

SOME RECENT ADDITIONS TO THE FERN FLORA OF THE WEST HIMALAYA-I

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Abstract: In the present paper, a list of recently recorded fern species, which were not reported earlier from the west Himalaya, is provided.

Key words: Fern Flora, Himalaya, Kumaun, Nomenclature.

INTRODUCTION

Khullar (1994 & 2000) published an account of all known ferns from the west Himalaya based on his personal collections coupled with previous collections and records with detailed taxonomic description, latest nomenclature, excellent illustration, places of collections, distribution India and the world. It is an excellent contribution towards the compilation of modern illustrated fern flora of India. But during the recent years, a number of workers have collected the ferns particularly in the eastern parts of Kumaun Himalaya and have reported a few species of ferns which were not recorded and described earlier from the west Himalaya (Fraser-Jenkins 1997; Kholia & Punetha 2003; Pande & Pande 2003; Pangtey 2005a,b,c; Fraser-Jenkins & Pangtey 2005; Pangtey *et al.* 2007).

In the present paper, a list of such recently recorded ferns in the west Himalaya is enumerated below, which includes 11 species belonging to 10 genera and 6 families, giving original citation, basionym, if any, and synonyms along with distribution in India and the world.

DESCRIPTION

Family: Polypodiaceae Bercht. & C.Presl

Colysis hemionitidea (Wall. ex Mett.) C. Presl, Epim. Bot.: 147 (1849); Ching, Bull. Fan Mem. Inst. Biol. Bot. 4: 320 (1933); Dixit, Census Indian Pterid.:36(1984); Satija & Bir Aspects Pl. Sci. 8: 83 (1985; Chandra, Ferns India: 397 (2000); Dixit & Kumar, Pterid. Uttaranchal:33(2002); Kholia & Punetha, Phytotax.3:119(2003). *Polypodium hemionitideum* Wall. ex Mett., Polyp.: 112 (1857); Wall., Numer. List no.: 284 (1828), *nom. nud.*; C.B.Clarke, Trans. Linn. Soc. Lond. II (Bot.) 1: 561 (1880). *Selliguea hemionitidea* C. Presl, Tent. Pterid.: 216. t. 9. f. 17 9 (1836). *Pleopeltis hemionitidea* (Wall. ex Mett.)T. Moore, Index Fil.: 463 (1862); Bedd., Ferns South. India: 61. t. 101 (1863); Ferns Brit. India: t. 182 (1866); Handb. Ferns Brit. India : 359. t. 202 (1883). *Gymnopteris fée* forma *anomala* Bedd., Ferns Brit. India: 274 (1868).

Distribution: India (Sikkim; Darjeeling; Meghalaya south India); Nepal; Bhutan; China; Vietnam; Bangladesh.

Lepisorus sublinearis (Baker ex Takeda) Ching, Bull. Fan Mem. Inst. Biol. Bot. 4: 78 (1933); Bir & Trikha, Amer. Fern J. 64: 53. f. 14-18 (1974); Dixit, Census Indian Pterid.: 43 (1984); Satija & Bir, Aspects Pl. Sci. 8: 30 (1985); Pangtey & Tewari, Indian J. For. 21:385(1998); Chandra, Ferns India: 384(2000); Dixit & Kumar, Pterid. Uttaranchal: 38 (2002); Pande & Pande, Ill. Fern Fl. Kumaun Him. 1:349(2003). *Polypodium sublineare* Baker ex Takeda, Notes Royal Bot. Gard. Edinb. 8: 276 (1915); C. Chr., Index Fil. Suppl.: 28 (1913-16); Contrb. U.S. Nat. Herb. 26: 320 (1931).

Distribution: India (Darjeeling; Sikkim; Arunachal Pradesh; Nagaland; Manipur; Meghalaya); Nepal; Bhutan; China (Yunnan); Vietnam; Thailand; Myanmar.

Family: Adiantaceae Ching

Adiantum myriosorum Baker, Kew Bull. Misc. Inf. 1898:230(1898). *Adiantum pedatum* L. var. *myriosorum* Christ, Bull. Herb. Boiss. 11:511(1903). *Adiantum pedatum* L. var. *glaucinum* Christ, Bull. Herb. Boiss. 6:957(1898). *Adiantum pedatum* L. var. *protrusum* Christ, Bull. Acad. Geogr.Bot. Mans.:110(1904). *Adiantum pedatum sensu auct. Ind., non L.* (1753); Dixit, Census Indian Pterid.: 75 (1984); Khullar, Ill. Fern Fl. West Him.1:299. t. 107 (1994); Chandra, Ferns India:72(2000); Dixit & Kumar, Pterid. Uttaranchal: 61 (2002); Pande & Pande, Ill. Fern Fl. Kumaun Him. 1:136(2003).

Distribution: India (Kashmir; Himachal Pradesh; Uttarakhand; Sikkim); Pakistan; China; Nepal.

Family: Pteridaceae Ching

Anogramma reichsteinii Fras.-Jenk., New Sp. Syndr. Indian Pterid. & Ferns Nepal:35 (1997). *Anogramma leptophylla sensu auct. Ind., non (L.)* Link, Fil. Sp.:137 (1984); Dhir, Biblioth. Pterid.1:42(1980); Dixit, Census Indian Pterid.:77(1984); Khullar, Ill. Fern Fl. West Him.1:307.t.109(1994); Chandra, Ferns India :76(2000);

Dixit & Kumar, Pterid. Uttaranchal: 62 (2002); Pande & Pande, Ill. Fern Fl. Kumaun Him. 1:138(2003).

Distribution: India (Himachal Pradesh; Uttarakhand).

Pteris pellucida C.Presl, Rel. Haenk. 1: 55 (1825); C.B.Clarke, Trans. Linn. Soc. Lond. II (Bot.) 1: 462 (1880); Bedd., Ferns South. India: t. 38 (1863); Handb. Ferns Brit. India: 106 (1883); Dixit, Census Indian Pterid.: 71 (1984); Chandra, Ferns India: 41 (2000); Dixit & Kumar, Pterid. Uttaranchal:57(2002); Pande & Pande, Ill. Fern Fl. Kumaun 1: 127 (2003); Pangtey *et al.*, J. Econ. Tax. Bot.31: 458 (2007).

Distribution: India (South India, Darjeeling, Sikkim, Nepal; Bhutan; Myanmar, Taiwan; Malaysia; Philippines; Malaysia

Pteris puberula Ching, Bull. Fan Mem. Inst. Biol. Bot. 11: 52 (1941); Ching & S. K. Wu in C.Y.Wu, Fl. Xizangica 1:71.t.18.f. 5-8 (1983); Pangtey, J. Bombay Nat. Hist. Soc. 102: 260 (2005). *Pteris nepalensis* H. Ito in Fl. East. Him.: 466. t. 26 (1966); K. Iwats., Univ. Mus. Univ. Tokyo Bull. 8: 177 (1975); Dixit, Census Indian Pterid.: 71 (1984); Fraser-Jenkins, New Sp. Syndr. Indian Pterid. & Ferns Nepal: 226 (1997); Chandra, Ferns India: 41(2000); Dixit & Kumar, Pterid. Uttaranchal: 57(2002).

Distribution: India (Uttarakhand; Sikkim; Darjeeling; East Himalaya); Nepal; China.

Family: Dennstaedtiaceae Pich. Serm.

Hypolepis polypodioides (Blume) Hook., Sp. Fil.:63(1852); Brownsey, Blumea 32:243. figs. 4A,5 (1987); Pangtey, Indian J. For. 28:98(2005). *Cheilanthes polypodioides* Blume, Enum. Pl. Jav.:139(1828).

Distribution: India (Uttarakhand; Darjeeling; Sikkim; Arunachal Pradesh; north-east India); Nepal; Bhutan; S.China; Taiwan; Myanmar; mainland of south-east Asia; Peninsular Malaysia; Java; Flores; Philippines (Luzon).

Family: Woodsiaceae (Diels in Engler & Prantl) Ching ex Herter

Athyrium nephrodioides (Baker) Christ, Bull. Soc. France 52, Mem.1:47(1905); Fraser-Jenkins & Pangtey, J. Bombay Nat. Hist.Soc. 102:374 (2005). *Asplenium nephrodioides* Baker, J. Bot.1887:170(1887). *Athyrium mehrae* Bir, Hedwigia 4: 165.t.52 (1962). *Asplenium tibeticum* Ching in C.Y.Wu, Fl. Xizangica 1:137(1983). *Athyrium stenopodium* Ching & S.K.Wu in C.Y.Wu, Fl.Xizangica 1: 137 (1983).

Distribution: India (Uttarakhand; N.Sikkim; Arunachal Pradesh); S.E.Tibet; S.W. & C.China; Myanmar.

Cornopteris quadripinnatifida M. Kato, Acta Phytotax. Geobot. 30:114. t. 11(1979); Pangtey, Indian J. For. 27:339(2004).

Distribution: India (Uttarakhand; Sikkim; Darjeeling); Nepal.

Deparia lancea (Thunb.) A.Murray, Fras.-Jenk., New Sp. Syndr. Indian Pterid. & Ferns Nepal.:101(1997); Chandra, Ferns India:146(2000). *Asplenium lanceum* Thunb. ex A. Murray, L., Syst. Veg. ed.14:933(1784), *non Diplazium lanceum* Bory(1833); Bedd., Handb. Ferns Brit. India:174 (1883). *Diplazium subsinuatum* (Wall. ex Hook.& Grev.) Tagawa, Col. Ill. Jap. Pterid. 203(1959); Dixit, Census Indian Pterid.: 134 (1984); Kholia & Punetha, Phytotax. 2:163 (2002). *Asplenium subsinuatum* Wall. ex Hook. & Grev., Icon. Fil.: t. 27 (1823). *Diplazium lanceum* (Thunb. ex A. Murray) C.Presl, Tent. Pterid.: 113(1836); Bedd., Handb. Ferns Brit. India: 174.t.84 (1883). *Triblemma lancea* (Thunb.ex A.Murray) Ching, Acta Bot. Sin.11:24 (1978).

Distribution: India (Uttarakhand; Eastern Himalaya); Nepal; China; Japan.

Matteuccia intermedia C.Chr., Bot. Gaz. (Chicago) 56:337(1913); Pangtey, J. Bombay Nat. Hist. Soc.102:375(2005).

Distribution: India (Uttarakhand; Sikkim); Nepal; W.China.

Family: Dryopteridaceae Ching

Dryopsis apiciflora (Wall. ex Mett.) Holttum & Edwards, Kew Bull. 41(189(1985); Chandra, Ferns India:217(2000). *Aspidium apiciflorum* Wall. ex Mett., Frangatt. IV: 54 (1858). *Lastrea apiciflora* (Wall. ex Mett.) Bedd., Ferns Brit.India: t. 40 (1865). *Aspidium apiciflorum* Wall., Numer. List no.:345 (1828), *nom. nud.* *Lastrea apiciflora* C.Presl, Tent. Pterid.:76 (1836), *nom. nud.* *Nephrodium apiciflorum* (Wall. ex Mett.) Hook., Sp. Fil. 4:112.t.248 (1862); C.B.Clarke, Trans. Linn. Soc. Lond. II (Bot.) 1: 518 (1880). *Lastrea filix-mas* (L.) C.Presl var. *parallelogramme* subvar. *apiciflora*(Wall. ex Mett.) Bedd., Handb. Ferns Brit. India: 249 (1883). *Dryopteris apiciflora* (Wall.ex Mett.) Kunze, Rev. Gen. Pl. 2:812(1891); Pande & Pande, Ill. Fern Fl. Kumaun Him.1:344 (2003). *Ctenitis apiciflora* (Wall. ex Mett.) Ching, Bull. Fan Mem. Inst. Biol. (Bot.) 8:284 (1938); Dixit, Census Indian Pterid.:137(1984).

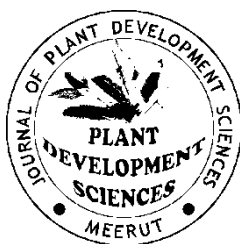
Distribution: India (Uttarakhand; Sikkim; Assam); Nepal; China; Myanmar; Taiwan.

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REFERENCES

- Chandra, S.** (2000). *The Ferns of India* (Enumeration, Synonyms & Distribution). International Book Distributors, Dehra Dun.
- Dixit, R.D.** (1984). *A Census of Indian Pteridophytes*. Botanical Survey of India, Howrah.
- Dixit, R.D. and Kumar, R.** (2002). *Pteridophytes of Uttarakhand (A Check List)*. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- Kholia, B.S. and Punetha, N.** (2002). *Diplazium subsinuatum* (Wall. ex Hook. & Grev.) Tagawa in Central Himalaya. *Phytotaxonomy* 2:163-165.
- Fraser-Jenkins, C.R.** (1997). *New Species Syndrome in Indian Pteridology and Ferns of Nepal*. International Book Distributors, Dehra Dun.
- Fraser-Jenkins, C.R. and Pangtey, Y.P.S.** (2005). *Athyrium nephrodioides* (Baker) Christ (Athyriaceae: Pteridophyta): An addition to the fern flora of India. *J. Bombay Nat. Hist. Soc.* 102: 374.
- Kholia, B.S. and Punetha, N.** (2003). The genus *Colysis* Presl in Western Himalaya. *Phytotaxonomy* 3: 119-123.
- Khullar, S.P.** (1994). *An Illustrated Fern Flora of the West Himalaya*. Vol.I. International Book Distributors, Dehra Dun.
- Khullar, S.P.** (2000). *An Illustrated Fern Flora of the West Himalaya* Vol.II. International Book Distributors, Dehra Dun.
- Pande, H.C. and Pande, P.C.** (2003). *An Illustrated Fern Flora of the Kumaun Himalaya*. Vols. 1 & II. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- Pangtey, Y.P.S. and Tewari, Lalit M.** (1998). *Lepisorus sublinearis* ex Takeda) Ching (Polypodiaceae): An interesting addition to the fern flora of North-Western Himalaya. *Indian J. For.* 21:385-386.
- Pangtey, Y.P.S.** (2004). *Cornopteris quadripinnatifida* M.Kato (Athriaceae: Pteridophyta): A new record for the West Himalaya. *Indian J. For.* 27:339-340.
- Pangtey, Y.P.S.** (2005a). Some unrecorded species of ferns and fern-allies in the Pteridophytes of Uttarakhand. *Indian J. For.* 28:97-200.
- Pangtey, Y.P.S.** (2005b). A note on the collection of *Pteris puberula* Ching (Pteridaceae: Pteridophyta) in the North-western Himalaya from Kumaun hills. *J. Bombay Nat. Hist. Soc.* 102:260-261.
- Pangtey, Y.P.S.** (2005c). *Matteuccia intermedia* C.Chr. (Onocleaceae: Pteridophyta): An addition to the fern flora of India. *J. Bombay Nat. Hist. Soc.* 102:375-376.
- Pangtey, Y.P.S.; Tewari, Lalit M.; Upreti, Kanchan and Martolia, Anita** (2007). *Pteris pellucida* Presl (Pteridaceae: Pteridophyta)-A rare taxon in Kumaun Himalaya. *J. Econ. Taxon. Bot.* 31:458-459.



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