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50. STATUS OF PTERIDOPHYTIC DIVERSITY FROM DEWALTHAL HILLS OF PITHORAGARH (W. HIMALAYA)

From the taxonomy point of view, the Himalayan ferns have received considerable attention during the last century. Information on the fern vegetation is so far based on the classical pioneering work of Clarke (1880), Beddome (1892), Hope (1904) and Duthie (1906). Later, Khullar (1984), Punetha and Kaur (1987), and Punetha and Kholia (1989) explored the pteridophytic diversity and gave a comprehensive list of ferns and fern-allies of Pithoragarh district.

The Kumaon Himalaya is very rich in pteridophytic flora because of its varied topography, climate, soil and vegetation. Pithoragarh is one of the important districts of Kumaon Himalayas known as Shor valley, which is bounded by Nepal and Tibet. However, the ferns and fern-allies of Dewalthal hills seem to be neglected. Therefore, the present paper is an attempt to list ferns and fern-allies of the area.

Physiography and Vegetation: Dewalthal is situated at an altitude of 1,600 m and is about 22 km away from Pithoragarh. It is surrounded by mountains varying in elevation from 900-2,100 m. The main collection sites were Nakhnoli (1,400 m); Chammu (1,100 m); Pukhrora (1,300 m); Kakragar (1,200 m); Lori (2,100 m); Jingal (1,500 m); Dewalthal (1,600 m) and Surun (1,900 m).

The ground vegetation is covered with a more or less dense crop of grasses during rains. The mountain slopes are covered with forests of chir and oak. Near Rin, Chammu and Jingal forest patches of *Pinus longifolia* are interspersed with terraced fields. Between 1,500-1,800 m are mixed forests of *Quercus leucotrichophora*, *Rhododendron arboreum*, *Lyonia ovalifolia*, *Myrica esculenta* with bushes of *Phyrocantha*

cranulata, *Rhus parviflora*, *Myrsine africana*, *Rubus ellipticus*, *Woodfordia floribunda* which give a prominent character to vegetation. The ground cover constitutes *Flemenzia fruticosa*, *Heteropogon contortus* and *Themeda anathera* among others. At higher elevations, the typical associates of *Quercus leucotrichophora* are *Rhododendron arboreum*, *Myrica esculenta*, *Quercus glauca*. The ground cover includes *Berberis asiatica*, *Myrsine africana* and *Deutzia staminea* among others.

ENUMERATION OF THE TAXA

Seventy species of ferns and fern-allies representing 38 genera and 22 families have been listed. The arrangement of families of ferns follows mainly Pichi-Sermolli (1977) with minor modification and that of fern-allies follows Ching (1978). All the species and genera under each family are arranged alphabetically with their latest nomenclature. The specimen number and name of locality are given for each taxon. The voucher specimens are deposited in the herbarium of the Department of Botany, Kumaon University Campus, Almora (ALM) Uttaranchal, India.

FAMILY: Selaginellaceae Milde

Selaginella bryopteris (Linn.) Bak.; Kushani; 1,600 m (3113).

S. chrysocaulos (Hook. et Grev.) Spring; Pukhrora; 1,400 m (3115).

S. delicatula (Desv. ex Poir) Alston; Lamtari; 1,400 m (3117).

S. exigua Spring; Jingal; 1,350 m (3120).

S. involvens (Sw.) Spring; Jingal; 1,350m (3122).

S. sanguinalenta f. *indica* (Mild.) Alston;

Rinbichhul; 1,500 m (2290).

FAMILY: Equisetaceae

L. C. Richard *ex* De Candolle

Equisetum diffusum D. Don; Mailkhet; 1,600 m (3124).

FAMILY: Ophioglossaceae (R. Br.) Agarhdh

Ophioglossum reticulatum Linn.; Kalsin Temple; 1,400 m (3125).

FAMILY: Loxogrammeaceae Ching *ex* Pic.-Ser.

Loxogramme involuta (D. Don) Presl.; Koraltara; 2,000 m (3203).

FAMILY: Polypodiaceae Bercht. *et* Presl

Arthromeris wallichiana (Spr.) Ching; Lori; 1,900 m (3128).

Drynaria propinqua (Wall. *ex* Mett.) J. Sm.; Lori; 1,900 m (3131).

Goniophlebium amoenum (Wall. *ex* Mett.) J. Sm.; Dharamghar; 2,100 m (3151).

G. argutum (Wall. *ex* Mett.) J. Sm.; Lori; 1,900 m (3155).

Lepisorus amaurolepidus (Sledge) Bir & Trikha; Lori; 1,900 m (3124).

L. excavatus (Willd.) Ching; Lori; 1,900 m (3137).

L. mehrae Fras. Jenk.; Kuchha; 2,000 m (3140).

L. nudus (Hook.) Ching; Kakra; 1,800 m (3157).

Microsorium membranaceum (D. Don) Ching; Dharamghar; 2,100 m (3145).

Phymatopteris oxyloba (Wall. *ex* Kze) Pic.-Ser.; Dharamghar; 2,100 m (3148).

Pyrrosia flocculosa (D. Don) Ching; Kapri-Gao; 1,660 m (2987).

P. manni (Gies.) Ching; Gwata; 1,700 m (2985).

P. porosa (Presl) Hovenkamp; Kushani; 1,800 m (2980).

P. stigmosa (Sw.) Ching; Kushani; 1,800 m (2975).

FAMILY: Lygodiaceae C. Presl

Lygodium flexuosum (Linn.) Sw.; Lamtari; 1,400 m (2973).

L. japonicum (Thunb.) Sw.; Lamtari; 1,400 m (2970).

FAMILY: Sinopteridaceae Koidz

Cheilanthus bullosa Kunze; Chaupata; 1,600 m (2965).

C. dalhousiae Hook.; Bishonakhan; 1,300 m (2970).

C. rufa D. Don; Dewalthal; 1,800 m (2961).

FAMILY: Cryptogrammeaceae Pic.-Ser.

Onychium cryptogrammoides Christ; Kushani; 1,700 m (2974).

FAMILY: Pteridaceae Ching

Pteris cretica Linn.; Pukhrora; 1,600 m (2756).

P. stenophylla Wall. *ex* Hook. *et* Grev.; Pukhrora; 1,600 m (2759).

P. subquinata Wall. *ex* Ag.; Pukhrora; 1,600 m (2757).

P. vittata Linn.; Bishonakhan; 1,500 m (2756).

P. wallichiana Ag.; Bishonakhan; 1,500 m (2754).

FAMILY: Adiantaceae (Pr.) Ching

Adiantum capillus-veneris Linn.; Surun; 1,900m (2738).

A. edgeworthii Hook.; Jingal; 1,400 m (2755).

A. incisum Forssk.; Manichhina; 1,600 m (2763).

A. lunulatum Burm. f.; Ghattgara; 1,600 m (2118).

FAMILY: Hemionitidaceae Pic.-Ser.

Gymnopteris vestita (Wall. *ex* Presl) Und.; Lori; 2,100 m (3129).

FAMILY: Hymenophyllaceae Link

Crepidomanes insigne (Bosch.) Fu; Nagrora; 2,000 m (3129).

FAMILY: Hypolepidaceae Pic.-Ser.

Hypolepis glandulifera Brownsey *et* Chinnock; Jingal, 1,400 m (2290).

Pteridium aquilinum (Linn.) Kuhn.; Kushani; 1,600 m (3974).

FAMILY: Lindsaeaceae Pic.-Ser.

Sphenomeris chinensis (Linn.) Maxon; Koraltara; 2,400m (3142).

FAMILY: Thelypteridaceae (C. Presl) Pic.-Ser.

Ampelopteris prolifera (Retz.) Copel.;

Devinagar; 1,200 m (3209).

Christella arida (D. Don) Holtt.; Charma; 1,200 m (3144).

C. dentata (Forssk.) Brownsey et Jermy; Bungachhina; 1,600 m (2144).

Cyclogramma auriculata (J. Sm.) Ching; Chaupata; 1,500 m (3127).

Glaphyroidopsis erubescens (Wall. ex Hook.) Ching; Charma; 1,600 m (3183).

Stegnogramma pozoi (Lag.) K. Iwats.; Jingal; 1,400 m (2198).

FAMILY: Aspleniaceae Mett. ex Frank

Asplenium dalhousiae Hook.; Pukhrota; 1,600 m (2768).

A. trichomanes Linn.; Dharamghar; 2,000 m (2263).

A. varians Wall. ex Hook. et Grev.; Pukhrota; 1,600 m (2768).

FAMILY: Athyriaceae Ching

Athyrium anisopterum Christ; Lori; 2,000 m (3129).

A. pectinatum Presl; Kaprigao; 1,600 m (3116).

A. schimperi Moug. ex Fee; Dewalthal; 1,700 m (2959).

Deplazium esculentum (Retz.) Sw.; Rinbichhul; 1,500 m (2949).

D. frondosum (Clarke) Christ; Dewalthal; 1,700 m (2959).

Hypodematum crenatum (Forssk.) Kuhn.; Lawanthi; 1,600 m (2186).

FAMILY: Aspidiaceae Mett. ex Frank

Dryopteris caroli-hopei Fras.-Jenk.; Bajat; 1,650 m (2172).

D. chrysocoma (Christ) C. Chr.; Koraltora; 2,100 m (3140).

D. cochleata (Ham. ex D. Don) C. Chr.; Kushani; 1,600 m (2133).

D. juxtaposita Christ; Guoli; 1,800 m (3132).

Polystichum discretum (D. Don) J. Sm.; Suron; 1,900 m (2162).

P. mehrae Fras.-Jenk. et Khullar; Manichhina; 1,900 m (2747).

P. squarrosus (D. Don) Fee; Bajat; 1,700 m (2751).

Tectaria coadunata (J. Sm.) C. Chr.; Melapani; 1,500 m (2177).

FAMILY: Nephrolepidaceae (Ching) Pic.-Ser.

Nephrolepis auriculata (Linn.) Trimen; Sualekh; 1,600 m (2283).

Oleandra wallichii (Hook.) Presl; Lori; 2,100 m (3136).

FAMILY: Davalliaceae Mett. ex Ching

Araiostegia pseudocystopteris (Kze.) Copel.; Lori; 2,100 m (2137).

FAMILY: Blechnaceae (Presl) Copel.

Woodwardia unigemmata (Mak.) Nakai; Patarora; 1,500 m (3102).

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