

# A collection of ferns from Eastern Nepal

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## A Collection of ferns from Eastern Nepal

M. L. BANERJI

### RÉSUMÉ

L'auteur fait un bref tour d'horizon du travail accompli sur les Ptéridophytes du Népal. Il présente ensuite une énumération des espèces qu'il a lui-même récoltées. Des 84 espèces citées, 24 sont nouvelles pour le Népal.

### SUMMARY

The author reviews briefly the work done so far on the nepalese pteridophyte flora. He then enumerates those which he has himself collected in the area. 84 species are listed of which 24 are new for Nepal.

### ZUSAMMENFASSUNG

Der Autor gibt eine Übersicht über die bisher geleisteten Untersuchungen über die Pteridophyten Nepals. Darüber hinaus gibt er eine Liste der von ihm gesammelten Arten. Von den 84 zitierten Arten sind 24 neu für Nepal.

Thanks to the work of many pteridologists the flora of the ferns and their allies is now fairly well known for a certain number of areas of the Himalayas. Detailed studies in relatively restricted areas of the Western Himalayas have been undertaken since 1930; by Mehra (1939) and Stewart (1942) in Mussooree, by Stewart (1945, 1951 & 1957) in Kashmir and Pahalgam, by Loyal & Verma (1960) in Nainital and by Bir (1963) in Simla. Recent studies of the Eastern Himalayas were carried out by Kachroo (1953) by Panigrahi (1960) and by Mehra & Bir (1964). However, that portion of the Himalayas lying between 80° and 88° East. The Kingdom of Nepal, has received relatively little attention. This was due primarily to the fact that the country was closed to foreigners

until recently and secondly that travel and transportation presented many difficulties. Since 1948, however, governmental policy having changed, travellers, mountaineers and others have been allowed to travel within Nepal and this has, thus, led to extensive botanical explorations within the country.

In his *Prodromus florum nepalensis* of 1825 D. Don described some ferns from Nepal. Later, Burkill in his "Notes from a journey to Nepal" (1910) gave some information about the ferns of the country. Since 1952, amongst the papers published on the pteridophyta of Nepal, mention must be made of Raizada & Vaid (1952), Alston & Bonner (1956) and Nishida (1966) who have worked out sizeable collections. Further more, some ferns have been listed by Parker (1932) and Tagawa in Kihara's *Fauna and Flora of the Nepal Himalayas* (1955) dealt with the pteridophyta collected by the Japanese expeditions of 1952-1953.

It may be mentioned that practically all those who collected plants from Nepal earlier had paid little attention to the ferns and that, despite the recent interest in that group, our present knowledge is still meagre.

A synoptic list of the ferns and fern-allies is as follows:

<i>Author</i>	<i>Ferns</i>	<i>Fern-allies</i>
Burkill	12	3
Parker	7	—
Raizada & Vaid	46	4
Alston & Bonner	110	15
Tagawa	31	3
Nishida	104	12

The present author, who has been studying the nepalese angiosperm flora, has also, on occasion, collected ferns. In a previous publication (Banerji 1961) a list of the *Ophioglossales* from Nepal was compiled. A variety of *Osmunda regalis* occurring in Nepal was also reported (Banerji 1965). In the present paper, 84 species of ferns are listed, 24 of these which had not been collected before are indicated by an asterisk. Specimens of *Lycopodium* and *Selaginella* await determination.

The pronunciation and, in consequence, the orthography of place names vary considerably. Approximate geographical bearings are therefore given for each locality thus enabling one to determine its position on the outline map (fig. 1).

The fern families are grouped in accordance with the schema proposed by Mehra (1961). In view of the difficulties involved in the synonymy of fern taxa an attempt has been made to bring the nomenclature up-to-date. As so little is known on the Nepalese fern flora it is sincerely hoped that the following enumeration will be of interest to pteridologists. The author's specimens are deposited in the following herbaria: Arnold Arboretum; University of South Florida; The Blatter Herbarium, Bombay; the author's private herbarium. All

unicates are in the author's personal herbarium. Species reported by previous authors are indicated by appropriate abbreviations.<sup>1</sup>

Thanks are offered to the staff of the Central National Herbarium, Calcutta and, in particular, to Janab Ijad Bux for the help rendered and in dealing with many of my enquiries.

<sup>1</sup> Abbreviations: AB = Alston & Bonner; B = Banerji; Bu = Burkill; N = Nishida; P = Parker; RV = Raizada & Vaid; T = Tagawa.

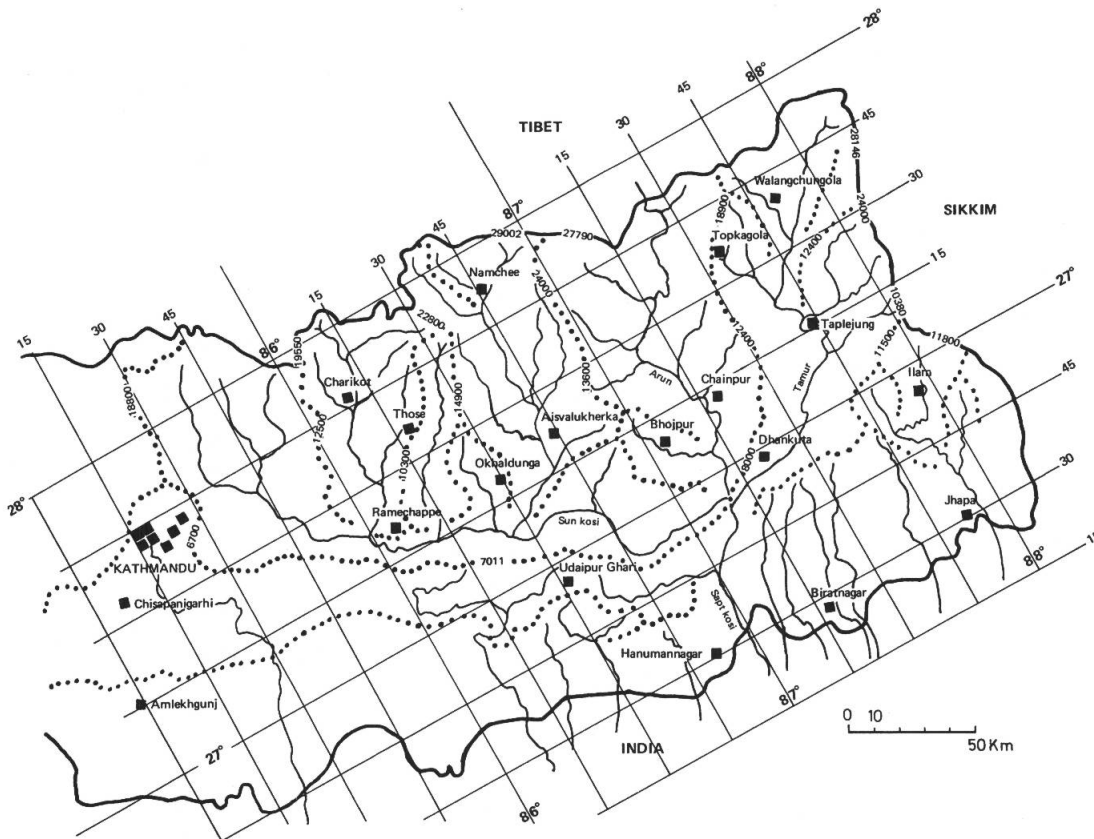


Fig. 1. – Map of Nepal.

*Osmundaceae*

**Osmunda claytoniana** L. var. **vestita** (Wall.) Milde  
= *Osmunda claytonianum* (L.) Tagawa var. *vestitum* (Wall.) Tagawa

Khera to Those, 27°35', 86°15', c. 2435 m, *B* 672; Those to Bhitrikhani, 27°32', 86°15', c. 2895 m, *B* 684; Charikot to Kalinchok, 27°40', 86°40', c. 3048 m, *B* s.n. (AB; N; T).

**O. regalis** L. var. **spectabilis** (Willd.) A. Gray

Pheda to Charikot, 27°40', 86°10', c. 1980 m, growing in shade, *B* 622 (AB; N).

*Plagiogyriaceae*

**Plagiogyria communis** Ching  
= *Lomaria pycnophylla* auct., non Kunze; *Plagiogyria pycnophylla* auct., non Mett.

Mangtewa to Waleng, 27°35', 87°12', c. 915 m, occasional, *B* 1579 (AB).

According to Ching (1958), the Himalayan plant is *P. communis*, being different from the Javanese plant which is the type of *P. pycnophylla* Mett.

*Schizaeaceae*

**Lygodium flexuosum** (L.) Sw.  
= *Ophioglossum flexuosum* L.

Huske to Dolaghat, 27°37', 85°40', c. 915 m, *B* 1176 (RV; AB; N).

**L. japonicum** (Thunb.) Sw.  
= *Ophioglossum japonicum* Thunb.

Nepal thok to Mulkot, 27°25', 85°52', c. 760 m, *B* 120; Patala to Yarsa, 27°38', 86°06', c. 1675 m, *B* 1432 (P; RV; AB; N).

*Adiantaceae*

**Adiantum capillus-veneris** L.

Huske to Dolaghat, 27°37', 85°40', c. 1065 m, *B* 1168; Sheopuri area, 27°50', 85°25', c. 1675 m, common in shade, *B* s.n. (AB).

**A. philippense** L.  
= *A. lunulatum* Brum.

Huske to Dolaghat, 27°37', 85°40', c. 1065 m, *B 1172* (AB; N; T).

### *Vittariaceae*

\* **Vittaria doniana** Mett.

Bhusinga to Jhaprebas, 27°30', 86°25', c. 1980 m, *B 1505*.

\* **V. elongata** Sw.

Nagarjang, 27°45', 85°15', c. 1675 m, rare, epiphytic, *B 1690*.

**V. flexuosa** Fee  
= *V. lineata* Sw.

Charikot to Kalinchok, 27°40', 86°10', c. 2743 m, *B 1224*; Rolkhani to Tamchee, 27°40', 85°55', c. 2285 m, in ravines as epiphyte, *B 1271*; Bhojpur to Suntale, 27°10', 87°05', c. 1828 m, occasional, *B 1529* (N).

**V. himalayensis** Ching

Patale to Yarsa, 27°38', 86°06', c. 2438 m, epiphytic, *B 1441* (RV; AB; N; T).

### *Cryptogrammaceae*

**Cryptogramma brunoniana** Wall. ex Hook. & Grev.  
= *Cheilanthes crispa* (L.) R. Br.; *Osmunda crispa* L.

Helembu-Dhupa area, 27°55', 85°35', c. 3965 m, *RF s.n.*; Thami, 27°46', 86°37', c. 3810 m, amongst rock crevices, rare, *B s.n.* (AB; T; N).

**Onychium siliculosum** (Desv.) C. Chr.  
= *Pteris siliculosum* Desv.; *Onychium auratum* Kaulf.

Dhupu to Wana, 27°25', 87°15', c. 760 m, *B 540*; Chandragiri, 27°40', 85°13', c. 1980 m, *B 8/2*; Bumlung to Mangtewa, 27°28', 87°10', c. 760 m, very abundant as if cultivated, covering a large tract, *B 1557* (RV; AB; N).

*Sinopteridaceae*\* *Cheilanthes dalhousae* Hook.

Namchee to Thyangbochee, 27°50', 86°42', c. 3810 m, in rock crevices, *B 1891*.

*C. farinosa* (Forsk.) Kaulf.

= *Pteris farinosa* Forsk.

Jubing to Wapsakhani, 27°35', 86°40', c. 1220 m, *B 399*; Hukse to Dolaghat, 27°37', 85°40', c. 914 m, *B 1178*; Waleng to Walung, 27°35', 87°12', c. 1065 m, occasional, *B 1590* (Bu; RV; N).

*Gymnogrammaceae**Coniogramme fraxinea* (D. Don) Diels

= *Diplazium fraxineum* D. Don; *Syngramme fraxinea* Bedd. p.p.

Kaituka village forest (near Okhaldunga), 27°20', 86°25', c. 2135 m, rare, *B 208*; Nagarjung, 27°45', 85°15', c. 1675 m, in shade, occasional, *B 1694* (P; N).

*Pteridaceae*\* *Actinopteris dichotoma* Forsk.

Phedim to Moktara, 27°07', 87°48', c. 1065 m, *B 735*; Kuwapani to Tinpipli, 27°32', 85°40', c. 1065 m, *B 89*.

A common fern in the hot vallies and near streams.

*Pteris biaurita* L.

= *Campteris biaurita* Hook.

Kaituka village forest (near Okhaldunga), 27°20', 86°25', c. 2135 m, epiphytic, *B 206*; Hukse to Dolaghat, 27°25', 85°52', c. 914 m, *B 1175* (RV; N).

*P. dactylina* Hook.

Kalinchok to Rolkhani, 27°40', 86°00', c. 3200 m, rare, *B 1244* (RV; AB).

*P. wallichiana* Ag.

= *Campteris wallichiana* Moore

Kalinchok to Rolkhani, 27°40', 86°00', c. 3200 m, abundant, *B 1247*, (RV; AB; N).

*Hymenophyllaceae*

**Mecodium exsertum** (Wall. ex Hook.) Copel.  
= *Hymenophyllum exsertum* Wall. ex Hook.

Buludanda to Risingo, 27°37', 85°50', c. 1980 m, *B 1346*; Charikot to Kalinchok, 27°40', 86°10', c. 2475 m, *B s.n.*; Those to Pokhri, 27°37', 86°20', c. 2590 m, *B s.n.*; Sheopuri, 27°50', 85°22', c. 2135 m, *B 1688* (RV; N).

**M. polyanthos** (Sw.) Copel.  
= *Trichomanes polyanthos* Sw.; *Hymenophyllum polyanthos* Sw.

Charikot to Kalinchok, 27°40', 86°10', c. 2440 m, *B 1220*; Charikot to Kalinchok, 27°40', 86°10', c. 2590 m, *B 1421*; Sedua to Alauling, 27°37', 87°17', c. 1828 m, *B 1611* (N).

*Dennstaedtiaceae*

\* **Microlepia platyphylla** (D. Don) J. Sm.  
= *Davallia platyphylla* D. Don

Gokarna (Kathmandu valley), 27°44', 85°18', c. 1370 m, *B s.n.*

\* **M. strigosa** (Thunb.) Presl  
= *Davallia strigosa* Thunb.; *D. polypodioides* D. Don var. *strigosa* C. B. Cl.

Gokarna (Kathmandu valley), 27°44', 85°15', c. 1370 m, in deep shade and moist places, *B s.n./2*; Bajrabarahi forest, 27°37', 85°20', c. 1370 m, common on damp soil, *B s.n./1*.

*Hypolepidaceae*

\* **Hypolepis punctatus** (Thunb.) Mett.  
= *Polypodium punctatum* Thunb.; *P. rugulosum* sensu Bedd.

Dingla to Udaipur, 27°25', 87°10', c. 610 m, plants in shade, rhizome undergrounds, fronds spreading and on an average c. 2.5 m long, *B 1571*.

*Lindsayaceae*

**Lindsaya cultrata** (Willd.) Sw.  
= *Adiantum cultratum* Willd.

Bhumlulanda to Risingo, 27°37', 85°52', c. 1980 m, on stony walls, *B s.n.* (RV; AB; N).



**Sphenomeris chinensis** (L.) Maxon

= *Trichomanes chinensis* L.; *Stenoloma chinensis* (L.) Bedd.; *Sphenomeris chusana* (L.) Copel.

Chainpur to Mialay, 27°18', 87°20', c. 1065 m, *B* 557; Pheda to Charikot, 27°40', 86°00', c. 1830 m, *B* 621; Tinjura forest, 27°10', 87°23', c. 1220 m, *B* 893; Hukse to Dolaghat, 27°38', 85°40', c. 914 m, *B* 1174 (RV; AB; N).

*Davalliaceae***Araiostegia dareiformis** (Hook.) Copel.

= *Polypodium dareiformis* Hook.; *Davallia dareiformis* (Hook.) Lev.

Charikot to Kalinchok, 27°40', 86°10', c. 2590 m, epiphytic, *B* 1412 (N).

**A. pulchra** (D. Don) Copel.

= *Davallia pulchra* D. Don; *Leucostegia pulchra* (D. Don) J. Sm.

Suntale to Dingla, 27°18', 87°05', c. 2285 m, *B* s.n. (AB; T; N).

\* **Davallia polypodioides** D. Don var. **lanata** C. B. Cl.

Dingla to Udaipur, 27°25', 87°10', c. 457 m, in shady places, old fronds 3-3.25 m in length, *B* 1564.

**Leucostegia immersa** (Wall.) Presl

= *Davallia immersa* Wall. ex Hook.

Libang, 27°25', 87°37', c. 1372 m, *B* 752; Bhumludanda to Risingo, 27°37', 85°58', c. 1980 m, *B* 1348; Pheda to Ahalay, 27°37', 85°58', c. 1830 m; Sedua to Alauling, 27°37', 87°17', c. 1830 m, *B* s.n.; Sirkhua khola to Bhumludanda, 27°25', 87°07', c. 610 m, *B* 1572 (AB).

*Oleandraceae***Oleandra wallichii** (Hook.) Presl

= *Aspidium wallichii* Hook.

Nayapati to Risingo, 27°37', 85°52', c. 2285 m, *B* 1195; Bhumludanda to Risingo, 27°37', 85°52', c. 1980 m, *B* 1338, (RV; AB; N).

**Nephrolepis cordifolia** (L.) Presl.

= *Polypodium cordifolium* L.; *Nephrolepis auriculata* (L.) Trim.

Hukse to Dolaghat, 27°40', 85°40', c. 915 m, forming colonies, tubers present, *B 1181* (RV; AB; N).

#### *Gleicheniaceae*

***Dicranopteris linearis*** (Burm.) Underwood

= *Polypodium linearis* Burm.; *Gleichenia linearis* (Burm.) C. B. Cl.

Dhulikhel, 27°37', 85°33', c. 1585 m, *B 58*; Hukse to Dolaghat, 27°40', 85°40', c. 915 m, *B 1177* (RV; AB; N).

A fern that forms dense growth at many places, and is very common.

#### *Cyatheaceae*

***Cyathea spinulosa*** Wall. ex Hook.

Sankhujang, 26°59', 87°52', c. 915 m, *B 703*; Dingla to Udaipur, 27°25', 87°10', c. 610 m, many specimens seen along the sides of a stream, *B 1569*.

This fern has been seen by the author to extend up to 83°55'E (westwards) in the Gabung khola valley. In a personal communication Mr. L. H. J. Williams of British Museum informed the author about the limits of the species as evidenced from the collections at the British Museum.

#### *Onocleaceae*

\* ***Matteuccia orientalis*** (Hook.) Trev.

= *Struthiopteris orientalis* Hook.; *Onoclea orientalis* Hook.

Phaplu to Rhingmo, 27°35', 86°37', c. 3048 m, the fronds are dimorphic and the fertile ones stand erect, *B 278*.

The collection was made on 25.4.1948, and since then the area has been traversed many times by the author during the subsequent years, but the fern has not been seen again. There has been a lot of clearing in the area, and probably the fern has been lost.

#### *Woodsiaceae*

\* ***Peranema cyatheoides*** D. Don

Chunrikherka to Puyia, 27°38', 86°43', c. 2590 m, a rare fern in the area *B 382*; Suntale to Dingla, 27°18', 87°05', c. 1980 m, rare, *B 1546*.

From the author's field notes, it appears that the fern is indeed rare, although D. Don described the species from Nepal.

*Aspidiaceae*

- \* **Arachniodes aristata** (Forst. f.) Tindale  
= *Polypodium aristatum* Forst. f.; *Aspidium aristatum* Cl.

Bajrabarahi (Kathmandu valley), 27°37', 85°20', c. 1370 m, plants large, fronds c. 1 m long, growing in shade, *B s.n.*

- \* **Ctenitis nidus** (Cl.) Ching  
= *Nephrodium nidus* Cl.; *Lastrea filix-mas* L. var. *parallelogramma* Bedd.

Chunrikherka to Puyia, 27°38', 86°43', c. 2590 m, *B 381*; Suntale to Dingla, 27°18', 87°05', c. 2285 m, locally abundant, fronds c. 2 m long, turned downwards so as to expose the apex, thus resembling *Cycas*, *B 1538*.

- Dryopteris atrata** (Wall.) Ching  
= *Aspidium atratum* Wall.; *Nephrodium hirtipes* C. B. Cl.

Dingla, 27°22', 87°10', c. 1370 m, *B s.n.* (N).

- D. chrysocoma** (C. Chr.) C. Chr.  
= *Aspidium filix-mas* var. *chrysocoma* C. Chr.; *Lastrea filix-mas* var. *schimperiana* Bedd.

Charikot to Kalinchok, 27°40', 86°10', c. 3505 m, *B s.n.*; Those to Pokhri, 27°37', 86°20', c. 3657 m, *B 1470* (P; AB; N).

- D. cochleata** (D. Don) C. Chr.  
= *Nephrodium cochleatum* D. Don

Hukse to Dolaghat, 27°38', 85°40', c. 1066 m, *B 1169* (N).

- D. serrato-dentata** (Bedd.) Hayata  
= *Lastrea filix-mas* var. *serrato-dentata* Bedd.

Helambu-Dhupu area, 27°55', 85°35', c. 3902 m, *RF s.n.* (AB).

- Polystichum aculeatum** (L.) Schott. var. *setosum* (Wall.) Bedd.  
= *Polypodium aculeatum* L.; *Aspidium setosum* Wall.; *Aspidium aculeatum* var. *setosum* Cl.

Namochee to Rukma, 27°43', 87°23', c. 2745 m, in a dense forest, in deep shade, *B s.n.* (P).

**P. auriculatum** Sw.

Hukse to Dolaghat, 27°38', 85°40', c. 915 m, *B* 1182; Tamchee to Nayapati, 27°38', 85°52', c. 1370 m, *B* 1270; Dingla, 27°22', 87°10', c. 915 m, occasional in shade, *B* 1560; Waleng to Walung, 27°35', 87°12', c. 915 m, *B* 1589 (P).

**P. ilicifolium** (D. Don) Moore  
= *Aspidium ilicifolium* D. Don

Phaplu to Rhingmo, 27°35', 86°37', c. 2895 m, amongst rocks, abundant, *B* 259 (N).

**P. nigropaleaceum** (C. Chr.) Diels  
= *P. aculeatum* var. *nigropaleaceum* Chr.; *Polypodium aculeatum* L.; *Aspidium aculeatum* Sw.

Bajrabarahi forest (Kathmandu valley), 27°37', 85°20', c. 1220 m, *B. s.n./b*; Gokarna (Kathmandu valley), 27°44', 85°15', c. 1220 m, *B. s.n./c* (N).

\* **P. prescottianum** (Wall.) Moore  
= *Aspidium prescottianum* Wall.

Helambu-Dhupu area, 27°55', 85°35', c. 3658 m, occasional under wet rocks in the *Juniperus* forest, *RF s.n.*

**Tectaria polymorpha** (Wall.) Copel.  
= *Aspidium polymorphum* Wall.; *Nephrodium polymorphum* Baker

Sedua to Alauling, 27°37', 87°17', c. 2438 m, occasional, *B* 1609; Gokarna (Kathmandu valley), 27°44', 85°18', c. 1372 m, *B s.n.* (AB).

*Athyriaceae*

**Athyrium anisopterum** C. Chr.  
= *A. macrocarpum* Bedd.

Chandragiri, 27°40', 85°13', c. 1980 m, *B* 6/2 (RV; AB).

**A. foliolosum** (Wall.) Moore ex Sim.  
= *Aspidium foliolosum* Wall.; *Asplenium fimbriatum* var. *foliolosum* Cl.

Bhojpur to Suntale, 27°10', 87°05', c. 1980 m, *B s.n.* (RV; AB).

**A. nigripes** (Bl.) Moore  
= *Asplenium nigripes* Bl.

Dingla to Udaipur, 27°25', 87°10', c. 610 m, abundant in shade, rhizome in rock crevices, *B* 1567; Nagarjang, 27°45', 85°15', c. 1830 m, rare, in shade, *B* 1691; Those to Bhumludanda, 27°37', 86°17', c. 2285 m, *B s.n.* (N).

**A. pectinatum** (Wall.) Presl.  
= *Asplenium pectinatum* Wall.; *Athyrium filix-foemina* var. *pectinata* (Wall.) Bedd.

Pheda to Ahalay, 27°37', 85°58', c. 1830 m, terrestrial, in a cave, *B* 1377; Suntale to Dingla, 27°18', 87°05', c. 2285 m, rare in shade, *B s.n.* (AB).

#### *Thelypteridaceae*

\* **Cyclosorus aridus** (D. Don) Tagawa  
= *Aspidium aridum* D. Don

Hukse to Dolaghat, 27°38', 85°40', c. 915 m, in ravines, *B* 1180.

\* **Thelypteris repens** (Hope) Ching  
= *Nephrodium repens* Hope

Gokarna, 27°44', 85°18', c. 1220 m, *B s.n.*

#### *Aspleniaceae*

**Asplenium ensiforme** Wall. ex Hook. & Grev.

Charikot to Kalinchok, 27°40', 86°10', c. 2745 m, *B* 1223; Rolkhani to Tamchee, 27°42', 85°55', c. 2438 m, *B* 1272 (AB; N).

\* **A. laciniatum** D. Don var. **planicaule** Mett.

Kaituka village forest, 27°20', 86°25', c. 2133 m, *B* 210; Chaubas to Pheda, 27°37', 85°50', c. 1980 m, *B* 612.

\* **A. nidus** L.  
= *Thamnopteris nidus* Presl

Sedua to Alauling, 27°37', 87°17', c. 1372 m, epiphytic, fronds c. 1.5 m long, locally abundant, *B* 1608.

*Blechnaceae*\* **Blechnum orientale** L.

Hukse to Dolaghat, 27°38', 85°40', c. 915 m, *B 1179*.

This species is known from Eastern Himalayas and regarded as an East Himalayan element, extends to Kumaon, Mussorie and Simla (Bir 1963). The present record of the species from Nepal shows that the species is continuous all along the length of the Himalayas.

**Woodwardia radicans** (L.) Sw.

= *Blechnum radicans* L.

Charikot to Kalinchok, 27°40', 86°10', c. 2133 m, *B s.n.* (N).

*Loxogrammaceae***Loxogramme involuta** (D. Don) Presl

= *Grammitis involuta* D. Don; *Gymnogramma involuta* Hook.

Kaituka village forest, 27°10', 87°05', c. 2133 m, *B 207*; Bhojpur to Sun-tale, 27°10', 87°05', c. 1525 m, *B s.n.* (AB; N).

*Polypodiaceae***Arthromeris himalayensis** (Hook.) Ching

= *Polypodium himalayensis* Hook.

Nagarjung, 27°45', 85°15', c. 1372 m, *B s.n.* (AB).

**A. wallichiana** (Spr.) Ching

= *Polypodium wallichianum* Spr.; *P. juglandifolium* D. Don; *Arthromeris juglandifolium* (D. Don) J. Sm.

Hukse to Dolaghat, 27°38', 85°40', c. 1066 m, *B 1171* (RV; AB; T; N).

\* **Colysis elliptica** (Thunb.) Ching

= *Polypodium ellipticum* Thunb.; *Gymnogramma elliptica* Hook. & Bak.

Gokarna (Kathmandu valley), 27°44', 85°18', c. 1372 m, in shade, *B 1689*.

**Drynaria mollis** Bedd.

= *Polypodium rivale* Mett.

Gokarna (Kathmandu valley), 27°44', 85°18', c. 1372 m, *B s.n.* (RV; AB; T; N).

\* **Lemmaphyllum carnosum** (Wall.) Presl.

= *Notholaena carnosus* Wall.; *Drymoglossum carnosum* (Wall.) J. Sm.

Sedua to Alauling, 27°37', 87°17', c. 1830 m, locally abundant, epiphytic, *B 1612*; Namoochee to Rukma, 27°43', 87°23', c. 1830 m, *B s.n.*

This is a very beautiful fern with dimorphic fronds, the fertile being linear-obtuse and the sterile ones thick, fleshy and elliptic.

**Lepisorus nudus** (Hook.) Ching

= *Pleopeltis nuda* Hook.; *Polypodium nudum* (Hook.) Kuntze

Ramechappe to Deorali, 27°06', 86°07', c. 1525 m, *B 142*; Jubing to Puyia, 27°36', 86°43', c. 2590 m, *B 313*; Kalinchok, 27°46', 86°32', c. 2743 m, *B 636*; Bhumludanda to Risingo, 27°37', 85°52', c. 1980 m, *B 1349*; Raniban (Bhojpur), 27°10', 87°05', c. 1675 m, epiphytic, *B 1526*; Nagarjung, 27°45', 85°15', c. 1675 m, *B 1692* (RV; AB).

**Microsorium membranaceum** (D. Don) Copel.

= *Polypodium membranaceum* D. Don

Dolaghat to Bhumludanda, 27°37', 85°45', c. 915 m, in crevices of wet rocks, *B 1313* (AB; T; N).

**Phymatodes ebenipes** (Hook.) Ching

= *Polypodium ebepines* Hook., *Pleopeltis ebenipes* Bedd.; *Crypsinus ebenipes* (Hook.) Copel.

Bhumludanda to Risingo, 27°37', 85°05', c. 1980 m, a common epiphyte, *B 1350-a* (AB; N).

**P. malacodon** (Hook.) Ching

= *Polypodium malacodon* Hook.

Those to Pokhri, 27°37', 86°20', c. 3658 m, epiphytic, *B 1468* (AB; T).

**P. oxyloba** (Wall.) Presl

= *Polypodium oxylobum* Wall. ex Kunze

Bhumludanda to Risingo, 27°37', 85°52', c. 1980 m, *B 1350-b* (AB; N).

\* **Polypodium argutum** Wall. ex Hook.

Yarsa to Jiri, 27°37', 86°10', c. 2438 m, *B 1443*; Those to Shatermau, 27°28', 86°27', c. 2285 m, *B s.n.*

**P. atkinsonii** C. Chr.

= *P. hendersonii* Atkins; *Goniophlebium hendersonii* Bedd.

Those-Pokhri area, 27°37', 86°20', c. 3658 m, epiphytic, very rare, *B s.n.* (AB).

**P. cyrtolobum** J. Sm. ex C. B. Cl.

Those-Pokhri area, 27°37', 86°20', c. 3658 m, epiphytic, *B 1471* (N).

\* **P. griffithianum** Hook.

Suntale to Dingla, 27°18', 87°05', c. 2285 m, epiphytic, locally abundant, *B 1539*.

**P. leiorhizon** Wall.

Kathmandu, 27°40', 85°20', c. 1372 m, *B 31* (RV).

\* **P. subdigitatum** Bl.

Suntale to Dingla, 27°18', 87°05', c. 1372 m, in deep shade, terrestrial with vegetative buds on the fronds, occasional, *B 1550*.

**Pseudodrynaria coronans** (Wall.) Ching

= *Polypodium coronans* Wall.; *Drynaria coronans* J. Sm.

Kathmandu valley, 27°40', 85°20', c. 1372 m, *B 17*; Dingla, 27°22', 87°10', c. 915 m, locally abundant, fronds as much as 1.5 m long, *B 1551* (Bu).

**Pyrrosia adnascens** (Sw.) Ching

= *Niphobolus adnascens* Sw.

Tinpipli to Nepalthok, 27°28', 85°45', c. 760 m, *B 106*; Suntale to Dingla, 27°28', 87°05', c. 1372 m, *B s.n.*; Waleng to Walung, 27°35', 87°12', c. 1066 m, *B 1588*; Sedua to Alauling, 27°37', 87°17', c. 1829 m, *B 1614* (RV).



\* **P. flocculosa** (D. Don) Ching  
= *Polypodium flocculosum* D. Don; *Niphobolus flocculosum* Bedd.

Bhojpur to Suntale, 27°10', 87°05', c. 1980 m, epiphytic, *B* 1535.

**P. mannii** (Gresib.) Ching  
= *Niphobolus mannii* Gresib.

Panchkhal to Dolaghat, 27°38', 85°40', c. 760 m, epiphytic, *B* 1299; Manding to Tiwarabhanjang, 27°08', 87°13', c. 1524 m, *B* 1514; Dingla, 27°22', 87°10', c. 915 m, *B s.n.* (RV; AB; N).

**P. mollis** (Kunze) Ching  
= *Niphobolus mollis* Kunze

Bhojpur to Suntale, 27°10', 87°05', c. 1829 m, epiphytic, *B* 1534 (N).

**P. stigmosa** (Sw.) Ching  
= *Niphobolus stigosus* Sw.

Suntale to Dingla, 27°18', 87°05', c. 1372 m, epiphytic on tall trees, *B s.n.*; Bumling to Mangtewa, 27°25', 87°12', c. 760 m, epiphytic, rare, *B s.n.*; Waleng to Walung, 27°35', 87°12', c. 1066 m, *B* 1591 (RV).

#### Grammitaceae

**Ctenopteris subfalcatum** (Bl.) Kunze  
= *Polypodium subfalcatum* Bl.

Saddle to Dingla, 27°18', 87°05', c. 3048 m, epiphytic, rare *B* 445 (N).

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