hp.	Cultivated land P.R.C.	c.
405.	Polygonaceae	*Persicaria maculosa* Gray	PH	Hp.	Dry plain	c.
406.	Polygonaceae	*Polygonum paronychioides* C. A. Mey.	PH	Hp.	Dry slope	c.
407.	Polygonaceae	*Persicaria lapathifolia* (L.) Delarbe	PH	Hp.	Gentle slope	cc.
408.	Polygonaceae	*Rheum tibeticum* Maxim.ex Hook. f.	PH	Hp.	Mountain clefts	r.
409.	Polygonaceae	*Persicaria vivipara* (L.) Ronse Decr.	PH	Hp.	Slope of mountain	at.
410.	Polygonaceae	*Rumex nepalensis* Spreng.	PH	Hp.	Slope of mountain	c.
411.	Polygonaceae	*Rumex thianschanicus* Losinsk.	PH	Hp.	Mountain slope	c.
412.	Polygonaceae	*Aconogonon tortuosum* (D.Don) Hara var. *tibetanum* (Meisn.) S.-P. Hong	PH	Hp.	Mountain slope	cc.
413.	Polygonaceae	*Bistorta affinis* (D.Don)Greene	PH	Hp.	Mountain slope	cc.
414.	Polygonaceae	*Oxyria digyna* (L.)Hill	PH	Hp.	Mountain slope	cc.
415.	Polygonaceae	*Persicaria orientalis* (L.) Spach	PH	Hp.	Moist place	c.
416.	Polygonaceae	*Polygonum aviculare* L.	PH	Hp.	Murshy place	at.
417.	Polygonaceae	*Rumex hastatus* D.Don.	PH	Hp.	Road side slope	c.
418.	Polygonaceae	*Polygonum molliiforme* Boiss.	AH	Tp.	Stony slope	c.
419.	Primulaceae	*Primula elliptica* Royle	PH	Hp.	Grassy mountain slope	c.
420.	Primulaceae	*Primula schlagintweitiana* Pax	PH	Hp.	Grassy mountain slope	c.
421.	Primulaceae	*Primula macrophylla* var. *macrophylla* Y.J. Nasir	PH	Hp.	Grassy mountain slope	c.
422.	Primulaceae	*Androsace septentrionalis* L.	AH	Tp.	Slope of mountain	c.
423.	Primulaceae	*Androsace rotundifolia* Hardwicke	PH	Hp.	Slope of mountain	c.
424.	Primulaceae	*Primula denticulata* W. W. Smith	PH	Hp.	Moist place	c.
425.	Primulaceae	*Primula macrophylla* var. *moorcroftiana* (Wall. ex Klatt) W.W.Sm. &H.R. Fletcher	PH	Hp.	Moist slope	c.
426.	Primulaceae	*Androsace mucronifolia* Watt.	PH	Hp.	Moist slpoe	r.
427.	Primulaceae	*Cortusa brotheri* Pax ex Lispsky	PH	Hp.	Shady place	r.
428.	Primulaceae	*Androsace aizoon* subsp. aizoon Y.J. Nasir	PH	Hp.	Undulate slope	r.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
429.	Primulaceae	*Androsace thomsonii* (Watt) Y. Nasir	PH	Hp.	Undulate slope	r.
430.	Punicaceae	*Punica granatum* L.	TR	Ph.	Cultivated land	c.
431.	Ranunculaceae	*Aconitum violaceum* var. *violaceum* Y.J. Nasir	PH	Hp.	Alpine slopes	r.
432.	Ranunculaceae	*Ranunculus chaerophyllos* L.	PH	Hp.	Cultivated grass land	f.
433.	Ranunculaceae	*Ranunculus diffusus* DC.	PH	Hp.	Cultivated grass land	cc.
434.	Ranunculaceae	*Ranunculus hirtellus* Royle	PH	Hp.	Cultivated grass land	cc.
435.	Ranunculaceae	*Ranunculus laetus* Wall.ex Hook. f. & Thomson	PH	Hp.	Cultivated grass land	cc.
436.	Ranunculaceae	*Clematis orientalis* L.	PH	Hp.	Dry slope	r.
437.	Ranunculaceae	*Aquilegia fragrans* var. *fragrans* Harald Riedl & Y.J.Nasir	PH	Hp.	Grassy mountain slope	rr.
438.	Ranunculaceae	*Trollius acaulis* Lindley	PH	Hp.	Plain grassy field	c.
439.	Ranunculaceae	*Anemone tetrasepala* Royle	PH	Hp.	Slope of grassy land	c.
440.	Ranunculaceae	*Aconitum heterophyllum* var. *heterophyllum* Y.J. Nasir	PH	Hp.	Slope of grassy land	r.
441.	Ranunculaceae	*Aquilegia moorcroftiana* var. *moorcroftiana* Harald Riedl & Y.J.Nasir	PH	Hp.	Grassy undulate slope	c.
442.	Ranunculaceae	*Aconitum chasmanthum* Stapf ex Holmes	PH	Hp.	Mountain slope	c.
443.	Ranunculaceae	*Aconitum laeve* Royle	PH	Hp.	Mountain slope	c.
444.	Ranunculaceae	*Aquilegia pubiflora* Wall. ex Royle	PH	Hp.	Mountain slope	r.
445.	Ranunculaceae	*Pulsatilla wallichiana* (Royle) Ulbr.	PH	Hp.	Hill slope under tree shade	rr.
446.	Ranunculaceae	*Caltha palustris* var. *alba* (Cambess) Hook.f. & Thomson	PH	Hp.	Moist place	c.
447.	Ranunculaceae	*Caltha palustris* L.	PH	Hp.	Moist place	r.
448.	Ranunculaceae	*Delphinium pyramidale* Royle	PH	Hp.	Moist place	r.
449.	Ranunculaceae	*Actaea spicata* L.	PH	Hp.	Stony foot hill slope	r.
450.	Ranunculaceae	*Aquilegia fragrans* Benth.	PH	Hp.	Undulate slope under tree shade	c.
451.	Rhamnaceae	*Sageretia thea* (Osbeck) M.C. Johnston var. *brandrethiana* (Aitch.) Qaiser & Nazim	SH	NP.	Mountain clefts	r.
452.	Rosaceae	*Sibbaldia tetrandra* Bunge	PH	Hp.	Alpine slope	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
453.	Rosaceae	*Cerasus cerasoides*(Buch.-Ham.ex D. Don) S.Y. Sokolov	TR	Ph.	Cultivated land	c.
454.	Rosaceae	*Malus domestica* Borkh.	TR	Ph.	Cultivated land	c.
455.	Rosaceae	*Prunus amygdalus* Stokes	TR	Ph.	Cultivated land	c.
456.	Rosaceae	*Rosa foetida* J. Herm.	SH	NP.	Cultivated land	rr.
457.	Rosaceae	*Crataegus songarica* C. Koch.	TR	Ph.	Cultivated grass land	c.
458.	Rosaceae	*Prunus jacquemontii* Hook. f.	SH	NP.	Dry stony slope	c.
459.	Rosaceae	*Sibbaldia procumbens* L.	PH	Hp.	Grassy mountain slope	c.
460.	Rosaceae	*Potentilla desertorum* Bunge	PH	Hp.	Slope of grassy land	c.
461.	Rosaceae	*Potentilla gelida* C. A. Mey.	PH	Hp.	Slope of grassy land	c.
462.	Rosaceae	*Rubus* sp. nov.	PH	Hp.	Mountain clefts	r.
463.	Rosaceae	*Spiraea canescens* D. Don	SH	NP.	Mountain clefts	r.
464.	Rosaceae	*Sorbus lanata* (D. Don) S. Schauer	TR	Ph.	Mountain clefts	r.
465.	Rosaceae	*Sorbus tianschanica* Rupr.	TR	Ph.	Mountain clefts	r.
466.	Rosaceae	*Acomastylis elata* (Wall.ex G. Don) F. Bolle.	PH	Hp.	Mountain slope	c.
467.	Rosaceae	*Fragaria nubicola* (Hook. f.) Lindl. ex Lacaita	PH	Hp.	Mountain slope	c.
468.	Rosaceae	*Potentilla argyrophylla* var. *atrosanguinea (*Lodd., G. Lodd. & W. Lodd.)	PH	Hp.	Mountain slope	c.
469.	Rosaceae	*Potentilla doubjouneana* Camb.	PH	Hp.	Mountain slope	c.
470.	Rosaceae	*Potentilla gerardiana* Lindl. ex Lehm.	PH	Hp.	Mountain slope	c.
471.	Rosaceae	*Potentilla kashmirica* Hook. f.	PH	Hp.	Mountain slope	c.
472.	Rosaceae	*Potentilla turczaninowiana* Stschegl.	PH	Hp.	Mountain slope	c.
473.	Rosaceae	*Rubus irritans* Focke	PH	Hp.	Mountain slope	c.
474.	Rosaceae	*Rubus saxatilis* L.	PH	Hp.	Mountain slope	c.
475.	Rosaceae	*Sibbaldia purpurea* Royle	PH	Hp.	Mountain slope	c.
476.	Rosaceae	*Cotoneaster microphylla* Wall.ex Lindl.	SH	NP.	Mountain slope	c.
477.	Rosaceae	*Potentilla supina* L.	AH	Tp.	Moist place	c.
478.	Rosaceae	*Potentilla bannehalensis* Camb.	PH	Hp.	Undulate slope	c.
479.	Rosaceae	*Cerasus prostrata* (Labill.) Ser.	SH	NP.	Undulate slope	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
480.	Rosaceae	*Cotoneaster affinis* var. *bacillaris* (Lindl.) Scheider	SH	NP.	Undulate slope	c.
481.	Rosaceae	*Cotoneaster nummularia* Fish. & Mey.	SH	NP.	Undulate slope	c.
482.	Rosaceae	*Cotoneaster gilgitensis* Kultz.	SH	NP.	Undulate slope	f.
483.	Rosaceae	*Rosa multiflora* Thunb.	SH	NP.	Undulate slope	r.
484.	Rosaceae	*Rosa webbiana* Wall. ex Royle	SH	NP.	Undulate slope	cc.
485.	Rubiaceae	*Asperula oppositifolia* Reg. & Schmalh.	PH	Cp.	Dry slope	r.
486.	Rubiaceae	*Galium pauciflorum* Bunge	AH	Tp.	Mountain foot slop	c.
487.	Rubiaceae	*Galium verum* L.	AH	Tp.	Mountain foot slop	c.
488.	Rubiaceae	*Galium aparine* L.	AH	Tp.	Slope of mountain	c.
489.	Rubiaceae	*Galium boreale* L.	AH	Tp.	Slope of mountain	c.
490.	Rubiaceae	*Asperula oppositifolia* subsp. *pseudocynanchica* Ehrend.	PH	Cp.	Slope of mountain	r.
491.	Rutaceae	*Haplophyllum gilesii* (Hemsley) C.C. Townsend	PH	Cp.	Dry undulate slope	rr.
492.	Salicaceae	*Salix babylonica* L.	TR	Ph.	Cultivated land	at.
493.	Salicaceae	*Salix viminalis* L.	TR	Ph.	Cultivated land	c.
494.	Salicaceae	*Populus nigra* L.	TR	Ph.	Cultivated land	r.
495.	Salicaceae	*Populus alba* L.	TR	Ph.	Dry road side slope	r.
496.	Salicaceae	*Salix karelinii* Turcz.ex Stchegl.	SH	NP.	Slope of mountain	rr.
497.	Salicaceae	*Salix iliensis* Regel	SH	NP.	Undulate slope	at.
498.	Salicaceae	*Salix sericocarpa* N. J. Anderesson	TR	Ph.	Undulate slope	c.
499.	Sambucaceae	*Sambucus wightiana* Wall.ex Weight & Arn.	PH	Hp.	Mountain foot slop	r.
500.	Saxifragaceae	*Saxifraga hirculus* subsp. *alpina* (Engl.) Á. Löve	PH	Hp.	Grassy mountain slope	c.
501.	Saxifragaceae	*Saxifraga hirculus* var. *hirculus*	PH	Hp.	Slope of grassy land	c.
502.	Saxifragaceae	*Bergenia stracheyi* (Hook. f. & Thom.) Engl.	PH	Cp.	Mountain clefts	c.
503.	Saxifragaceae	*Bergenia ciliata* (Haw.) Sternb.	PH	Cp.	Mountain slope	c.
504.	Saxifragaceae	*Saxifraga komarovii* Losinsk.	PH	Hp.	Mountain slope	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
505.	Saxifragaceae	*Saxifraga moorcroftiana* (Ser.) Wall.ex Sternb.	PH	Hp.	Mountain slope	c.
506.	Saxifragaceae	*Saxifraga stenophylla* Royle	PH	Hp.	Mountain slope	c.
507.	Saxifragaceae	*Saxifraga sibirica* L.	PH	Hp.	Sandy moist place	at.
508.	Scrophulariaceae	*Euphrasia densiflora* Pennell	AH	Tp.	Alpine meadow	c.
509.	Scrophulariaceae	*Pedicularis bicornuta* Klotzsch	PH	Hp.	Alpine slope	c.
510.	Scrophulariaceae	*Pedicularis elephantoides* Benth.	PH	Hp.	Alpine slope	c.
511.	Scrophulariaceae	*Pedicularis punctata* Decne.	PH	Hp.	Alpine slope	c.
512.	Scrophulariaceae	*Picrorhiza kurrooa* Royle ex Benth.	PH	Hp.	Cultivated land	r.
513.	Scrophulariaceae	*Veronica campylopoda* Boiss.	AH	Tp.	Cultivated grass land	c.
514.	Scrophulariaceae	*Kickxia elatine* (L.) Dumort	PH	Hp.	Dry mountain slope	c.
515.	Scrophulariaceae	*Scrophularia scabiosifolia* subsp. *Stewartii* (Penn.) M. Qaiser & S. Khatoon	PH	Hp.	Dry mountain slope	c.
516.	Scrophulariaceae	*Scrophularia nudata* Pennell	PH	Hp.	Dry slope	c.
517.	Scrophulariaceae	*Euphrasia omeri* Qaiser &T. Siddiqui	AH	Tp.	Grassy mountain slope	c.
518.	Scrophulariaceae	*Pedicularis pyramidata* Royle	PH	Hp.	Grassy mountain slope	c.
519.	Scrophulariaceae	*Scrophularia jaferii* Khatoon & Qaiser	PH	Hp.	Grassy mountain slope	c.
520.	Scrophulariaceae	*Veronica leucothrix* Pennell	PH	Hp.	Grassy mountain slope	c.
521.	Scrophulariaceae	*Euphrasia remota* Pennell	AH	Tp.	Grassy mountain slope	c.
522.	Scrophulariaceae	*Kickxia ramosissima* (Wall.) Janchen	PH	Hp.	Mountain slope	c.
523.	Scrophulariaceae	*Pedicularis cheilanthifolia* var. *albida* (Pennell) Tsoong	PH	Hp.	Mountain slope	c.
524.	Scrophulariaceae	*Euphrasia foliosa* Pennell	AH	Tp.	Mountain slope	c.
525.	Scrophulariaceae	*Euphrasia kashmiriana* Pagslyey	AH	Tp.	Mountain slope	c.
526.	Scrophulariaceae	*Verbascum thapsus* L.	AH	Tp.	Mountain slope	c.
527.	Scrophulariaceae	*Veronica alpina* L.	PH	Hp.	Moist place	c.
528.	Scrophulariaceae	*Veronica persica* Poir	PH	Hp.	Moist place	c.
529.	Scrophulariaceae	*Veronica michauxii* Lam.	AH	Tp.	Road side slope	r.
530.	Scrophulariaceae	*Veronica lanosa* Royle ex Benth.	PH	Hp.	Sandy slope	c.
531.	Scrophulariaceae	*Veronica beccabunga* L.	AH	Tp.	Sandy slope	c.

S. No.	Family Name	Name of species	Habit	Life Form	Habitat	Status
532.	Scrophulariaceae	*Euphrasia alii* Qaiser & Siddiqui	AH	Tp.	Undulate slope	at.
533.	Scrophulariaceae	*Pedicularis pycnantha* Boiss.	PH	Hp.	Undulate slope	c.
534.	Scrophulariaceae	*Scrophularia omeri* Khatoon & M. Qiser	PH	Hp.	Undulate slope	c.
535.	Scrophulariaceae	*Leptorhabdos parviflora* (Benth.) Benth.	AH	Tp.	Undulate slope	c.
536.	Scrophulariaceae	*Veronica biloba* L.	AH	Tp.	Undulate slope	c.
537.	Scrophulariaceae	*Euphrasia petiolaris* Wettst.	AH	Tp.	Undulate slope	cc.
538.	Solanaceae	*Hyoscyamus niger* L.	AH	Tp.	Dry place	r.
539.	Solanaceae	*Solanum virginianum* L.	PH	Cp.	Dry place	rr.
540.	Solanaceae	*Datura metel* L.	PH	Hp.	Dry sandy slope	r.
541.	Solanaceae	*Physochlaina praealta* (Decne.) Miers	PH	Gp.	Slope of mountain	r.
542.	Solanaceae	*Solanum americanum* Mill.	AH	Tp.	Murishy place	c.
543.	Solanaceae	*Solanum nigrum* L. var.*nigrum*	AH	Tp.	Undulate slope	c.
544.	Tamaricaceae	*Tamarix arceuthoides* Bunge	TR	Ph.	Moist place	r.
545.	Tamaricaceae	*Myricaria prostrata* Hook. f. Thoms.	SH	NP.	Moist place	rr.
546.	Tamaricaceae	*Myricaria bracteata* Royle	SH	NP.	Stony moist place	rr.
547.	Thymelaceae	*Daphne mucronata* Royle	SH	Cp.	Slope of mountain	c.
548.	Urticaceae	*Urtica dioica* L.	PH	Hp.	Cultivated land	cc.
549.	Urticaceae	*Parietaria judaica* L.	PH	Hp.	Marshy place	r.
550.	Valerianaceae	*Valeriana pyrolifolia* Decne.	PH	Hp.	Slope of grassy land	c.
551.	Valerianaceae	*Valeriana jaeschkei* C.B.Clarke	PH	Hp.	Slope of mountain	c.
552.	Valerianaceae	*Valeriana jaeschkei* var. *kaschmiriensis* (Grubov) Y.Nasir	PH	Hp.	Moist place	c.
553.	Valerianaceae	*Valeriana clarkei* Briq.	PH	Hp.	Moist place	r.
554.	Violaceae	*Viola fedtschenkoana* W. Becker	PH	Hp.	Cultivated land	c.
555.	Violaceae	*Viola odorata* L.	PH	Hp.	Cultivated land	c.
556.	Violaceae	*Viola biflora* L.	PH	Hp.	Shady moist place	c.
557.	Zygophyllaceae	*Fagonia bruguieri* var. *bruguieri*	PH	Hp.	Dry place	r.
558.	Zygophyllaceae	*Peganum harmala* L.	PH	Hp.	Dry place	r.

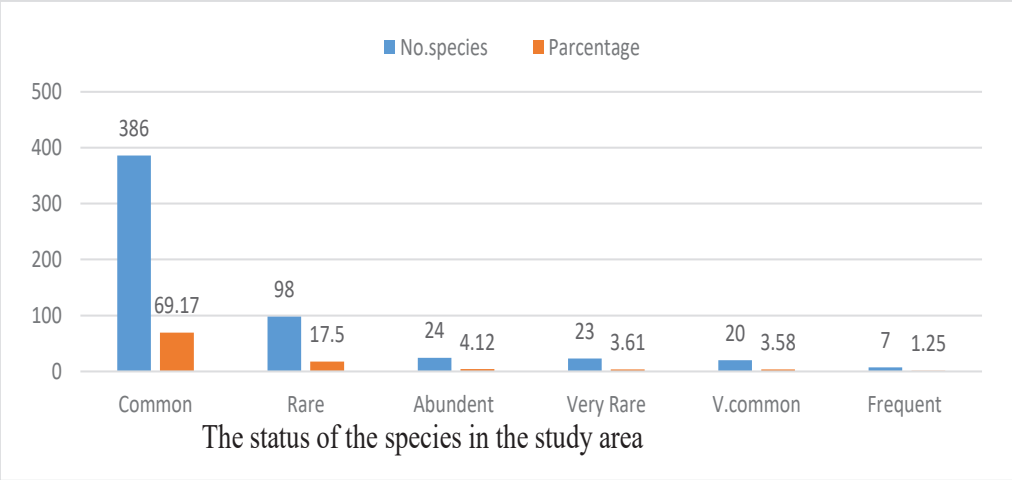

Fig. 5. Comparison of the distribution status with number and percentage of plant species in Astore valley

to high elevated land, urbanization, and grazing pressure. The overexploitation of roots is the most horrible factor in decreasing plant diversity. The second serious concern of depletion of plant wealth is the harvesting of plant parts before the seed maturation, due to which the dispersal of seeds process and natural seed bank phenomenon are become declined, which ultimately leads to the fast reduction of valuable floral diversity. Therefore the study area needs precise consideration to conserve the natural environment and development of natural resources sustainably.

Astore valley belongs to the Himalayan region, in the last century, major structural changes have been occurred, which causes in decrease about more than 50% potential of forest area [31]. Alteration in natural habitats and humiliation of natural vegetation indicates a decrease in several species as well as in the genetic diversity of the population [32]. The importance of endemic and rare species is not only for the regional and national level, but it is concerned from a global perspective. The vegetation, specifically medicinal important plants are important natural resources that are facing threats to extinction, which are needs effective steps for conservation and sustainable management to prevent extinction risk. In the present research work, the provided checklist of taxa may provide baseline information that could be helpful for ethnomedicinal studies, conservation strategies, and planning for the protection of biodiversity in the face of continually developing biotic stress.

4. CONCLUSION

Northern Pakistan, particularly the Astore Valley in the realm of vegetation, due to its topographic variation and geographical position. The Valley is situated in a somewhat ecotonic zone, between the Western Irono-Toranion region and the Sino-Japanese region. The study area is rich in floral diversity, providing host to many endemic and highly medicinal valued plant species. Over explosion of medicinal plants in the area is a serious threat to plant diversity. Affective conservation majors are direly needed to protect against the irreversible loss of important plant species. Many plant species were collected first time from the study area, out of which many species are endemic to Pakistan and some are typically endemic to Astore Valley. Therefore a thorough study is further needed, to document the complete plant diversity with distribution status in the Astore Valley.

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