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# TAXONOMIC OBSERVATIONS ON *THELYPTEROID FERNS* FROM PITHORAGARH DISTRICT (N.W. HIMALAYAS)

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A detailed taxonomic account of the members of Thelypteridaceae of Pithoragarh district is given. Eleven species are described. *Ampelopteris, Glaphyropteridopsis, Pronephrium, Pseudocyclosorus,* and *Pseudophegopteris* are represented by one species each whereas *Christella* is represented by five species including a new species *C. multiauriculata* Punetha.

Key words: *Christella multiauriculata, C. Parasitila* ferns, taronomy, Thelypteridaceae

In continuation to writer's work on the Ferns of Pithoragarh district of Kamaon regions of North West Himalayas (Punetha, 1985; Punetha *et al.*, 1985), the taxonomic distinction of members of seven genera of Thelypteridaceae makes the contents of this communication. In the classical literatures of Clarke (1880), Beddome (1883, 1892) and Hope (1899-1904), the Indian members of family Thelypteridaceae have been described as the species of either *Lastrea, Meniscium, Nephrodium,* or *Phegopteris.* However, Khullar *et al.* (1983) have given a detailed taxonomic account of the family from the Western Himalaya. A total of eleven species are described including a new species, *Christella multiauriculata.* The speciemens are deposited in the herbarium of Botany department, Government P.G. College, Pithoragarh.

## TAXONOMIC ACCOUNT

*Key to the genera :*

1. Fronds of indefinite growth; proliferating axillary buds present at the axils of the pinnae
   1. *Ampelopteris*
1. Fronds of definite growth; proliferating buds absent.
2. Fronds simply pinnate
3. At least one pair of veins anastimosing
4. Several pairs of veins anastomosing; pinnae subentire or slightly lobed; basal pinnae not reduced
   2. *Pronephrium*
4. 1 or 2 pairs of veins anastomosing; pinnae deeply lobed; basal pinnae reduced in almost all species
   3. *Christella*
3. Veins all free
5. Hooked hairs present on lower surface of costa and on sporangia
   4. *Cyclogramma*
5. Hooked hairs lacking
6. Basal pinnae not reduced
   5. *Glaphyropteridopsis*
6. Basal pinnae, several pairs much reduced
   6. *Pseudocyclosorus*

1 2. Foronds bipinnate 7. *Pseudophegopteris*

*Ampelopteris* : Kunze, Bot. Zeit. **6** 114 1848, Linnaea **24** 251, 1851, Copel Gen. Fil 143 1947; Holttum Rev Fl Mal **2** 298, 1954, Blumea **19** 25, 1971; Ching Acta Phtotax Sin **8** 330 1963, Khullar *et al* Nova Hedwigia **38** 620 1983.

The monotypic thelypteroid fern is widely distributed in the warmer parts of the old world. Presence of characteristic proliferating axillary buds in the axils of almost all the pinnae easily differentiate this fern from other members of the family.

1. *A. prolifera* (Retz.) Copel. Gen. Fil.: 114, 1947, Khullar *et al* Nova Hedwigia **38:** 621, 1983.

   *Hemionites prolifera* Retz Obs Bot **6:** 36, 1791.

   *Goniopteris prolifera* (Retz) Presl, Tent. Pterid: 183, 1836; Bedd Ferns S India t 172 1864, Handb Ferns Brit India 296, 1883.

   *Ampelopteris elegans* Kunze, Bot. Zeit. **6:** 114, 1848.

   *Ampelopteris firma* Kunze, Linnaea **24:** 251, 1851.

Rhizome wide creeping, 8 mm in diameter, scaly at apex, scales dark brown, ovate, margins dentate, stipe 10–30 cm or more long, stramineous, sparsely scaly when young, scales light brown, deciduous, lanceolate, entire; unicellular forked hairs and scales present on rachis, lamina unipinnate, 50–80 cm or more long, scrambling, proliferating vegetative buds present, pinnae numerous, sub-coriaceous, 5–10 cm long, 0.5–1 cm wide, alternate or sub-opposite, subsessile, oblong-lanceolate, base truncate, apex acute, margins serrate or wavy; veins 7–10 pairs, 4–6 basal pairs fused in zig-zag manner; acicular hairs present on lower surface of veins and upper surface of pinnae, lower surface of pinnae sparsely scaly, scales small; sori exindusiate, round; spores light brown, perisporiate, perispore finely spinulose, 25x40 µm.

A very rare fern of the region but locally common along a hill stream near Chalthi (800 m).

*Prosaptia* Presl Epim Bot.: 258, 1851 *emend* Holttum, Blumea **19**: 34, 1971 Ching, Acta Phytotax Sin. **16**: 13, 1978; Khullar *et al.* Nova Hedwigia **38**: 643, 1983.

A genus of about 61 species (Holttum, 1972) is widely distributed in southern hemisphere and is characterised by anastomosing of several pairs of veins and the basal pair of pinnae are not reduced. Three species are known to occur in W. Himalaya (cf Khullar *et al.*, 1983) of these *P. nudatum* is found in Pithoragarh district.

1. *P. nudatum* (Roxb.) Holttum, Blumea **20**: 111, 1972; Khullar *et al.* Nova Hedwigia **38**: 645, 1983.

   *Polypodium nudatum* Roxb., Calc. Journ. Nat. Hist. **4**: 491, 1844.

   *Polypodium multilineatum* Wall. ex Hook., Spec. Fil. **5** 11, 1863; Clarke, Trans. Linn. Soc. 2 Bot. **1** 547, 1880.

   *Nephrodium moulmeinse* Bedd. Ferns Brit. India Suppl. 18: 1876.

   *Thelypteris multilineata* (Wall ex Hook) Morton Amer. Fern Journ. **49** 113: 1959.

Rhizome creeping, 4 mm in diameter, sparsely scaly at apex, scales light brown, ovate, 4x2 mm, stipe 15 cm long, stramineous, glabrous; lamina, to 80 cm long, unipinnate, coriaceous, glabrous; 8–10 pairs of lateral pinnae, basal pair not reduced, largest pinna 20 cm long, 3.5 cm broad, pinnae alternate or sub-opposite, base cuneate, margins slightly lobed, apex acuminate; veins 15–20 pairs, except upper 2–3 all of them anastomosing and form an excurrent veinlet; sori medial, round, small; indusia reniform or round, sparsely hairy; spores brown, smooth walled, 35 x 24 µm (Fig. 1).


Fig. 1:

*Christella* (A.Le··.) *emend.* Holttum Taxon **20** 533 1971 Blumea **19** 43 1971 Kew Bull **31** 293 1976 Khullar *et al* Nova Hedwigia **38** 622 1983.

*Christella* is a large genus of about 51 species (Holttum, 1976) and is widely distributed in the tropics of the old World. Ching (1978), however, did not recognise *Christella* as a distinct genus, he retained these ferns within *Cyclosorus* Link. The genus is characterised by the presence of basal 2-5 pairs of lateral reduced pinnae, 1, 2 pairs of veins anastomosing and presence of erect, slender or capitate hairs anastomosing and presence of erect, slender or capitate hairs on the under surface of costae. Seven species of this genus have been reported from Meghalaya (Baishya & Rao, 1982). Khullar *et al* (1983) reported six species from W. Himalayas of which four species are found in this area in addition to *C. multiauriculata.*

*Key to the species :*

1. Rihizome short-creeping; hairs on lower surface of segments dense
2. Acroscopic bases of at least lower 10 pairs of segments auricled; capitate hairs present on both surfaces of costae

1.*C.multiauriculata*

2. Acroscopic bases of segments not auricled; capitate hairs absent

2. *C.dentata*

1. Rhizome long-creeping; hairs on lower surface of segments sparse
3. Basal pair of pinnae reduced
4. Segments coriaceous; lobes 3/4 towards costa; sinus membrane long

3. *C.arieda*

4. Segments herbaceous; lobes 1/4 towards costa; sinus membrane short

4. *C.appendiculata*

3. Basal pair of pinnae not reduced

5. *C.parasitica*

1. *C.multiauriculata* N. Punetha, Sp. Nov.

*Christella dentata* (Forssk.) Brownsey & Jermy affinis, ab ea differt : pinnis inferioribus multijugatis auriculatis, pagina pinnarum utroque inter venas pilis brevibus capitatis multose praedita.

Caudex short-creeping, c. 1 cm diameter; stipe to 15 cm long, straineours when dried, its basal scales to 5 x 2 mm, bearing short acicular hairs; pinnae c 25 pairs of which the lower 10 pairs bear auricles at their acroscopic bases, the auricles crenate, and the basal 2-4 pairs are gradually reduced, the lowest 2 cm long; largest pinnae 12 x 2 cm, lobed about half-way towards the costa; veins 8-9 pairs in each lobe, 1.5 pairs anastomosing and one vein ending beside the sinus membrane; slender acicular hairs to 0.5 mm long abundant on lower surface of costae, shorter ones present on veins; short erect acicular and capitate hairs abundant between veins on both surfaces; sori medial, indusia thin, hairy; spores dark brown, 47 x 28 µm (Figs. 3-7).

Type : Pithoragarh, near Government P.G. College, in exposed places at 1900 m alt., coll. N. Punetha, 726, Sept. 1985 (K).

2. *C.dentata* (Forssk.) Brownsey ex Jermy Brit. Fern Gaz. **10** 338, 1973; Holttum, Journ. South Afr Bot. **40** 143, 1974; Kew Bull. **31** 314, 1976; Khullar *et al;* Nova Hedwigia **38** 626, 1983.

*Polypodium dentatum* Forssk. Fl Aegpt Arab 185 1775.

*Dryopteris dentata* (Forssk.) C. Chr., Vid. Selsk. Skr. VIII **6:** 24, 1920.

*Thelypteris dentata* (Forssk) E. St John in Amer Fern Journ. **26:** 44, 1936.

*Cyclosorus dentatus* (Forssk.) Ching, Bull. Fan Mem. Inst. Biol. Bot. **8:** 206, 1938.

*Nephrodium molle* (Swartz.) R. Br. Prodr. Fl. N. Holl.: 149 1801; Hook., Sp. Fil. **4:** 67, 1862 *pro parte;* Bedd; Handb, Ferns Brit. Indian. 277, 1883 *pro parte* Handb. Ferns Brit. India. Suppl. 76, 1892 *pro parte.*

*Cyclosorus subpubescens sensu* Holttum, Rev. Fl. Mal. **2** 273, 1954.

Rhizome short-creeping, 2-4 mm in diameter; scales linear-lanceolate, 10x15 mm, brown; stipe to 30 cm long, wiry, stramineous when dry; fronds large to one meter long; 25-30 pairs of lateral pinnae,

lower 4-5 pairs gradually reduced and distant; acro-scopic bases of reduced pinnae auricled, largest pinna 16x2.5 cm, acuminate, 2/3 lobed; lobes oblique with round apex; veins 10 pairs, lower 1.5 anastomosing and reaching to sinus; lower surface of costae and costules bearing slender, 0.2 mm long hairs; sori medial; indusia short-hairy; spores light brown, granulosee, 40x26 µm.

A very common fern of the area, it is very variable in frond form.

3. *C.arida* (D.Don) Holttum, in Nayara & Kaur, Companion to Beddome 206 1974; Kew Bull **31**: 320, 1976; Khullar *et al* Nova Hedwigia **34** 624, 1983.

*Aspidium aridum* D. Don Prodr Fl. Nepal **4**: 1825.

*Nephrodium aridum* (D. Don) J Smith in Hook. Journ. Bot. **4** 188, 1841; Bedd. Ferns Brit. India 297, 1868; Handb. Ferns Brit. India. 272, 1883; Clarke Trans. Linn. Soc. **2** Bot. **1** 531, 1880.

*Cyclosorus aridus* (D. Don) Ching Bull. Fan. Mem. Inst. Biol. Bot. **8** 194, 1938.

*Thelypteris arida* Morton, Amer. Fern Journ. **49** 113, 1959.

Rhizome long-creeping, to 5 mm in diameter; scales light brown, linear, 6x0.5 mm; stipe erect, to 40 cm long, naked above, scaly at base; frond large up to 160 cm long, 30 cm broad; 30-36 pairs of lateral pinnae, lower 2, 3 or more reduced and distant, lowest 1-2 cm long, lateral pinnae up to 15 cm long, 1.5 cm wide, acuminate, lobed 1/4 towards costa, coriaceous; costules oblique with blunt apex; 9 pairs of veins, basal 1.5 pair anastomosing; lower surface of costae bear stiff, erect hairs 0.2 mm long, erect hairs present on veins; sori medial; indusia hairy; spores light brown, perine wrinkled, 42x20 µm.

Fairly common near Bisar, Lohaghat and Nainipatal.

4. *C. appendiculata* (Presl) Holttum Kew Bull. **31** 311, 1976; Khullar *et al*. Nova Hedwigia **38**: 624, 1983.

*Nephrodium appendiculatum* presl. Epim. Bot. 47, 1951.

*Nephrodium extensum* var. *microsorum* Clarke, Trans. Linn. Soc. 2 Bot. **1**: 530, 1880.

*N.molliusculum* Bedd., Handb. Ferns Brit. India Suppl. 68, 1892, Hope, Journ. Bombay Nat. Hist. Soc. **14**: 744, 1903.

*Dryopteris molliscula* (Bedd.) C. Chr. Ind. Fil. 278, 1905 excl. syn. *Aspidium mollisculum* Khun. Contr. U. S. Nat. Herb. **26**: 276, 1931.

*Cyclosorus mollisculus* (Bedd.) K Iwats. in Hara, Fl. E. Himal. 484, 1966.

*Nephrodium extensum* var *late-repens* Clarke, Trans. Linn. Soc. 2 Bot. **1**: 530, 1880.

Rhizome long-creeping, 4 mm in diameter, scaly; scales light brown, lanceolate with acuminate apex, 4x0.8 mm; stipe 32 cm long, slender, stramineous, sparsely hairy; fronds 60 cm long, 12 cm wide, herbaceous; 20 pairs of lateral pinnae, basal pair slightly reduced, pinnae 6x2 cm, apex acuminate, 1/4 lobed to costa; lobes oblique, slightly falcate, 10x2 mm; 7-9 pairs of veins, basal 1.5 anastomosing; pale slender hairs present on lower surface of segments; hairs 1 mm long; sparse; sori medial, more towards margins; indusia small, hairy; sporess pale brown, perine granulose, 26x24 µm.

A rare fern, only ones collected from Nainipatal-Lachher region.

5. *C parasitica* (L) Lev, Fl. Kouy-tcheou 475, 1915; Holttum. Kew Bull. **31**: 309, 1976; Khullar *et al*, Nova Hedwigia **38**: 629, 1983.

*Polypodium parasiticum* Linn Sp. Pl. 1090, 1753.

*Nephrodium parasiticum* (L) Desv. Mem. Soc. Linn. Paris **6**: 260, 1827; Clarke, Trans. Linn. Soc. 2 Bot. **1**: 533, 1880 *pro parte*.

*Cyclosorus parasiticus* (L) Holttum. Rev. Fl. Mal. **2**: 281, 1954.

*Nephrodium molle* Hook., Sp. Fil. **4**: 67, 1862 *pro parte* Bedd., Ferns Southern India 84, 1863; Handb. Ferns Brit. India 277, 1883.

Rihzome long-creeping, 4 mm in diameter, scaly; scales light brown, linear, 5.5 x 0.5 mm; stip 30-35 cm long, hairy; fronds 40-45 cm long, 30-

32 cm broad 15-20 pairs of lateral pinnae, basal pair deflexed, lateral pinnae 15-16 cm long, 2 cm wide, short-acuminate, lobed, 2/3 towards costa; lobes oblique; 8-10 pairs of veins, basal pair anastomosing; hairs 1 mm long; sori medial; indusia sparsely hairy; spores light brown, perine wrinkled, 40x30 µm.

Although Beddome, Clarke and Hope have reported its presence in the Western Himalayas, it has not been collected by the recent workers from the western section of the Indo-Himalayas and is primarily an Eastern Himalayan element. Khullar *et al.* (1983), though believe its occurrence in the Western Himalayas, their description is based on an E. Himalayas specimen. I have collected this fern from the inner Himalayan ranges of the district (Thal, 900 m) where it is extremely rare.

*Cyclogramma* Tagawa, Acta Phytotax. Geobot. **7:** 53, 1938; Ching, Acta Phytotax. Sin. **8:** 316, 1963; Holttum, Blumea **19:** 28, 1971; Khullar *et al.* Nova Hedwigia **38:** 631, 1983.

*Cyclogramma* is a small genus of about 7-8 species restricted in distribution to North India, South China, Formosa and Luzon (Holttum, 1971). This genus is easily distinguishable from other members of the family by the presence of prominent hooked hairs on different parts of sporophyte. Only one species occurs in Pithoragarh district.

1. *C.auriculata* (J. Sm.) Ching, Acta Phytotax. Sin. **8:** 317, 1963; Khullar *et al.* Nova Hedwigia **38:** 632, 1983.

   *Phegopteris auriculata* J. Sm. Hist. Fil. 233, 1875; Bedd., Handb. Ferns Brit. India 290, 1883.

   *Polypodium auriculatum* Wall. List no. 314, 1828; Bedd. Ferns Southern India 103 1866; Clarke Trans. Linn. Soc. 2 Bot **1:** 543, 1880; Hope Journ.

   *Cyclogramma himalayensis* Tagawa, Acta Phytotax, Geobot. **7:** 55, 1938.

   *Phegopteris subvillosa* Moore, Index Fil. 308, 1861 *nom nud.*

   *Thelypteris subvillosa* (Moore) Ching, Bull. Fan. Mem. Inst. Biol. Bot. **6:** 279, 1936.

Rhizome long-creeping, ascending, 5-6 mm in diameter; scales black brown, linear-lanceolate, 8x1 mm; stipe, to 26 cm long, brown, hairy; hairs acicular, unicellular, white, hooked; lamina unipinnate, up to 65 cm long, 28 cm wide; 18-20 pairs of lateral pinnae, basal 1, 2 slightly reduced, largest 14x2 cm, alternate or sub-opposite, deeply lobed; lobes 1 cm long, 0.6 cm broad, sub-falcate entire, apex round, herbaceous, pustular when dry, densely hairy; hairs hooked or straight; veins 10 pairs; sori exindusiate, round, near to costa; spores brown-yellow. verrucate, 66x50 µm.

Locally very common at Champawat, Dhaj and Didihat.

*Glaphyropteridopsis* Ching, Acta Phytotax. Sin. **8:** 320, 1963 Holttum, Blumea **19:** 31, 1971; Khullar *et al.* Nova Hedwigia **38:** 633, 1983.

A small genus of four species (Holttum, 1971) with very restricted distribution in N.E. India to South China. It is represented by only one species in Pithoragarh district.

1. *G.erubescens* (Wall. ex Hook.) Ching, Acta Phytotax. Sin. **8:** 320, 1963; Khullar *et al.* Nova Hedwigia **38:** 634, 1983.

   *Polypodium erubsescens* Wall. ex Hook. Sp. Fil. **6:** 236, 1862; Clarke, in Trans. Linn. Soc. 2 Bot. **1:** 543, 1880; Hope in Journ. Bombay Nat. Hist. Soc. **15:** 78, 1903.

   *Phegopteris erubescens* Bedd, in Handbook Ferns Brit, India: 289, 1883.

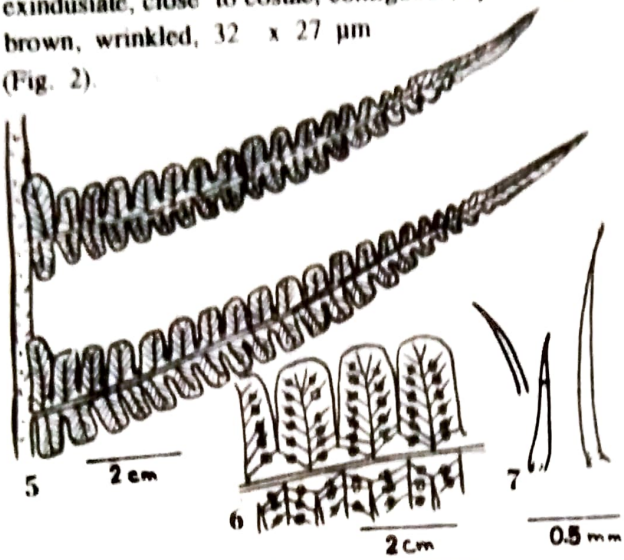
   *Dryopteris erubescens* C. Chr. Index Fil. **1:** 263, 1905.

   *Thelypteris erubescens* (Wall. ex Hook.) Ching, Bull. Fan. Mem. Inst. Biol. Bot. **6:** 293, 1936.

   *Lastera erubescens* Copel., Gen. Fil.: 138; 1947.

Rhizome short-erect, 6-7 mm in diameter; scales orange, linear-lanceolate, 5 x 3 mm; stipe long to 50 cm, 7-10 mm thick, grooved adaxially, pink, glabrous upward, scaly at base; limina unipinnate, very large, up to 1.5 meter long, 35 cm wide; 25 - 30 pairs of lateral pinnae, lower ones not reduced but deflexed, 18 cm long, 2.5 cm wide, opposite or subopposite, sessile, deeply lobed; lobes 1.2 cm long, 0.4 cm wide at base, coriaceous, glabrous or sparsely hairy on under surface, narrow, oblong,

marigins entire, subacute; 8-10 pairs of veins; sori exindusiate, close to costae, contiguous; spores light brown, wrinkled, 32 x 27 µm (Fig. 2).




Fairly common along water streams.

*Pseudocyclosorus* Ching, Acta Phytotax. Sin. **8:** 322, 1963 emend. Holttum. Journ. South Afr. Bot. **40:** 137, 1974; Holttum & Grimes Kew Bull. **34:** 499, 1980.

A genus of about 12 species is characterised by the presence of basal much reduced lateral pinnae which are sometimes represented by lobes only. In Western Himalayas it is represented by two species (Khullar *et al.*, 1983) of which one species is found in this area.

1. *P.canus* (Baker) Hottum & Grimes, Kew Bull. **34:** 509, 1980; Khullar *et al.* Nova Hedwigia **38:** 1983.

   *Nephrodium canum* Baker, Sys. Fil.: 267, 1867; Clarke, Trans. Linn. Soc. 2 Bot **1:** 515, 1880.

   *Dryoteris cana* (Baker) Kunze, Rev. Gen. Pl. **2:** 812, 1891.

   *Aspidium molliusculum* Kuhn, Bot. Zeit. **26:** 41, 1868.

   *Lastrea cana* (Wall.) Bedd. Ferns Brit. India t 307, 1869.

   *Lastrea cana sensu* Bedd., Handb. Ferns Brit. India 238, 1883.

   *Aspidium eburneum* Wall. Cat. 389 *nom. nud.*

   *Nephrodium repens* Hope, Journ. Bombay Nat. Hist. Soc. **12:** 535, 1899.

   *Thelypteris repens* (Hope) Ching, Bull. Fan. Mem. Inst. Biol. Bot. **6:** 304, 1936.

   *Pseudocyclosorus repens* (Hope) Ching, Acta Phytotax. Sin. **8:** 324, 1963.

   Rhizome sub-erect, ascending, thick, c 1 cm in diameter; scales brown, lanceolate, 5x2 mm; stipe 23 cm long, green on stramineous when dry, glabrous; lamina unipinnate, large to 1 meter long, 28 cm broad; 30 pairs of lateral pinnae, basal 10 pairs much reduced, sometimes represented by lobes only, smallest 4 mm long, larger up to 14 cm long, 1.8 cm broad, alternate, sessile, lanceolate, apex acuminate, deeply lobed nearly to the costa; lobes numerous, 9x2 mm, slightly oblique, entire, apex blunt, under surface hairy, hairs small; veins 6-8 pairs, sori medial, small, indusiate; indusia thin, reniform, sparsely hairy; spores dark brown, verrucate, 36x31 µm.

   Very common at shady humid places and along water streams.

*Pseudophegopteris* Ching, Acta Phytotax. Sin. **8:** 313, 1963: Holttum, Blumea **17:** 12, 1969 Khullar *et al.*, Nova Hedwigia **38:** 653, 1983.

A genus of about 12 species (Holttum, 1969) is characterised by its bipinnatified or bipinnate lamina. Although Holttum (1969) has given a detailed taxonomic account of 20 species of this genus, Pichi-Sermolli (1970) does not recognise this genus and he has merged it in *Macrothelypteris*. Three species of this genus are known to occur in W. Himalaya (Khullar *et al.*, 1983) of which only one occurs in this area.

1. *P.pyrrhorhachis* (Kunze) Ching, Acta Phytotax. Sin. **8:** 315, 1963; Holttum, Blumea **17:** 24, 1969; Khullar *et al.* Nova Hedwigia **38:** 653, 1983.

   *Polypodium pyrrhorhachis* Kunze, Linnaea, **24:** 257, 1851.

   *Lastrea pyrrhorhachis* (Kunse) Copel, Gen. Fil. 139, 1947.

   *Macrothelypteris pyrrhorhachis* (Kunze) Pic. Ser., Webbia **24:** 716, 1970.

   *Polypodium distans* D. Don, Prod. Fl. Nepal 2. 1825 non Kaulf.

*Phegopteris distans* (D. Don.) Mett. Abh. Senchenb. Natur. Ges. **2:** *Phegopteris* and *Aspidium* Reprint, 16, 1858; Bedd. Handb. Ferns Brit. India 292, 1883.

*Nephrodium microstegia* Hook. Sp. Fil. 4, 1862.

*Lastrea microstegia* Bedd. Ferns Brit. India. t. 39, 1865.

*Polypodium paludosum* (non Bl.) Bedd. Ferns Southern India t 168, 1863.

*Polypodium distans* var. *adnatum* Clarke Trans. Linn. Soc. 2 Bot. **1:** 544, 1880.

*Polypodium late-repens* Trotter ex Hope, in Journ, Bombay Nat. Hist. Soc. **12:** 628, 1899.

*Polypodium brunneum* Wall. Cat. no. 333, 1829 *nom. nud.*

*Dryopteris brunnea* Christensen, Index Fil. **1:** 255, 1905 *nom nud.*

*Thelypteris brunnea* Ching, Bull. Fan. Mem. Inst. Biol. Bot. **6:** 269, 1963 *nom nud.*

Rhizome sub-erect, 6 mm in diameter, scales pink yellow, linear-lanceolate, apex acute, margines hairy, 6-0.8 mm; stipe 25 cm long, dark purplish and naked upward and brown and sparsely scaly at base; lamina 45-50 cm long, 13 cm broad, narrowed towards both ends; 20-25 pairs of lateral pinnae, 2-3 basal apirs reduced, pinnae oblique, 10-12 cm long, crenately lobed or pinnatified half way to costule; veins forked; sori on acroscopic branch of the forked vein, terminal on vein, exindusiate, round; spores light brown or hyaline, 44x36 µm.

Locally common at Lohaghat.

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