

PLANT DIVERSITY OF HINDU KUSH MOUNTAIN REGION OF UTROR AND GABRAL, NORTHERN PAKISTAN

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ABSTRACT

An ethnobotanical research project was carried out in order to investigate the floral diversity of Utror and Gabral, two twin valleys situated in the remote north western part of District Swat, Pakistan. The area exhibit unique and diverse flora, as it is located in the Hindu-Kush mountain region, adjacent to Himalayas and Karakorams. We observed that twin valleys contain 9 species of Bryophytes belonging to 5 families, 34 species of Pteridophytes belonging to 6 families, 10 plant species of Gymnosperms belonging to 3 families and 610 plant species of Angiosperms belonging to 93 families (104 species of Monocot belonging to 13 families and 506 plant species of Dicot belonging to 80 families).

Key words: Angiosperms, Bryophytes, flora, gymnosperms, Pteridophytes.

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INTRODUCTION

Pakistan has wide floral biodiversity containing about 6000 taxa. There are 128 Pteridophytes, 23 gymnosperms, 1140 monocots including 576 grasses and 4492 taxa of dicots. Efforts were made to record medicinal plants of Pakistan. A conservative approach indicates that at least 1000 plant species are being used as medicinal and aromatic plants. Pakistan has very low forest cover. It is estimated that about 4 per cent of total land area is covered by forests, 5 per cent of which is protected.

There is a great variety of species because of the country's great physiographic and climatic contrasts. The North West Frontier Province (NWFP) has around 40 per cent of Pakistan's forests. Man-

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made forests are an important wood source in Pakistan. These are of four main types: irrigated plantations, farmland trees, linear planting and miscellaneous planting. About 90 per cent of the country's wood production is used as fuel. In 1980's, about 21.9 million cubic metre of wood was harvested, most of which was used as fuel. A two-year ban has been put to stop the large-scale illicit cutting and illegal logging. Annually 7,000 hectare of land is reforested in Pakistan. The national draft Forest Sector Policy of Pakistan of 1998 is now under discussion and people's participation is considered to be a strong element in the proposed policy.

The ecological trend of greatest concern in Pakistan today is the continuing loss, fragmentation and degradation of natural and modified habitats. This includes forest areas, freshwater and marine ecosystems and the continuing decline in many native species of plants and animals; some are already extinct, many are internationally threatened, and more still are of national concern.

Within the last 400 years, at least 4 mammal species are known to have disappeared from Pakistan: tiger, lion, swamp deer and one-horned rhinoceros. In recent decades, the Asiatic cheetah, the hangul and the black buck have become extinct. IUCN (1998) listed 37 species and 14 sub species of internationally threatened or near-threatened mammals as occurring in Pakistan. In addition, there are 25 internationally threatened bird species and 10 reptile species.

Causes of biodiversity loss include grazing and fodder collection, soil erosion (water and wind), exacerbated by a reduction in vegetation cover, resulting from agricultural activities and overstocking, hunting and trapping and over-collection of plants. The indirect causes of degradation are two fold in nature. The first relates to increasing demand for natural resources, the result of a growing population, economic growth and low primary productivity. Economic factors are the second cause, with the most prominent being, market failure, intervention failure, weak ownership, high discount rates, and globalization of the world economy (international trade competition, international financial flows). Economic development has weakened reliance on local biodiversity resources, eroding the need and concern for sustainable use of these resources. Communities have been disempowered by state intervention in the management of community forests. And the free market, with its associated economic incentives, encourages a competitive race for natural resources at the expense of traditional sharing.

Utror and Gabral Valleys

Utror valley is situated between 35° 20' to 35° 48' N latitude and 72° 12' and 72° 32' E longitude. The population of Utror is 6888 and the area of the valley is about 47400 hectares. Utror valley is

surrounded by Kalam and Bhan valleys on the east, upper Dir district on the west, Behrain valley on the south and Gabral valley on the north. It is 15 km from Kalam, the centre of Swat Kohistan. The altitude of the valley at Utror proper is 2300 m and reaches to 2900 m at Kandol Lake. Gabral valley lies between 35° 20' to 35° 48' N latitudes and 72° 12' and 72° 32' E longitudes over an area of about 38733 hectares. The population of Gabral is 3238. The valley is surrounded by Chitral District in the north, Utror valley in the south, upper Dir District in the west and Bhan and Paloga valleys in the east. It is 5 kms distant from Utror proper and 20 kms from Kalam. The altitude of the valley ranges from 2580 metres at Baila to 5160 metres at Karkaray Lake top. Both Utror and Gabral valleys are parts of Swat Kohistan. Kohistan means land of mountains in Persian language. There are three areas under the name Kohistan. These include Indus kohistan lying on both banks of river Indus from Chilas down to Bisham, Swat kohistan in the north of Swat valley with Kalam as its centre and Dir kohistan at the north of Dir valley (Inam-ur-Rahim and Viaro, 2002).

MATERIALS AND METHODS

Bryophytes, Pteridophytes, Gymnosperms and Angiosperms were collected during different seasons of the year especially summer season. The Pteridophytes, Gymnosperms and Angiosperms were then pressed, identified and preserved in herbarium of Quaid-e-Azam University, Islamabad. In case of Bryophytes, collection of the samples was done in polythene bags and the specimen were later on transferred in to the specimen bottles, after removing the clay or sand and washing the materials in running water.

The plants were assigned to their relevant families and a check list of the flora of Utror and Gabral was documented. The checklist was then compared with available literature (Stewart, 1967; Nasir & Ali, 1971-91; Ali and Qaiser, 1986).

RESULTS AND DISCUSSION

The results reveal that the plant diversity of Utror and Gabral valleys include 9 species of Bryophytes belonging to 5 families, 34 species of Pteridophytes belonging to 6 families, 10 species of Gymnosperms belonging to 3 families and 610 plant species of Angiosperms belonging to 93 families (104 species of Monocot belonging to 13 families and 506 plant species of Dicot belonging to 80 families). The plants with their respective families and locality of collection are given.

BRYOPHYTES**Family Aytoniaceae**

1. *Plagiochasma appendiculatum* L. et. L. pug. - Found at moist shady rocks.
2. *Plagiochasma articulatum*
3. *Reboulia hemispherica* Raddi. Opusc. Scient. Di. Bolonga - Found in moist places among rocks.

Family Conocephalaceae

4. *Conocephalum conicum* (L.) Necker, Elem. Bot. - Moist shady soil or rocks.

Family Marchantiaceae

5. *Dumartiera hirsuta* Reinw. Bl. et. Nees. Act. Leop. Carol. - Under running water & water falls.
6. *Marchantia polymorpha* L., Sp. Pl. - Moist rocks and banks of streams.
7. *Marchantia nepalensis* L. et. L. in Lehm. Pug. - Moist rocks and water banks.

Family Aneuraceae

8. *Aneura indica* St. (Ms.) - Moist rocks, among mosses in water falls.

Family Pelliaceae

9. *Pellia endivifolia* (Dicks) Dum. - Utror.

PTERIDOPHYTES**Family Aspleniaceae**

1. *Asplenium adiantum nigrum* L. - Utror and Gabral
2. *Asplenium pseudofontanum* Koss. - Gabral and Utror Valleys
3. *Asplenium ruta-muraria* L. - Lower parts of Utror valley (Karin Village)
4. *Asplenium septentrionale* (L) Hoffm - Gabral valley
5. *Asplenium trichomanes* L. - Utror valley
6. *Asplenium viride* Huds. - Gabral and Utror valley
7. *Asplenium fimbriatum* (Wall.) Moore - Utror valley
8. *Asplenium schimperi* Moug. - Desan, Utror valley

Family Pteridaceae

9. *Adiantum incisum* Forssk. - Common near springs in Utror and Gabral valley
10. *Adiantum venustum* D. Don. - Common in the lower forests of Utror valley
11. *Athyrium dentigerum* (C.B. Cl.) - Mehara and Bir Utror valley
12. *Cryptogramma stelleri* (S. G. Gmel.) Prantl - Common in the area
13. *Cheilanthes persica* (Bory) Mett. - Xerophytic fern, near Godaak Park
14. *Cystopteris dickieana* R. Sim - Gabral and Utror valley
15. *Cystopteris fragilis* (L.) Benth - Kanai Village/ Gul Abad

16. *Diplazium polypodioides* Bl. - Desan area of Utror valley
17. *Dryopteris blanfordii* (Hope) C. Chr. - Common in shady places.
18. *Dryopteris odontoloma* (Moore) C. Chr. - Common in the area.
19. *Dryopteris oreades* Fomin - Utror Valley
20. *Dryopteris sinofibrillosa* Ching - Common in Utror and Gabral
21. *Onychium japonicum* (Thumb) Kze - Ghos area of Utror
22. *Pteridium aquilinum* (L.) Kuhn - On the way to Kondole Lake
23. *Polystichum lonchitis* (L.) Roth - Utror village
24. *Polystichum nigropaleaceum* (Christ) Diels - Shahi Bagh
25. *Polystichum prescottianum* Wall. ex Moore - Behan village
26. *Polystichum squarrosus* (D. Don) Fee
27. *Pteris cretica* L. - Found in lower Utror and Kalam valley
28. *Thelypteris levingei* (Bak.) Ching - Kanai Village
29. *Thelypteris remotipinnata* (Hayata) Alston - Baila Village

Family Ophioglossaceae

30. *Botrychium lunaria* (L.) Sw. - Utror valley

Family Equisetaceae

31. *Equisetum arvense* L. - Utror and Gabral valley
32. *Equisetum ramosissimum* Desf. - Common in the area

Family Lycopodiaceae

33. *Lycopodium selago* L. - Wet mountain rocks in Utror valley

Family Selaginellaceae

34. *Selaginella sanguinolenta* Spring - In wet crevices

GYMNOSPERMS

Family Ephedraceae

1. *Ephedra gerardiana* Wall. ex Stapf - Higher altitude at Utror
2. *Ephedra intermedia* Schrenk & Meyer - Higher altitude at Utror

Family Taxaceae

3. *Taxus wallichiana* Zucc Syn. *Taxus baccata* L. Common in Gabral and Utror

Family Pinaceae

4. *Abies pindrow* Royle - Mixed forest with *Picea* and *Cedrus* in Gabral and Utror valley, mainly on north facing slopes
5. *Cedrus deodara* (Wall ex Lamb.) G. Don. - It is common and valuable plant of the area. Pure stands on south facing slopes while mixed with *Abies* and *Picea* on north facing slopes through out Gabral and Utror

6. *Juniperus communis* L. - Common in Utror and Gabral valley, above 3000 m.
7. *Juniperus excelsa* M. B. Fl. - Common in Utror and Gabral valley, above m.
8. *Picea smithiana* (Wall.) Boiss - Mixed forest with *Abies* and *Cedrus* in Gabral and Utror valley, mainly on north facing slopes
9. *Pinus wallichiana* A. B. Jackson - Very common in the area
10. *Pinus gerardiana* Wall.ex Lamb - Gabral and Utror valley

ANGIOSPERMS

1. Monocotyledonae

Family Alismataceae

1. *Alisma plantago-aquatica* L. - Upper parts of Utror valley and Gabral

Family Alliaceae

2. *Allium consanguineum* Kunth - Lower parts of Utror valley
3. *Allium schoenoprasum* L. - Gabral valley
4. *Allium cepa* L. - Cultivated in the area
5. *Allium humile* Kunth - Utror and Gabral Valleys
6. *Allium sativum* L. - Cultivated

Family Araceae

7. *Acorus calamus* L. - Endangered species due to extensive collection
8. *Arisaema flavum* Schott. - Common in Utror and Gabral
9. *Arisaema jacquemontii* Blume. - Utror

Family Cyperaceae

10. *Carex cruenta* Nees. - Utror and Gabral valley
11. *Carex infuscata* Nees. - Utror valley
12. *Carex moorcroftii* Falc. ex Boott - Jabba area of Utror valley
13. *Carex philocrena* Krecz - Utror and Gabral valley
14. *Carex polyphylla* Kar and Kir. - Upper Utror and Gabral valley
15. *Carex psychrophila* Nees. - Utror valley
16. *Carex remota* L. - Utror and Gabral valley
17. *Cyperus aristatus* Rottb. - Utror valley
18. *Cyperus flavescens* L. - Utror valley
19. *Cyperus globosus* All. - Utror valley
20. *Cyperus sanguinolentus* Vahl - Utror valley
21. *Cyperus squarrosus* L. - Utror valley
22. *Eleocharis obscura* T. Koyama - Upper Gabral valley
23. *Eleocharis uniglumis* (Link) Schult. - Utror valley
24. *Kobresia laxa* Boeck. - Upper Utror and Gabral valley
25. *Kobresia nepalensis* (Nees) Kuk - Utror and Gabral valley
26. *Kobresia royleana* (Nees) Boeck - Utror and Gabral valley
27. *Scirpus setaceus* L. - Common in Utror valley

Family Dioscoreaceae

28. *Dioscorea deltoidea* Wall. ex Kunth - Rarely found in the lower parts of Utror-Gabral

Family Iridaceae

29. *Iris hookeriana* Foster - Utror and Gabral valley

Family Juncaceae

30. *Juncus himalensis* Kl. and Garcke - Upper Gabral valley

31. *Juncus membranaceus* Buchen. - Utror and Gabral valley

Family Alliaceae

32. *Allium cepa* L. - Cultivated in Utror and Gabral valley for domestic requirements

33. *Allium consanguineum* Kunth - Utror valley

34. *Allium humile* Kunth - Utror and Gabral valleys

35. *Allium sativum* L. - Gabral valley

36. *Allium schoenoprasum* L. - Utror and Gabral valleys

Family Juncaginaceae

37. *Triglochin palustris* L. - Common in Utror and Gabral

Family Liliaceae

38. *Eremurus himalaicus* Baker - Utror valley

39. *Colchicum luteum* Baker - Gabral and Utror valley

40. *Fritillaria roylei* Hk. F. - Utror valley

41. *Lilium polyphyllum* D. Don - Utror and Gabral valley

42. *Lloydia serotina* (L.) Reichenb - Utror and Gabral valley

43. *Polygonatum geminiflorum* Dene - Utror and Gabral valley

44. *Polygonatum verticillatum* All. - Utror valley

45. *Smilax vaginata* Dene - Utror valley

46. *Trillium govanianum* Wall. - Utror valley

Family Orchidaceae

47. *Dactylorhiza hatagirea* (Don) Soo - Found in wet places at Utror valley

48. *Neottia listeroides* Lindl. - In the vicinity of Kandol lake, 2900 m.

49. *Epipactis gigantea* Dougl. ex Hook. - Lower parts of Utror valley, 2000 m.

50. *Epipactis helleborine* (L.) Crantz - above Utror 2600m, W. Utror in the Darya Kandol valley Picea forest 2700m, near Kalam mixed coniferous forest.

51. *Epipactis persica* (Soo') Nannfeld. - Lower parts of Utror valley

52. *Goodyera repens* (L.) R.Br. - Jabba, Shahi bagh, 2700m

53. *Habenaria latilabris* (Lindl.) Hook.f. - Utror valley, 2500 m.

54. *Spiranthes sinensis* (Pers.) Ames - Utror 2500m, Gabral

55. *Neottia listeroides* Lindl. - Utror and Gabral valley

56. *Spiranthes lancea* (Thunb.) Backer - Utror and Gabral valley

Family Poaceae (Graminae)

57. *Agrostis canina* L. - Utror valley

58. *Agrostis hissarica* Roshevitz - Lower Utror valley and Kalam
59. *Agrostis stolonifera* L. - Lower Utror valley and Kalam
60. *Agropyron canaliculatum* Nevski - Upper parts of Gabral valley
61. *Agropyron dentatum* HK. f. - Upper parts of Gabral valley
62. *Agropyron repens* (L.) P. Beauv. - Upper parts of Gabral valley
63. *Agropyron semicostatum* Nees. - Upper parts of Gabral valley
64. *Alopecurus aequalis* Sobol - Found in shallow water in Utror
65. *Alopecurus himalaicus* HK.f. - Utror and Gabral valley
66. *Apluda mutica* L. - On stream banks
67. *Arthraxon nudus* Hochst. - Utror valley
68. *Arthraxon prionodes* (Steud.) Dandy - Utror and Gabral valley
69. *Bothriochloa ischaemum* (L.) Keng - Common in the area
70. *Brachypodium sylvaticum* (L.) P. Beauv. - Common in Utror
71. *Bromus japonicus* Thunb - In lower Utror
72. *Bromus ramosus* Huds. - Common in Utror and Gabral
73. *Bromus tectorum* L. - Available in Utror and Gabral
74. *Calamagrostis pseudophragmites* (Hall. f.) Koeler - Very common in the area
75. *Capillipedium parviflorum* (R. Br.) Stapf - Utror valley
76. *Chrysopogon echinulatus* (Nees ex Steud.) W. Wats - Utror
77. *Cymbopogon stracheyi* (Hk.f.) Raizada & Jain. - Common in Utror and Gabral
78. *Cynodon dactylon* (L.) Pers - Very common throughout the area
79. *Dactylis glomerata* L. - Common in Utror
80. *Dichanthium annulatum* (Forssk.) Stapf - Lower parts/foot hills
81. *Duthiea bromoides* Hack - Gabral and Utror
82. *Echinochloa crus-galli* (L.) P. Beauv. - In the maize fields of Utror valley
83. *Eremopoa persica* (Trin.) Roshev. Var. *songarica* (Schrenk) Bor. - Utror
84. *Festuca ovina* L. - Common in Utror
85. *Festuca rubra* L. - Common in Utror
86. *Helictotrichon virescens* Henr. - Utror and Gabral
87. *Hemarthria compressa* (L. f.) R. Br. - Kanai village, Utror
88. *Heteropogon contortus* (L.) P. Beauv. - Utror valley
89. *Milium effusum* L. - Lower Utror
90. *Oryzopsis lateralis* Stapf. - Utror valley
91. *Panicum miliaceum* L. - Gabral and Utror valleys
92. *Pennisetum flaccidum* Griseb. - Utror valley
93. *Pennisetum lanatum* Kl. - Gabral valley
94. *Pennisetum orientale* Rich. - Utror valley
95. *Phacelurus speciosus* (Steud.) C. E. Hubb. - Gabral and Utror valleys
96. *Phleum alpinum* L. - Utror valley

97. *Phleum himalaicum* Mez. - Gabral and Utror valleys
98. *Phragmites communis* Trin. - Utror valley
99. *Poa araratica* Trautv. - Common in the area
100. *Poa nemoralis* L. - Utror valley
101. *Poa stapfiana* Bor. - Utror valley
102. *Poa alpigena* (Blytt.) Lindm. - Utror valley
103. *Setaria glauca* (L.) P. Beauv. - Utror valley
104. *Setaria viridis* (L.) P. Beauv. - Utror and Gabral valley
105. *Stipa himalaica* Roshev. - Utror and Gabral valley
106. *Stipa sibirica* (L.) Lam. - Poisonous to grazing animal. Utror and Gabral
107. *Trisetum aeneum* (Hk.f.) RRS. - Utror valley
108. *Zea mays* L. - Cultivated in Utror and Gabral valley but now almost replaced by potatoes.

Family Trilliaceae

109. *Trillium govanianum* Wall. ex Royle - Utror valley

2. Dicotyledonae

Family Aceraceae

1. *Acer pentapomicum* J. L. Stewart ex Brandis - Utror and Gabral Valleys
2. *Acer caesium* Wall. ex Brand. - Utror and Gabral Valleys
3. *Acer cappadocicum* Gled. Var. *indicum* (Pax) Rehder. - Utror Valley

Family Adoxaceae

4. *Sambucus wightiana* Wall. - Utror and Gabral Valleys

Family Amaranthaceae

5. *Achyranthus aspera* L. - Utror and Gabral Valleys
6. *Amaranthus hybridus* L. - Lower parts of Utror valley
7. *Amaranthus graecizane* L. - Baila
8. *Amaranthus viridis* L. - Weed found in lower parts of Utror
9. *Amaranthus spinosus* L. - Kanai

Family Anacardiaceae

10. *Rhus succedanea* L. var. *himalaica* J. D. Hooker - Lower Utror valley 2100 m.
11. *Pistacia chinensis* Bunge ssp. *integerrima* (J. L. Stewart) Rech.f. (Kakar singhi) - Lower parts of Utror valley, 2000 m.

Family Apiaceae (Umbelliferae)

12. *Aegopodium alpestre* Ledeb. (Syn. *Pimpinella kashmirica* Dunn) - Desan
13. *Aegopodium burttii* E. Nasir - Lower parts of Utror valley
14. *Angelica glauca* Edgew. - Utror valley
15. *Bunium persicum* (Boiss.) Fedtsch. - Common and the seeds are gathered
16. *Bupleurum candollei* Wall. - Utror and Gabral Valleys

17. *Bupleurum constancei* E. Nasir - Utror, Kalam
18. *Bupleurum exaltatum* M. B. (syn. *B. falcatum* L.) - Gul abad
19. *Bupleurum falcatum* L. - Utror valley
20. *Bupleurum Kohistanicum* E. Nasir - Jabba
21. *Bupleurum linearifolium* DC. - Utror, 2300 m.
22. *Carum carvi* L. forma *gracile* (Lindl.) Wolff. - Utror and Gabral Valleys
23. *Chaerophyllum reflexum* Lindl. - Gabral Valleys
24. *Chaerophyllum vilosum* Wall. - - Utror and Gabral Valleys
25. *Coriandrum sativum* L. - Dhanya is commonly cultivated in the area.
26. *Daucus carota* L. - Wild and cultivated carrot.
27. *Foeniculum vulgare* Mill. - Cultivated in Utror valley
28. *Heracleum candicans* Wall ex. DC. - Utror valley
29. *Pimpinella diversifolia* DC. - Lower parts of Utror valley
30. *Pimpinella stewartii* (Dunn) Nasir - Utror
31. *Pleurospermum stylosum* Clarke. - Utror and Gabral Valleys
32. *Scaligeria aitchisonii* Wolff. - Gabral Valley
33. *Selinum papyraceum* C.B.Clarke in Hook. - Lower parts of Utror valley
34. *Seseli sibiricum* (L.) Bth. - Utror Valley
35. *Trachyspermum ammi* (L.) Sprague - Utror and Gabral Valleys
36. *Torilis japonica* (Houtt.) DC. - Utror and Gabral Valleys
37. *Turgenia latifolia* (L.) Hoffm. - Utror and Gabral Valleys
38. *Vicatia coniifolia* DC. - Gabral Valley

Family Araliaceae

39. *Hedera nepalensis* K. Koch. - The Himalayan Ivy is common from 3500-8000 feet.

Family Asteraceae (Compositae)

40. *Achillea millefolium* L. - Utror and Gabral Valleys
41. *Arctium lappa* L. - Utror and Gabral Valleys
42. *Artemisia indica* Roxb. - Utror Valley
43. *Artemisia paryiflora* Roxb. - Very common, Utror, Kalam
44. *Artemisia persica* Boiss. - Gabral
45. *Artemisia brevifolia* Wall. - Common in the area
46. *Artemisia scoparia* Waldst & Ket. - Utror and Gabral Valleys
47. *Artemisia vulgaris* L. - Utror Valley
48. *Brachyactis pubescens* (DC) Aitch. & Cl. - Utror and Gabral Valleys
49. *Brachyactis roylei* (DC) Wend. - Utror Valley
50. *Carthamus oxycantha* M. B. - Utror and Gabral Valleys
51. *Cichorium intybus* L. - Common, 8000 feet at Utror
52. *Cirsium falconeri* (Hk.f.) Petrak - Utror and Gabral Valleys
53. *Cirsium wallichii* DC var. *platylepis* Hk.f. - Utror and Gabral Valleys
54. *Conyza Canadensis* Conquist. - Utror Valley

55. *Cousinia thomsoni* Clarke - Gabral Valley
56. *Crepis multicaulis* ssp. *congesta* (Regel) Babc. - Gabral Valley
57. *Crepis sancta* (L) Babc. ssp. *falconeri* (Hk.f) Babc. - Gabral Valley
58. *Doronicum roylei* DC. - Utror and Gabral Valleys
59. *Echinops griffithianus* Boiss - Utror and Gabral Valleys
60. *Filago arvensis* L. - Utror and Gabral Valleys
61. *Helianthus tuberosus* L. - Cultivated in lower parts of Utror
62. *Hieracium vulgatum* Koch. - Utror and Gabral Valleys
63. *Inula obtusifolia* Kern. - Cliffs below Utror, above Kalam.
64. *Launa procumbens* (Roxb.) Ramayya & Rajgopal - Utror and Gabral Valleys
65. *Lactuca decipiens* (H. & T) Clarke - Utror and Gabral Valleys
66. *Lactuca dissecta* D. Don - Utror Valley
67. *Lactuca laevigata* (Wall) Clarke - Utror and Gabral Valleys
68. *Lactuca longifolia* (Wall.) DC. - Utror and Gabral Valleys
69. *Lapsana communis* L. - Baila
70. *Onopordium acanthium* L. - Utror and Gabral Valleys
71. *Saussuria lappa* Clarke - Utror and Gabral Valleys
72. *Scorzonera virgata* DC. (Syn. *S. divaricata* Clarke non Turez.) - Karin
73. *Senecio chrysanthemoides* DC. - Common in Utror valley
74. *Senecio kraschenninnikovii* Schischkin - Utror and Gabral Valleys
75. *Solidago virgaurea* L. - Utror and Gabral Valleys
76. *Sonchus oleraceus* L. - Utror and Gabral Valleys
77. *Taraxacum officinale* Wigg. - Common in the Valleys
78. *Tagetes minuta* L. - Utror and Gabral Valleys
79. *Tussilago farfara* L. - Common near water courses
80. *Xanthium strumarium* - Godak park

Family Asclepiadaceae

81. *Cynanchium jacquemontianum* Dcne. - Lower parts of Utror valley, 2000 m.

Family Balsaminaceae

82. *Impatiens edgeworthii* Hk.f. - Kalam, Utror.
83. *Impatiens glandulifera* Royle. - Utror and Gabral Valleys
84. *Impatiens parviflora* DC. - Bahrein-Gabral, to Utror.
85. *Impatiens thomsoni* Hk.f. - Utror and Gabral Valleys

Family Berberidaceae

86. *Berberis aitchisonii* Ahrendt - Gabral and Utror valley
87. *Berberis jaeschkeana* Schneid. var. *jaeschkeana* - Utror 2600m
88. *Berberis lycium* Royle - Rare due to exploitation
89. *Berberis pseudoumbellata* Parker ssp. *Pseudoumbellata* - Lower parts of Utror
90. *Berberis vulgaris* L. - Rare in the Valleys
91. *Epimedium elatum* Morr. & Dcne.

92. *Sinopodophyllum hexandrum* (Royle) T.S.Ying. - Both Utror and Gabral

Family Betulaceae

93. *Betula utilis* D. Don. (Syn. *Betula jacquemontii* Spach.) - Upper parts of Gabral & Utror valley

Family Brassicaceae (Cruciferae)

94. *Alliaria petiolata* (Bieb.) Cav. & Grande - Utror and Gabral Valleys

95. *Arabidopsis thaliana* (L.) Heynh. - Utror and Gabral Valleys

96. *Arabidopsis wallichii* (H. & T.) Busch - Utror and Gabral Valleys

97. *Arabis amplexicaulis* Edgew. - Gabral Valley

98. *Arabis glabra* (L.) Bernh. - Utror and Gabral Valleys

99. *Arabis pangiensis* "Watt" Jafri. - Gabral Valley

100. *Arabis pterosperma* Edgew - Karin village of Utror valley

101. *Barbarea vulgaris* R.Br. - Lower Utror valley

102. *Brassica oleracea* L. var. *botrytis* - The Cauliflower is also cultivated.

103. *Brassica oleracea* L. var. *capitata* - Cabbage is cultivated in the area

104. *Brassica campestris* L. var. *rapa* - Turnip, 'shalgam' is in cultivation.

105. *Capsella bursa pastoris* (L) Medik. - Common weed in Upper Swat

106. *Cardamine impatiens* L. - Common in Utror

107. *Cardamine macrophylla* - Utror and Gabral Valleys

108. *Erysimum altaicum* C. A. Mey - Utror and Gabral Valleys

109. *Erysimum hieraciifolium* L. - Utror Valley

110. *Erysimum melicentae* Dunn. - Deshan area of Utror

111. *Erysimum sisymbrioides* C.A. Mey. - Ghos

112. *Nasturtium officinale* R. Br. - Lower parts of Utror

113. *Raphanus sativus* L. - The radish is cultivated.

114. *Rorippa islandica* (Oeder) Borbas - Lower Utror valley

115. *Sisymbrium brassiciforme* C.A. Mey- Utror and Gabral Valleys

116. *Sisymbrium irio* L. - Common weed of the area

117. *Turritis glabra* L. - Gabral and Utror valley

Family Borginaceae

118. *Arnebia euhcroma* (Royle) I.M. Johnston.- Gabral Valley

119. *Asperugo procumbens* L. - Near Kandole Lake

120. *Cynoglossum glochidiatum* Bth. - Very common.

121. *Cynoglossum microglochin* Benth. - Common in the Valleys

122. *Eritrichium rupestre* Bunge var. *pectinatum* (Pall.) Brand. - Utror

123. *Hackelia macrophylla* (Brand) I. M. Johnston - Jabba, Karin Village of Utror valley

124. *Hackelia uncinata* (Royle) Fisch. - Jabba area of Utror valley

125. *Heliotropium europaeum* L.var. *lasiocarpum* (F. & M.) Kazmi - Utror and Kalam valley

126. *Lepechinella microcarpa* (Boiss) Riedl. - Utror and Kalam valley
 127. *Lindelofia anchlussoides* (Lindl) Lehm.
 128. *Lindelofia longiflora* (Benth.) Bail. var. *falconeri* (C.B. Claeke) Brand. - Gabral
 129. *Mertensia exserta* I. M. Johnston. - Utror and Gabral Valleys
 130. *Myosotis arvensis* (L.) Hill - Jabba area of Utror valley
 131. *Myosotis caespitosa* C.F. Schultz. - Utror and Kalam valley
 132. *Myosotis sylvatica* Ehrh.ex Hoffm. - Utror valley
 133. *Onosma hispidum* Wall. ex G.Don. - Utror and Gabral Valleys
 134. *Paracaryum microcarpum* Boiss. - Utror and Gabral Valleys

Family Callitrichaceae

135. *Callitriche palustris* L. - Baila

Family Campanulaceae

136. *Asyneuma thompsonii* (Hook.f.) Bornm. - Utror and Gabral valleys
 137. *Campanula cashmeriana* Royle - Utror valley
 138. *Campanula colorata* L. - Utror and Gabral Valleys
 139. *Campanula cashmeriana* Royle - Utror and Gabral Valleys
 140. *Campanula latifolia* L. - Utror and Gabral Valleys

Family Caprifoliaceae

141. *Lonicera hypoleuca* Dcne. - Gabral
 142. *Lonicera orientalis* Lam. var. *discolor* (Lindl) Clarke - Gabral
 143. *Lonicera quinquelocularis* Hardw. - Lower parts of Utror valley
 144. *Viburnum cotinifolium* D.Don. - Gabral and Utror valley
 145. *Viburnum grandiflorum* Wall. ex DC. - Utror and Gabral Valleys

Family Caryophyllaceae

146. *Arenaria orbiculata* Royle - Utror
 147. *Arenaria leptoclados* (Reichb.) Guss. - Utror and Gabral Valleys
 148. *Cerastium dahuricum* Fisch. - Utror and Gabral valleys
 149. *Cerastium fontanum* Baumg. ssp. *Triviale* (Link) Jalas. - Utror valley
 150. *Cerastium glomeratum* Thuill. - Lower parts of Utror valley
 151. *Dianthus anatolicus* Boiss. - Gabral, common in dry places.
 152. *Dianthus Jacquemontii* Edgew. ex Hook.f. - Utror valley
 153. *Dianthus orientalis* Adams var. *angulatus* (Royle) Williams Lower Utror valley
 154. *Herniaria hirsuta* L. - Utror
 155. *Lepyeodiclis holosteoides* (C. A. Mey) Fenzl ex Fisch & Mey - Jabba, Utror
 156. *Lychnis himalayensis* (Rohrb.) Edgew. - Utror and Gabral Valleys
 157. *Minuartia kashmirica* (Edgew) Mattf. - Upper Gabral valley
 158. *Morina coulteriana* Royle - Utror and Gabral Valleys
 159. *Myosoton aquaticum* (L.) Moench. - Utror and Gabral Valleys

160. *Petrorhagia alpina* (Habl) P.W. Ball & Heywood - Lower parts of Utror
161. *Pseudostellaria heterantha* Pax. - Utror valley
162. *Pseudostellaria himalaica* (Franch.) Pax - On the way to Kandole
163. *Saglna saginoides* (L) Karst. - Utror and Gabral Valleys
164. *Sapobaria griffithiana* Boiss. - Lower parts of Utror valley
165. *Silene afghanica* Rohrb. - Utror and Gabral Valleys
166. *Silene indica* var. *cashmeriana* (Royle) Y.J. Nasir. - Utror and Gabral Valleys
167. *Silene kunawurensis* Bth. - Utror and Gabral Valleys
168. *Silene moorcroftiana* Wall. ex Bth. - Utror and Gabral Valleys
169. *Silene viscosa* (L.) Pers., Synops.- Lower parts of Utror valley
170. *Silene vulgaris* (Moench) Garcke - Utror and Gabral
171. *Stellaria graminea* L. - Common in the area
172. *Stellaria media* (L.) Cyr. - Utror and Gabral Valleys
- Family Cannabinaceae**
173. *Cannabis sativa* L. - Common weed of the area, also used for narcotic purposes
- Family Celastraceae**
174. *Euonymus hamiltonianus* Wall. - Utror valley
- Family Chenopodiaceae**
175. *Acroglochis persicarioides* (Poir.) Moq. - Utror and Gabral valley
176. *Chenopodium album* L. - Common in Utror and Gabral valley
177. *Chenopodium botrys* L. - Utror and Gabral valley
178. *Chenopodium hybridum* L. - Gabral valley
179. *Chenopodium murale* L. - Utror and Gabral Valleys
180. *Spinacea oleracea* L. - Cultivated in Utror and Gabral valley
- Family Colchicaceae**
181. *Colchicum luteum* Baker - Gabral and Utror valley
- Family Convolvulaceae**
182. *Ipomoea hederacea* (L.) Jacq - Utror valley
183. *Convolvulus arvensis* L. - Common weed
- Family Corylaceae**
184. *Corylus jacquemontii* Dene - Utror and Gabral valley
- Family Crassulaceae**
185. *Sedum ewersii* Ledeb. - Gabral
186. *Sedum tibeticum* H. and T. var. *stracheyi* (H.and T.) Clarke. - Gabral
187. *Rosularia alpestris* (Kar. & Kir.) Boriss. - Utror and Gabral Valleys
- Family Cucurbitaceae**
188. *Bryonia aspera* Stev. ex Ledeb - Kalam to Utror
189. *Bryonia monoica* Aitch. & Hemsl. - Utror and Gabral Valleys
190. *Momordica charantia* L. - The karela or bitter gourd is cultivated
191. *Coccinia grandis* (L.) Voigt. - Utror and Gabral Valleys

Family Cuscutaceae

192. *Cuscuta approximata* var. *urceolata* (Ktze.) Youncker – U - -tror
 193. *Cuscuta europaea* L. - Lower parts of Utror valley
 194. *Cuscuta europaea* L. var. *indica* Engel. - Utror and Gabral Valleys
 195. *Cuscuta reflexa* Roxb. - Utror

Family Dipsacaceae

196. *Scabiosa speciosa* Royle - Upper parts of Gabral valley, 3000 m.
 197. *Dipsacus mitis* D. Don. - Utror and Gabral Valleys

Family Datisceae

198. *Datisca cannabina* L. - Common

Family Ebenaceae

199. *Diospyros lotus* L. - Locally called Amlok. Lower parts of Utror valley

Family Elaeagnaceae

200. *Elaeagnus umbellata* Thunb - Utror and Gabral Valleys
 201. *Elaeagnus parviflora* Wall. ex Royle - Utror and Gabral Valleys
 202. *Hippophae rhamnoides* L. - Common in Gabral

Family Ericaceae

203. *Gaultheria tricophylla* Royle - Hills of Utror
 204. *Rhododendron arboreum* Sm. - Common on river banks

Family Euphorbiaceae

205. *Andrachne cordifolia* Muell. - Utror and Gabral Valleys
 206. *Euphorbia aserbajdzhanica* Bordz. - Common in Utror valley
 207. *Euphorbia cornigera* Boiss - Utror valley
 208. *Euphorbia hispida* Boiss. - Utror and Gabral Valleys
 209. *Euphorbia maddenii* Boiss. - Utror and Gabral Valleys
 210. *Euphorbia swatensis* Kita. - Utror Valley
 211. *Euphorbia helioscopia* L. - Utror Valley
 212. *Euphorbia wallichii* Hook.f - Common
 213. *Euphorbia prostrata* L. - Utror and Gabral Valleys

Family Fabaceae (Leguminosae)

214. *Astragalus anisacanthus* Boiss ex DC. - Gabral and Utror
 215. *Astragalus candolleanus* Royle (Syn. *A. royleanus* Bunge) - Gall area
 216. *Astragalus grahamianus* Royle ex bth. - Gabral Valley
 217. *Astragalus himalayanus* Kl. - Utror and Gabral Valleys
 218. *Astragalus polyacanthus* Royle ex Bth. - Utror Valley
 219. *Chesneya cuneata* (Benth.) Ali - Utror 2200 m.
 220. *Cicer macranthum* M. Pop - Lower parts of Utror valley
 221. *Desmodium tiliaefolium* G. Don. - Common shrub.
 222. *Indigofera heterantha* Wall. ex Brandis - Endemic to the area
 223. *Indigofera hirsuta* L. - Utror and Gabral Valleys
 224. *Lathyrus humilis* Fisch. ex DC. - Utror and Gabral Valleys
 225. *Lathyrus emodi* (Fritsch) Ali. - Utror and Gabral Valleys

226. *Lathyrus pratensis* L. - On the way from kalam to Utror
 227. *Lespedeza juncea* var. *variegata* (Camb.) Ali - Very common.
 228. *Lespedeza sericea* Miq. var. *hispida* - Utror and Gabral Valleys
 229. *Lotus corniculatus* L. var. *corniculatus* - Common in Gabral and Utror valley
 230. *Lotus corniculatus* L. var. *tenuifolius* - Common in the area
 231. *Medicago falcata* L. - Common with yellow flowers
 232. *Medicago lupulina* L. - Common in Utror and Gabral valley
 233. *Medicago polymorpha* L. - Common in the area
 234. *Medicago sativa* L. - Also very common on roads sides and in meadows.
 235. *Oxytropis mollis* Royle ex Benth. - Baila of Utror valley
 236. *Phaseolus aureus* Roxb. - Mung, cultivated in the valleys.
 237. *Phaseolus vulgaris* L. - Common beans cultivated in the area.
 238. *Pisum sativum* L. - The common cultivated Pea.
 239. *Trifolium alexandrinum* L. - Cultivated fodder
 240. *Trifolium repens* L. - White clover; common in the area.
 241. *Trifolium resupinatum* L. - Shaftal is commonly grown as a fodder crop.
 242. *Trigonella emodi* Bth. - Utror and Gabral Valleys
 243. *Trigonella gracilis* Benth. - Gabral and upper Utror valley
 244. *Trigonella pubescens* Edgew. ex Baker - Upper parts of Utror valley
 245. *Vicia rigidula* Royle - Gabral and Utror village
 246. *Vicia sativa* L. - Common in the area
 247. *Vicia sepium* L. - Lower Utror.
 248. *Vicia tenuifolia* Roth. - Utror valley; altitude, 2400 m.

Family Fagaceae

249. *Quercus semicarpifolia* Smith - Utror valley
 250. *Quercus baloot* Griff. - Lower parts of Utror valley
 251. *Quercus dilatata* Royle - Gabral and very common in Utror valley
 252. *Quercus incana* Roxb. - Utror and Gabral Valleys

Family Fumariaceae

253. *Corydalis stewartii* Fedde - Gabral and Utror valley
 254. *Corydalis govaniana* Wall. - Near Jabba village of Utror valley
 255. *Corydalis pakistanica* Jafri - Lower Utror valley
 256. *Corydalis clarkei* Prain - Utror and Gabral Valleys
 257. *Corydalis moorcroftiana* Wall. - Utror and Gabral Valleys
 258. *Fumaria indica* (Hausskn) Pugsley. - Common in grain fields in early spring.

Family Gentianaceae

259. *Gentiana cachemirica* Dene. - Utror and Gabral Valleys
 260. *Lomatogonium coeruleum* (Royle) H. Sm. ex b. L Burttt.f - Jabba
 261. *Swertia cordata* Wall. - Common

262. *Swertia speciosa* Wall var. *perfoliata* Clarke - Gabral Valley

Family Geraniaceae

263. *Geranium rubifolium* Lindl. - Gabral and Utror, Jabba ± 9000

264. *Geranium collinum* Steph. ex Willd. - Gabral and Utror Valley, 2800 m.

265. *Geranium grevilleanum* Wall. - Utror and Gabral Valleys

266. *Geranium himalayense* Klotzsch - Gabral Valley, 3000-3500 m.

267. *Geranium kishtvariense* R. Knuth. - Utror and Gabral Valleys

268. *Geranium nepalense* Sweet. - Common to 9000 feet.

269. *Geranium pratense* Sweet. - Utror and Gabral Valleys

270. *Geranium rectum* Trautv. var. *glabrata* Trautv. - Utror Valley, 3000 m.

271. *Geranium ruvekare* L.

272. *Geranium swatense* Schonbeck-Temsey Common in mountains of lower Utror valley, 2200 m.

273. *Geranium wallichianum* D. Don - Utror valley

Family Grossulariaceae

274. *Ribes orientale* Desf. - Utror and Gabral

275. *Ribes himalense* Royle ex Decne. - Utror and Gabral

Family Hypericaceae

276. *Hypericum perforatum* L. - Common in the area.

Family Hippocastanaceae

277. *Aesculus indica* (Wall.ex Camb) Hk.f. - Utror and Gabral Valleys

Family Illecebraceae

278. *Herniaria cachemiriana* J. Gay - Lower Parts of the valley

Family Juglandaceae

279. *Juglans regia* L. - Very common and mostly cultivated in the area.

Family Lamiaceae (Labiatae)

280. *Ajuga bracteosa* Wall. (Cat.) ex Benth. (Kauri Booti, Neel - Khanti) Common in the Utror valley

281. *Ajuga parviflora* Benth - Utror and Gabral Valleys

282. *Calamintha umbrosa* (M.B) Bth.ex D.C - Utror

283. *Calamintha vulgaris* (L.) Druce. - Utror and Gabral Valleys

284. *Dracocephalum nutans* L. - Gabral Valley

285. *Lamium album* L. - Common

286. *Leonurus cardiaca* L.

287. *Mentha longifolia* (L) Huds var. *incana* (Willd). - Common

288. *Mentha longifolia* (L) Huds var. *royleana* (Bth) Recg. f. - Common

289. *Mentha spicata* L. - Utror and Gabral Valleys

290. *Nepeta clarkei* Hk.f. - Gabral Valley

291. *Nepeta distans* Royle ex Bth. - Gabral Valley

292. *Nepeta erecta* Bth. - Utror and Gabral Valleys

293. *Nepeta glomerulosa* Boiss - Utror Valley

294. *Nepeta laevigata* (D.Don) Hard. Mazz. - Utror and Gabral Valleys
 295. *Nepeta leucolaena* Bth. - Utror and Gabral Valleys
 296. *Nepeta oblanceolata* Rech f and ederb. - Gabral Valley
 297. *Nepeta podostachys* Bth. - Gabral Valley
 298. *Nepeta prainii* Du. - Utror and Gabral Valleys
 299. *Nepeta salviaefolia* Royle. - Kalam, Utror.
 300. *Origanum vulgare* L. - Utror and Gabral Valleys
 301. *Phlomis bracteosa* Royle. - Utror and Gabral Valleys
 302. *Plectranthus rugosus* Wall. - Common in lower parts
 303. *Prunella vulgaris* L. - Utror
 304. *Salvia nubicola* Wall. - Utror and Gabral Valleys
 305. *Salvia moorcroftiana* Wall ex. Benth - Utror
 306. *Scutellaria edelbergii* Rech.f. - Gabral and Utror valley
 307. *Scutellaria heydei* Hk. F. - Utror
 308. *Scutellaria multicaulis* Boiss. - Utror and Gabral Valleys
 309. *Stachys alpina* Bth. - Utror Valley
 310. *Stachys floccosa* Bth. - Utror and Gabral Valleys
 311. *Stachys sericea* Wall. - Gabral Valley
 312. *Thymus linearis* Benth. - Common

Family Loranthaceae

313. *Arceuthobium minutissimum* Hook.f. Utror and Gabral valley, -
 epiphyte on *Pinus wallichiana*
 314. *Viscum album* L. - Utror and Gabral valley, epiphyte on walnut
 trees.
 315. *Korthalsella opuntia* (Thunb.) Merrill - Utror valley, epiphyte on
Quercus baloot

Family Malvaceae

316. *Hibiscus esculentus* L. - Utror
 317. *Hibiscus trionum* L. - Cultivated in Utror
 318. *Lavatera Kashmiriana* Camb. - Utror and Gabral Valleys
 319. *Malva neglecta* wall. - Common
 320. *Malva sylvestris* L. Var. *mauritiana* Boiss. - Samhal is the prime
 pot herb of Utror and Gabral Valleys and used through out the year
 321. *Malva verticillata* L. var. *verticillata* - Karin area of Utror valley

Family Meliaceae

322. *Melia azedarach* L. - Lower Utror and Kalam
 323. *Cedrella serrata* Royle - Lower Utror valley

Family Monotropaceae

324. *Monotropa hypopithys* L. - Kanai village of Utror

Family Moraceae

325. *Morus alba* L. - Common in Utror valley
 326. *Morus nigra* L. - Lower Utror
 327. *Ficus palmata* Forsk. - Common in the lower parts, fruit is edible
 328. *Ficus racemosa* L. - Utror and Gabral Valleys

329. *Ficus carica* L. - Utror, Kalam

Family Morinaceae

330. *Morina coulteriana* Royle - Lower parts of Utror valley

331. *Morina longifolia* Wall. ex DC - Gul Abad

Family Oleaceae

332. *Fraxinus xanthoxyloides* (Wall ex. D. Don) DC. - Gabral and Utror

333. *Fraxinus hookeri* Wenzig - Utror valley

334. *Fraxinus excelsior* L. - Utror and Gabral Valleys

335. *Jasminum humile* L. - Utror and Gabral Valleys

336. *Jasminum officinale* L. - Utror and Gabral Valleys

337. *Olea ferruginea* Royle - Lower Utror and Kalam

338. *Syringa emodi* Wall. - Utror and Gabral Valleys

Family Onagraceae

339. *Circaea pricei* Hayata. - Utror, Jaba etc; Common in shade.

340. *Epilobium angustifolium* L. - Utror.

341. *Epilobium laxum* Royle - Gabral Valley

Family Oxalidaceae

342. *Oxalis acetosella* L. - Utror and Gabral Valleys

343. *Oxalis corniculata* L. - Gabral

Family Paeoniaceae

344. *Paeonia emodi* Wall. ex Royle var. *glabrata* - Gabral and Utror valley

Family Parnassiaceae

345. *Parnassia nubicola* Wall.

Utror v

Family Papaveraceae

346. *Papaver somniferum* L.

Cultivated on s

347. *Papaver dubium* L. var. *laevigatum* (M. Bieb.) Elkan Wild weed in the area

Family Plantaginaceae

348. *Plantago major* L. - Common in Utror and Gabral.

349. *Plantago lanceolata* L. - Common in Utror valley

Family Platanaceae

350. *Platanus orientalis* L. - Cultivated tree in the area

Family Polemoniaceae

351. *Polemonium coeruleum* L. - Jabba village of Utror and Shahi Bagh

Family Polygonaceae

352. *Bistorta amplexicaule* D. Don. - Utror and Gabral valley

353. *Fagopyrum gilesii* (Hemsl.) Hedberg. - Utror and Gabral valley

354. *Fagopyrum esculentum* (L.) Moench. - Common

355. *Fagopyrum tataricum* Gaertn. - Common in Utror and Gabral valley

356. *Polygonum amphibium* L. - Utror and Gabral valley

357. *Polygonum aviculare* L. - Common weed

358. *Polygonum dumetorum* L. - Utror and Gabral valley

359. *Polygonum paronychioides* C. A. Mey Utror and Gabral valley
 360. *Rheum australe* D. Don. - Common but under immense pressure of collection
 361. *Rumex dentatus* L. - Utror and Gabral valley
 362. *Rumex nepalensis* Spreng - Common in Utror valley
 363. *Rumex patientia* L. - Utror and Gabral valley
 364. *Rumex hastatus* D. Don. - Utror and Gabral valley

Family Primulaceae

365. *Anagallis arvensis* L. - Utror and Gabral Valleys
 366. *Primula macrophylla* D. Don var. *macrophylla* - Gabral valley
 367. *Primula denticulata* Sm. - Utror and Gabral Valleys
 368. *Primula warschenewskiana* B. Fed. Ssp. *Rhodantha* Wend - Gall area
 369. *Androsace rotundifolia* Hardwicke ssp. *rotundifolia* - Border area of Kalam and Utror valley
 370. *Androsace foliosa* Dcne. ex Duby - Jabba area of Utror valley
 371. *Androsace mucronifolia* Watt - Gabral and Utror valley
 372. *Androsace himalaica* (Kn) Hand - Utror and Gabral Valleys
 373. *Androsace mucronifolia* Watt. - Utror and Gabral Valleys

Family Punicaceae

374. *Punica granatum* L. - Wild pomegranate is present in the Utror valley.

Family Ranunculaceae

375. *Aconitum heterophyllum* Wall. ex Royle - Upper parts of Utror
 376. *Aconitum chasmanthum* Stapf ex Holmes - Gabral
 377. *Aconitum rotundifolium* Kar. & Kir. - Upper parts of Utror
 378. *Aconitum swatense* Tamura - Upper pUtror & Gabral
 379. *Aconitum violaceum* Jacq. ex Stapf - Upper parts of Utror
 380. *Actaea spicata* L. - Common in high level forests
 381. *Anemone falconeri* T.T - Gabral and Utror valley
 382. *Anemone polyanthes* D. Don - Gabral and Utror valley
 383. *Anemone rupicola* Camg var. *glabriuscula* H. & T - Gul Abad
 384. *Aquilegia pubiflora* Wall. - Gabral and Utror valley
 385. *Callianthemum alatavicum* Freyn. - Gabral and Utror valley
 386. *Caltha palustris* L. var. *alba* H. & T - Endangered in the area
 387. *Clematis connata* DC - Gabral and Utror valley
 388. *Clematis grata* Wall - Gabral and Utror valley
 389. *Delphinium tenuipes* Tamura - Gabral and Utror valley
 390. *Paeonia emodi* Wall - Endangered in the area
 391. *Ranunculus arvensis* L. - Common
 392. *Ranunculus hirtellus* Royle. - Utror, Kalam and above, common. This is highly variable species.
 393. *Ranunculus paucidentatus* Schrenk. - Gabral and Utror valley

394. *Ranunculus trichophyllus* Chaix (*Batrachium trichophyllum* (Chaix) v.d. Bossche). - Water Buttercup grows in shallow water. Utror, above Kalam.

Family Rhamnaceae

395. *Rhamnus prostrata* Jacq. - Gabral and Utror valley

Family Rosaceae

396. *Agrimonia eupatoria* L. - Gabral valley
 397. *Cotoneaster affinis* Lindl. var. *bacillaris* (Lindl.) Schneirder. - Utror valley
 398. *Cotoneaster integerrima* Medik. - Gabral and Utror valleys
 399. *Cotoneaster nummularia* Fisch & Mey. - Utror valley
 400. *Cotoneaster multiflora* Bunge - Utror valley
 401. *Cotoneaster obovata* Wall.ex Dunn - Gabral and Utror valley
 402. *Cotoneaster rosea* Edgew. - Gabral and Utror valley
 403. *Cotoneaster falconeri* Klotz - Utror valley
 404. *Fragaria indica* Andrews - Very common in the area.
 405. *Fragaria nubicola* Lindl. - Wild strawberry; very common.
 406. *Malus pumila* Miller. - Apples are cultivated in Utror and Gabral
 407. *Potentilla gerardiana* Lindl. - Gabral and Utror valley
 408. *Potentilla Kashmirica* Hk.f - Gabral and Utror valley
 409. *Potentilla nepalensis* Hk.f - Gabral and Utror valley
 410. *Prunus armeniaca* L. - Apricots are cultivated in Utror and Gabral.
 411. *Prunus bokhariensis* Royle ex Schn. - Cultivated in the area
 412. *Prunus domestica* L. (*P. communis* Huds.). - Common plums in the area
 413. *Prunus cornuta* (Wall.) Steud. - Gabral and Utror valley
 414. *Prunus jacquemontii* Hk.f. - Gabral and Utror valley
 415. *Prunus persica* (L.) Batsch. - Peaches are cultivated plum.
 416. *Prunus prostrata* Labill. - Gabral and Utror valley
 417. *Pyrus communis* L. - Cultivated Pears in Utror and Gabral.
 418. *Rosa brunonii* Lindl. (Syn. *R. moschata* J. Herm) - Common white flowered climber.
 419. *Rosa corymbifera* Borkh. - White flowered nearly prostrate shrub
 420. *Rosa macrophylla* Lindl. - Pink flowered shrub
 421. *Rosa nanothamnus* Boul. (*R. webbiana* Wall. Var. *microphylla*) - Common
 422. *Rosa webbiana* Wall. ex Royle.
 423. *Sibbaldia cuneata* Hornem. (Syn. *Potentilla sibbaldi*) - Common
 424. *Sorbaria tomentosa* (Lindl.) Rehder - A common shrub in the area.
 425. *Sorbus lanata* (D.Don) S.Schauer. - Gabral and Utror valley
 426. *Spirea canescence* D. Don - Gabral and Utror valley

Family Rubiaceae

427. *Asperula oppositifolia* Regel & Schum. - Gabral and Utror valley
 428. *Galium aparine* L. - Weed in Lower Swat also Kalam, Utror etc.
 429. *Galium asperuloides* Edgew. var. *asperuloides* - Utror valley
 430. *Galium boreale* L. - Boundary of Kalam and Utror valley
 431. *Rubia cordifolia* L. - Kanai village of Utror valley

Family Rutaceae

432. *Skimmea laureola* (DC) Sieb & Zucc. - Godak park
 433. *Dictamnus albus* L. - Utror and Kalam
 434. *Zanthoxylum armatum* Roxb. ex Dc. Prodr. - Utror

Family Salicaceae

435. *Populus alba* L. - Common on river side in Utror valley
 436. *Populus ciliata* Wall. ex Royle - Utror and Gabral
 437. *Salix alba* L. - Common on river banks in Utror and Gabral valley
 438. *Salix hastata* L. - Utror and Gabral valley
 439. *Salix julacea* Anders - Utror valley
 440. *Salix viminalis* L. - Gabral and Utror valley
 441. *Salix wilhelmsiana* M. Bieb. - Utror valley

Family Saxifragaceae

442. *Bergenia ciliata* (Haw.) Sternb (zakham-e-hayat) - Very common near water courses in Utror valley
 443. *Bergenia stracheyi* (H. and T.) Engler. - Gabral and Utror valley
 444. *Parnassia laxmanni* Pall. ex Schultes - Gabral and Utror valley
 445. *Ribes emodense* Rehder. (Syn. *R. rubrum* Clarke) - Utror
 446. *Ribes orientale* Desf. - Gabral and Utror valley
 447. *Saxifraga sibirica* L. - Lower parts of Utror valley and Gabral

Family Scrophulariaceae

448. *Euphrasia aristulata* Penn. - Gabral and Utror valley
 449. *Leptorhabdos parviflora* (Bth.) - Utror valley
 450. *Lindenbergia indica* (L.) Vatke. - Gabral and Utror valley
 451. *Pedicularis pectinata* Wall. - Gabral valley
 452. *Pedicularis punctata* Dene. - Utror valley
 453. *Pedicularis pyramidata* Royle. - Utror valley
 454. *Pedicularis tenuirostris* Bth. - Gabral and Utror valley
 455. *Scrophularia robusta* Penn. - Utror valley
 456. *Scrophularia scabiosaefolia* Bth. Cliffs - Utror valley
 457. *Verbascum thapsus* L. - Common in both Lower and Upper Swat.
 458. *Veronica anagallis-aquatica* L. - Common in wet places in Upper Swat.
 459. *Veronica arvensis* L. - Kalam-Utror.
 460. *Veronica beccabunga* L. - Gabral and Utror valley
 461. *Veronica biloba* L. - Gabral and Utror valley
 462. *Veronica persica* Poir. - A common Himalayan species.

Family Smilacaceae

463. *Smilax vaginata* Decne. - Lower parts of Utror valley

Family Solanaceae

464. *Atropa acuminata* Royle ex Miers (deadly nightshade) - Utror and Gabral valley, 2500m

465. *Capsicum annum* L. - Cultivated in the area

466. *Datura stramonium* L. - Utror valley

467. *Hyoscyamus niger* L. - Utror valley

468. *Lycopersicum esculentum* Miller. - Cultivated

469. *Solanum miniatum* Benh. ex Willd - Utror valley

470. *Solanum tuberosum* L. - Cultivated extensively in Utror area and Gabral

471. *Withania somnifera* (L.)Dunal - Utror valley

Family Staphylaceae

472. *Staphylea emodi* Brandis - Lower Utror valley bordering Kalam

Family Tamaricaceae

473. *Myricaria bracteata* Royle - Gabral Valley

474. *Tamarix troupii* Hole - Utror Valley

Family Thymeleaceae

475. *Daphne mucronata* Royle - Utror valley

Family Tiliaceae

476. *Corchorus tridens* L. - Gabral valley

Family Ulmaceae

477. *Ulmus wallichiana* Planch - Gabral valley

478. *Celtis australis* L. - Common in Utror Valley

Family Urticaceae

479. *Debregasia saeneb* (Forssk) Hepper & Word - Utror

480. *Parietaria debilis* Forst. - Utror and Gabral valley

481. *Urtica dioica* L. - Common in Utror and Gabral Valleys

Family Valerianaceae

482. *Valeriana jatamansi* Jones - (Mushkbala) Utror valley

483. *Valeriana hardwickii* Wall. - Utror valley

484. *Valeriana himalayana* Grub. - Gabral valley

485. *Valeriana pyrolifolia* Decne. - Utror

486. *Valeriana stracheyi* C.B Clarke - Gabral and Utror valleys, 2600 m.

Family Violaceae

487. *Viola rupestris* F.W. Schm. - Utror

488. *Viola betonicifolia* Sm. - Gabral valley

489. *Viola biflora* L. - Utror valley

490. *Viola sylvestris* Lam. - Utror

491. *Viola canescens* Wall. ex Roxb. - Lower Utror valley

Family Vitaceae

492. *Vitis vinifera* L. - Grapes are frequently cultivated in the area

Pakistan is bestowed with rich natural resources, diverse ecological conditions and vis-à-vis ethnic composition and an ancient and great civilization. Pakistan has a rich flora of over 6000 flowering plant species. There are 128 Pteridophytes, 23 Gymnosperms, 1140 Monocots including 576 grasses and 4492 Dicots. A large number of them are found in north and north western parts comprising the Himalayas. The flora of Utror and Gabral is unique and interesting because this area is located adjacent to the meeting point of three big mountainous ranges, namely Himalayas, Karakorum and Hindu Kush. During present investigations, 9 species of Bryophytes, 34 species of Pteridophytes, 10 plant species of Gymnosperms, 104 species of Monocots and 506 plant species of Dicots were collected from Utror and Gabral. Ahmad and Sirajuddin (1996) classified the district of Swat into seven types of forests, i.e. tropical dry deciduous forest, dry subtropical broad leaved forest, subtropical Chir forest, moist temperate forest, dry temperate forest, sub alpine forest and alpine forest. The studies included 1541 species from 135 families reported from the area. The ecological status of 48 medicinal species was also reported.

The flora of Utror and Gabral is under biotic pressure as forests are ruthlessly destroyed and cleared for making agricultural fields. The forest resources are illegally used for economic benefits without giving a single thought to the adverse future perspectives of such actions and their impact on the flora of the region. In my view, awareness campaigns, good will and sincere efforts on the part of Govt., NGO's and local people can serve the purpose of saving the diminishing forests in the future. Wilson (1992) stated that the worst thing that can happen during the 1980s is not energy depletion, economic collapse, limited nuclear war, or conquest by a totalitarian government. As terrible as these catastrophes would be for us, they can be repaired with in a few generations. The one process on going in the 1980s that will take millions of years to correct is the loss of genetic and species diversity by the destruction of natural habitats. In the course of the next few decades, it seems certain that the biological riches of our planet will become greatly depleted. Under present circumstances, it is estimated that about 50,000 higher plant species, that is one fifth of the existing total, will be either extinct or severely genetically eroded by the year 2050 AD and this is the folly that our descendants are at least likely to forgive us.

CONCLUSION

A total of 9 species of Bryophytes belonging to 5 families, 34 species of Pteridophytes belonging to 6 families, 10 plant species of Gymnosperms belonging to 3 families and 610 plant species of Angiosperms belonging to 93 families (104 species of Monocot

belonging to 13 families and 506 plant species of Dicot belonging to 80 families) were documented in the twin valleys, Utror and Gabral, of district Swat, Pakistan.

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