

MATERIAL FOR THE FLORA OF MAHABALESHWAR - 8 PTERIDOPHYTES

P.V. BOLE AND M.R. ALMEIDA

(Continued from Vol. 83(3): 594)

KEY TO THE FAMILIES OF PTERIDOPHYTA OF MAHABALESHWAR

1. Leaves simple, one nerved, close and small relatively to the axis. Sporangia orbicular or semi-orbicular, compressed, 1-celled, 2-valved, at the base of the sporophyllis which are grouped in a spike 2
2. Isosporous, leaves multifarious without ligule LYCOPODIACEAE
2. Heterosporous 3
3. Leaves often 4-farious and differing in shape and size, with a microscopic ligule SELAGINELLACEAE
3. Leaves multifarious with ligule ISOETACEAE
1. Leaves large relatively to the axis, multinerved and usually compound. Sporangia on the margins or on the back of the leaves or on modified leaves or borne in sporocarps 4
4. Sporangia produced from plural sub-epidermal cells. Sori without an annular ring OPHIOGLOSSACEAE
4. Sporangia developed from a single epidermal cell. Sori with an annular ring 5
5. Sori opening across the apex, furnished with a short horizontal ring OSMUNDACEAE
5. Sori not opening across the apex 6
6. Sori two-valved, opening down the side, crowned by a operculiform complete ring SCHIZAEACEAE
6. Sori opening by bursting as a stroma, surrounded by a jointed vertical and uncomplete elastic ring 7
7. Indusium usually present, true or false 8
8. Spores trilete 9
9. True indusium present DENSTADTIACEAE
9. True indusium not present 10
10. Sori restricted more or less in the centre of the frond GYMNOGRAMMACEAE
10. Sori running along the margins or covering entire lower surface 11
11. Margins irregularly folded and very much curled SINOPTERIDACEAE
11. Margins entire or deeply cut, reflexed but not curled 12
12. Sori continuous, exposed at maturity PTERIDACEAE
12. Sori broken at intervals, covered by reflexed margins even at maturity ADIANTACEAE
8. Spores monolete 13
13. Sori pocket-shaped or flap-like, veins free DAVALLIACEAE
13. Sori circular, veins reticulate 14
14. Indusium linear or oblong or sometimes horse-shoe shaped, opening towards the mid-rib, outer margins attached to the veins 15
15. Scales clathrate; the two vascular bundles at the base of the stipe uniting upwards in X-Shape ASPLENIACEAE
15. Scales not clathrate; vascular bundles unite in U-shape ATHYRIACEAE
14. Indusium elliptical, sub-globose or reniform, fixed to the lamina in the centre or at the sinus 16
16. Pinnules with reticulate veins ASPIDIACEAE
16. Pinnules with parallel veins THELYPTERIDACEAE
7. Indusium absent POLYPODIACEAE

LYCOPODIACEAE

Lycopodium Linn.

1. ***Lycopodium hamiltonii*** Spreng. Syst. 5: 429, 1828; Mahabale, J. Univ. Bombay 6(5): 69, 1938.
L. obtusifolium Hamilt. in Don, Prod. Fl. Nepal. 18, 1828 (non Sw.).
L. alvifolium Wall. ex Hook. et Grev. Ic. t. 233, 1829.
L. empetrifolium Dalzell, Hook., J. Bot. 4: 113, 1853.
L. obtusatum Fairbank, Sensus Birdwood, in J. Bombay nat. Hist. Soc. 10(3): 430, 1896.

This epiphytic *Lycopodium* is found near Wada, on the way to Mahabaleshwar, especially on tall mango trees. It grows erect or sub-erect on the host plant in the monsoon, but is usually seen dried and hanging soon after the rains stop. It is a rare species and near Wada it is found at one or two spots only.

Spores: September – December.

Specimen collected: M.R. Almeida – 247.

SELAGINELLACEAE

Selaginella Pallisot de Beauvois (nom. cons.)

1. Median leaves not aristate; plant 20 cm tall
..... *S. delicatula*
1. Median leaves aristate; plants less than 10 cm
..... *S. proniflora*

1. ***Selaginella delicatula*** (Desv.) Alston,
J. Bot. 70: 282, 1932.
Lycopodium delicatulum Desv., Poir. Encycl. Suppl.
3: 584, 1814.
S. canaliculata Graham, Cat. Bombay Pl. 243, 1839.

This is a common species in shady places. It grows on hill-slopes in abundance. It is an erect species, occasionally producing a few adventitious stilt roots, from the lower parts of the stem.

SPECIMEN SEEN: M.B. Vasantha - S.N. (Sept. 1967).

2. ***Selaginella proniflora*** (Lamk.) Baker, J. Bot. 22: 150, 1855. *Lycopodium proniflora* Lamk. Encycl. 3: 652, 1791.
L. caespitosum Dalz., Hook. Kew Journ. Bot. 4: 114, 1852 (non Blume 1828).

This species is found on rocks and on bouldered soil in clusters. The plant is seen to be slightly spreading in juvenile stage but assumes an erect position later.

OCCURRENCE: August–November.
SPECIMEN: P.V. Bole–2306.

ISOETACEAE

Isoetes Linn.

1. Peripheral strands present; velum rudimentary
..... *I. dixitei*
1. Peripheral strands absent; velum almost complete
..... *I. sahyadrica*

1. ***Isoetes dixitei*** Shende, J. Univ. Bombay 14: 50, 1945.
Found in shallow pools of water on Wilson Point, during the second half of monsoon.
OCCURRENCE: July.
SPECIMEN: M.R. Almeida—s.n. (BLAT).

2. ***Isoetes sahyadrica*** Mahabale, Curr. Sci. 7:

61-2, 1938.

This species is also described from similar habitat as that of *I. dixitei* Shende. Unfortunately, type materials are not preserved and presence of peripheral strands on which *I. dixitei* is segregated from it could not be verified in the absence of type materials. Otherwise both have common characters. All specimens we have examined have shown peripheral strands.

OPHIOGLOSSACEAE

Ophioglossum Linn.

1. ***Ophioglossum reticulatum*** Linn. Sp. Pl. 2: 1063, 1753; Gray in Gazett. Bombay Pres. 25:377, 1886; Blatter, J. Bombay nat. Hist. Soc. 18(3): 612, 1908; Mahabale, J. Univ. Bombay 6(5): 109, 1938.

Found under the shade of trees on hill-slopes and among grasses in the plains in monsoon. It can be easily recognised from other species due to its long fleshy and running roots.

OCCURRENCE: July–November.

SPECIMEN SEEN: M.R. Almeida–755.

OSMUNDACEAE

Osmunda Linn.

1. ***Osmunda regalis*** Linn. Sp. Pl. 2: 1065, 1753; Gray, Gazett. Bombay Press. 25: 377, 1886; Birdwood, J. Bombay nat. Hist. Soc. 2(2): 126, 1887; Blatter & d'Almeida, Ferns of Bombay, 192, 1922; Eubank J. Bombay nat. Hist. Soc. 36(1): 193, 1932.

The royal fern occurs mostly on the banks of rivers and streams. usually its roots are submerged in running water.

OCCURRENCE: Throughout the year.

SPECIMEN SEEN: M.R. Almeida–s.n.

SCHIZAEACEAE

Lygodium Sw.

1. ***Lygodium flexuosum*** (L.) Sw. in Schrad. Journ. 1800/2; 106, 1801; Graham, Cat. Bombay 242; Birdwood, in J. Bombay

nat. Hist. Soc. 1(4): 211, 1886; Gray, 377; Blatter & d'Almeida, 195.

Ophioglossum flexuosum Linn. Sp. Pl. 2: 1063, 1753.

A seasonal monsoon fern which starts growing at the beginning of the monsoon and lasts until January.

PTERIDACEAE

Pteris Linn.

1. Fronds simply pinnate 2
2. Pinnae more than 3 cm wide..... *P. pellucida*
2. Pinnae less than 1.5 cm wide..... *P. vittata*
1. Fronds bipinnate 3
3. Lowest pinnae having more than one lobe (up to 5 lobes) on the abaxial side. *P. quadriaurita* (p.p.)
3. Lowest pinnae having only one lobe on abaxial side 4
4. Copious stiff hairs on rachis and costae. *P. asperula*
4. No stiff hairs on rachis and costae..... 5
5. Veinlets usually once forked and then free *P. quadriaurita* (p.p.)
5. Lowest pairs of veinlets of the adjoining veins unite in pairs into an arch..... *P. biaurita*

1. ***Pteris asperula*** J. Sm. in Hook. J. Bot. 3: 405, 1841.

P. quadriaurita var. *setigera* Hook. Sp. Fil. 2: 181, 1858.

A common species in shady places. It can be easily separated from its allies due to the presence of prickly hairs on its costae.

SPECIMEN SEEN: M.R. Almeida-155.

2. ***Pteris biaurita*** Linn. Sp. Pl. 1076, 1753; Eubank, J. Bombay nat. Hist. soc. 36: 191, 1932.

Campteria biaurita (Linn.) Hook. Gen. Fil. t. 75A, 1841.

P. quadriaurita forma *biaurita* (Linn.) Blatter & d'Almeida, Ferns of Bombay, 89, 1922.

Very common all over Mahabaleshwar and occurs in association with *Pteris quadriaurita* Retz. from which it is very difficult to separate, in sterile condition. In herbarium, however, it could be easily separated due to its costular elongated areoles.

SPECIMENS EXAMINED: S.V. Ranade-s.n.

3. ***Pteris pellucida*** Presl., Rel. Haenk. 1:55, 1825; Gray, 376 Birdwood, 211; Blatter & d'Almeida, 86.

Found in very thickly shaded places and grows generally on black, humid and loose soil.

SPECIMEN EXAMINED: P.V. Bole-127.

4. ***Pteris quadriaurita*** Retz., Obs. 6: 38, 1791; Gray, 376; Birdwood, 211; Eubank, 190; Blatter & d'Almeida, 88.

One of the common species all over Mahabaleshwar. It is usually found on the sloping grounds on yellowish loamy soil.

SPECIMEN SEEN: G.L. Shah-10659.

5. ***Pteris vittata*** Linn. Sp. Pl. 2: 1074, 1753; *P. longifolia* auct. (non Linn. 1753); Hook., Sp. Fil. 2: 157, 1858; Bedd. F.S.I. 11, t. 33, 1863 & Handb. 106, f. 55, 1883; Gray, 376; Birdwood, 431; Blatter & d'Almeida, 83.

A common species found in crevices of stone walls. It is also found on the ground but it does not produce luxuriant growth on soil. It grows more gregariously in winter than in monsoon.

SPECIMEN SEEN: E. Gonzalves-s.n.

SINOPTERIDACEAE

Aleuritopteris Fee

1. Only stipes paleaceous *A. farinosa*
1. Stipes as well as rachis paleaceous *A. albomarginata*

1. ***Aleuritopteris albomarginata*** (Clarke) Ching, in Hong Kong Nat. 10: 1999, 1941. *Cheilanthes albomarginata* C.B. Clarke, in Trans. Linn. Soc. London 2 (Bot.): 456, t. 52, 1880; Bedd. Handb. 94, 1883; Blatter & d'Almeida, 79, f. 6.

A quite common fern occurring mostly on embankments.

SPECIMEN SEEN: B. Balamani-304.

2. ***Aleuritopteris farinosa*** (Forsk.) Fee, Gen. Fil. 153, 1852. *Pteris farinosa* Forsk. Fl. Aegypt. Arab. 187, 1775; Graham, Cat. Bombay Pres. 241, 1839.

Cheilanthes farinos (Forsk.) Kaulf. Enum. Fil. 202, 1824; Bedd. F.S.I. 65, t. 191, 1863 & handb. 92; Birdwood, 211; Gray, 376; Blatter & d'Almeida 77, t. 6, f. 31; Eubank, 194.

A common and abundant species on open embankments. It is generally known as silver fern due to powdery mildew present on the under surface of leaves. It is a typical monsoon species and starts withering and curling its leaves immediately after the rains stop.

SPECIMEN SEEN: P.V. Bole-1219.

GYMNOGRAMMACEAE

Annogramma

1. ***Annogramma leptophylla*** (Linn.) Link., Fil. Sp. Cultae, 137, 1841.
Polypodium leptophyllum Linn., Sp. Pl. 2: 1092, 1753.
Gymnogramme leptophylla (Linn.) Desv., Berl. Mag. 5: 305, 1811; Bedd., F.S.I. 88, t. 270 & Handb. 382; Gray, 376; Blatter & d'Almeida, 175.

Found on the sides of old walls, and on tree-trunks during monsoon and in winter.

SPECIMEN COLLECTED: M.R. Almeida - 712.

ADIANTACEAE

Adiantum Linn.

1. Fronds simply pinnate 2
2. Pinnae petiolate, kidney-shaped, not deeply incised
..... *A. philippense*
2. Pinnae sessile, fan-shaped, deeply incised
..... *A. incisum*

1. Fronds tripinnate or decompound *A. cuneatum*.

1. ***Adiantum incisum*** Forsk. Fl. Egypt. Arab. 187, 1775;

A. caudatum auct. (non Linn. 1753), quod, Bedd. Ferns Brit. India, t. 2, 1868 & Handb. 82, 2.44; Gray, 376; Blatter & d'Almeida, 61.

A rare species in shady places. It grows on black soil, which is rich in humus due to the decayed leaves.

SPECIMEN SEEN: M.S. Samant-s.n.

2. ***Adiantum cuneatum*** Langs. et. Fish., Ic. Fil. 23, t. 26. 1810; Blatter & d'Almeida, 72, f. 28.

This, an introduced garden species some-

times found growing wild, probably as an escape from cultivation.

SPECIMEN COLLECTED: M.R. Almeida - 742.

3. ***Adiantum philippense*** Linn. Sp. Pl. 2: 1094, 1753.

A. lunulatum Burm. f., Fl. Ind. 235, 1768; Graham, 242; Beddome, Handb., 115; Birdwood, 211; Gray, 376; Blatter & d'Almeida, 92, f. 35.

A common and abundant monsoon species found all over in shady places. It grows luxuriantly on embankments but it disappears immediately after monsoon. Some times it is seen growing on trees in crevices of branches but it is not an epiphyte.

SPECIMEN COLLECTED: M.R. Almeida - 246.

DENSTADTIACEAE

Pteridium Scop

1. ***Pteridium aquilinum*** (Linn.) Kuhn, in V. Deck. Reis. 3/3, Bot. 11, 1879.

Pteris aquilina Linn., Sp. Pl. 2: 1075, 1753; Graham, 241; Bedd., F.S.I. 14, t. 42 & Handb. 115; Birdwood, 211; Gray, 376; Blatter & d'Almeida, 92, f. 35.

The commonest and dominant species of plains of higher hills at Mahabaleshwar. It is the first species to reappear after any forest clearing is done. It is locally used for thatching the roofs of huts.

SPECIMEN COLLECTED: M.R. Almeida - 155.

DAVALLIACEAE

Leucostegia. Presl.

1. ***Leucostegia immersa*** Presl, Tent. Pterid. 95, 1836; beddome, Handb. 51; Birdwood, J. Bombay nat. Hist. Soc. 10(3): 431; Blatter & d'almeida, 42, f. 5A; Eubank, 191.

Acrophorus immersa Moore, in Proc. Linn. Soc. London 2: 286, 1839; Bedd., F.S.I. 4; t. 11, 1863; Gray, 376.

Quite a common epiphytic or lithophytic species at Mahabaleshwar. It is a common fern but it lasts up to January end only.

SPECIMEN SEEN: M.R. Almeida – 735.

THELYPTERIDACEAE

Christella Holttum

1. ***Christella papilio*** (Hope) Holttum Apud Nayar, Comp. Ferns Brit. India 208, 1974. *Nephrodium papilio* Hope, J. Bombay nat. Hist. Soc. 12: 625, 1899.
Nephrodium molle var. *major* Bedd., Handb. Suppl. 76, 1892 (p.p.).

Quite a common fern on sides of water-courses and in moist shady forest undergrowths.

ASPLENIACEAE

Asplenium Linn.

1. Epiphytes; texture thick, leathery *A. indicum*
1. Terrestrial; texture thin, membranaceous
..... *A. inaequilaterale*

1. ***Asplenium inaequilaterale*** Willd., Sp. Pl. (ed.4) 5: 322, 1810; Hieron, Hedwigia 61: 22, 1919.

A. trapeziforme (non Roxb., 1832) sensu. Beddome, F.S.I. 45, t. 134, 1863; Gray, 376.

A. lunulatum var. *trapeziforme* Beddome, Handb. FBI 148, 1883; Birdwood, J. Bombay nat. Hist. Soc. 2((2): 127, 1887; Blatt. & McCann. 105 (p.p. excluding synonym)

Found in white loamy soil and calciferous deposits. It is a rare fern at Mahabaleshwar.

SPECIMEN SEEN: N.Y. Dalzell – s.n. (1878).

2. ***Asplenium indicum*** Sledge, in Bull. Brit. Mus. (Nat. Hist.) Botany, 3(6): 264-5, 1965.

Asplenium laciniatum sensu Beddome, F.S.I. 49, t. 145, 1863 & Handb. 154, 1883 (non Don, 1825); Birdwood, 211; Blatt. & d'Almeida, 108; Eubank, 193.

A. planicaule Wall. ex Metten., Asplen. 157, 1859; Gray, 376; Birdwood, J. Bombay nat. Hist. Soc. 1(4): 211 (non Lows, 1858).

A common epiphytic fern growing mostly on *Eugenia* and *Memecylon* species. But after wet season it is found in dried condition and fronds are seen hanging on host stems.

ATHYRIACEAE

1. Sori only one on the acroscopic sides of the veins; annuals *Athyrium*
1. Sori both sides of the veins; perennials *Diplazium*

Athyrium Roth

1. Frond simply pinnate, or sometimes lobed with much larger acroscopic lobe to each pinna; pinnae sessile *A. falcatum*
1. Fronds bipinnate or tripinnate; no large lobe to the acroscopic side of the pinnae; at least lower pinnae petiolate 2
2. Fronds up to 30 cm tall 3
3. Sori usually kidney-shaped *A. anisopterum*
3. Sori ovate, running along the veins *A. hohenackerianum*
2. Fronds above 40 cm tall 4
4. Fronds tripinnate *A. spinulosum*
4. Fronds bipinnate 5
5. Lobes ovate, margins and apex serrate *A. filix-foemina* var. *flabellata*
5. Lobes deltoide, margins and apex fimbriate *A. filix-foemina* var. *pectinata*

1. ***Athyrium anisopteris*** Christ. in Bull. Herb. Boiss. 6: 962, 1898; Sledge, in Bull. Brit. Mus. Bot. 2(2): 289, 1962.

A. macrocarpum Bedd., F.S.I. 51, t. 152, 1863 & Handb. F.B.I. 165, 1883 (p.p.) (non *Aspidium macrocarpum* Blume); Blatt. & d'Almeida, 112.

A rare species found near watercourses. It is very much allied to *A. hohenackerianum* Moore, but it differs from it in having kidney shaped sori.

OCCURRENCE: October.

SPECIMEN SEEN: M.R. Almeida – 711.

2. ***Athyrium falcatum*** Bedd., Ferns South India, 51, t. 151, 1863 & Handb. F.B.I. 164; Gray, 376; Blatt. & d'Almeida, 113; Eubank, 194.

A. drepanophyllum Baker, in Hook. & Baker, Syn. Fil. (ed. 2) 226, 1868.

One of the common monsoon species found all over Mahabaleshwar. It is generally found on earthen embankments in semi-shaded places. It has a fleshy succulent stem.

OCCURRENCE: July - October.

SPECIMEN COLLECTED: M.R. Almeida – 706.

3. **Athyrium filix-foemina** var. **flabellata** Wall. ex clarke, in Trans. Linn. Soc. London, 2(bot. 1) 493, t. 60, 1880; Beddome, Handb. 170; Birdwood, 123; Blatter & d'Almeida 115.

One of the common ferns at Mahabaleshwar. It grows on shady earthen embankments. It is usually seen with *A. hohenakerianum* Moore and *A. falcatum* Bedd., and is very difficult to separate from the former in dried herbarium material but is easily recognisable in the field due to its less succulent nature.

SPECIMEN SEEN: M.R. Almeida – 725a, 727.

4. **Athyrium filix-foemina** var. **pectinata** Wall. ex Clarke, in Trans. Linn. Soc. London, 2(bot. 1); 492, t. 57, 1880; Blatter & d'Almeida, 114.

A. pectinatum Wall. ex Hope, in J. Bombay nat. Hist. Soc. 14(2): 253, 1902 (non Bedd., 1863).

A. filix-foemina (non Linn. 1753) sensu Bedd. F.S.I. 51, t. 154, 1863.

This variety is also found very commonly along with its allies. It generally grows on earthen embankments in monsoon but it dries off soon after the rains stop.

SPECIMEN SEEN: M.R. Almeida – 710.

5. **Athyrium hohenakerianum** (Kze.) Moore, Index Fil. 126, 1857; Beddome, F.S.I., 150 & Handb. 163; Blatter & d'Almeida, 111, f. 9; Eubank, 194.

Allantodea hohenakerianum Kuntze, in Schk. Fil. suppl. 2:63, t. 26, 1837.

The most succulent among the ferns. It is found on earthen embankments during monsoon, and is the first species to dry off immediately after rains.

SPECIMEN SEEN: P.V. Bole – 1116.

6. **Athyrium spinulosum** (Maxim) Milde, Bot. Zeit. 376, 1866; Bedd., Handb. 161. *Cystopteris spinulosa* Maxim., Mem. Acad. St. Petersb. 9: 340, 1859.

There is one specimen of this species at central National Herbarium, Calcutta identified

by its collector as *Athyrium filix-foemina*. On the specimen there are remarks written in pencil. "This is a remarkable cut and developed fern, which I can not name". On this sheet there is also a mark of initials followed by date – 25/1/6, which according to the staff of CNH, is the signature of Sir George Watt. They are of the opinion that this sheet is from King's collection.

Diplazium Sw.

1. **Diplazium esculentum** (Retz.) Swartz., Syn. Fil. 92 & 285, 1806.

Hemionitis esculenta Retz., Obs. Bot. 38, 1791.

Callipteris esculenta J. Sm. ex Moore et Houst., Gard. Mag. bot. 3: 265, 1851; Bedd., F.S.I. 54, t. 164; Gray, 376.

Anisopteris esculentum (Retz.) Presl, Rel. Hoenk.

1(6): 45, 1836; Bedd., Handb. 192, f. 94; Blatter & d'Almeida, 120; Eubank, 193.

A common fern on riverbanks. Sometimes seen partially submerged in water. It grows well inland and is also grown in pots at several places.

SPECIMEN SEEN: T. Cooke – s.n.

ASPIDIACEAE

1. Veins anastomosing..... *Tectaria*
1. Veins free 2
2. Indusium hairy; whole plant covered with silky unicellular hairs..... *Hypodematium*
2. Indusium glabrous; plants not covered with unicellular hairs *Dryopteris*

Dryopteris Adanson

1. Fronds ovate-lanceolate, dimorphic; fertile pinnae almost half of the size of those of sterile *D. cochleata*
1. Fronds more or less triangular; fertile as well as sterile pinnae similar in size and shape..... *D. sparsa*

1. **Dryopteris cochleata** (D. Don) C. Chr., Index Fil. 258, 1905.

Nephrodium cochleatum D. Don, Prod. Fl. Nepal. 6, 1825.

Lastrea cochleata (D. Don) Moore, Ind. Fil. 88, 1857; Gray, 376.

L. filix-mass var. *cochleata* Bedd., F.S.I. 51, t. 115, 1863 & Handb. 250; Birdwood, 128; Blatter & D'Almeida 143; Eubank, 191.

A quite common fern in deeply shaded forest areas, in humid black soil among decaying leaf mould.

SPECIMEN SEEN: M.R. Almeida – 778.

2. **Dryopteris sparsa** (D. Don) O. Kuntze, Rev. Gen. Pl. 2:813, 1891.
Nephrodium sparsum D. Don, Prod. Fl. Nepal. 6, 1825.
Lastrea sparsa (D. Don) Moore, Index Fil. 87, 1858; Bedd., F.S.I., 36, t. 103, Handb. 252; Gray, 376; Birdwood, 432; Blatter & d'Almeida, 144.
Found near the waterfalls in shady places.
SPECIMEN SEEN: A. Dhanraj – 413.
3. **Dryopteris odontoloma** (Moore) C. Chr., Acta Hort. Gothob. 1:59, 1924.
Lastrea odontoloma Moore, Ind. Fil. 90, 1858; Beddome. Handb. F.B.I. 248, f. 128, 1883; Blatter & d'Almeida, 141.

This species has been reported from Kate's point, Mahabaleshwar, by Blatter & d'Almeida (1922). We have not been able to locate it in the field as well as in any herbarium.

Hypodematium Kunze

1. **Hypodematium crenatum** (Forsk.) Kuhn, V. Deck. Reis. bot. 3(2): 37, 1879.
Polypodium crenatum Forsk., Fl. Aegypt. Arab. 185, 1775.
Lastrea crenata (Forsk.) Bedd., Handb. F.S.I. 258, 1883; Blatter & d'Almeida, 147.

Found on old walls and on old earthen embankments. It is also found lithophytic on rocky surfaces in shady places.

Tectaria Cav.

1. Margins almost entire or slightly crenate
.....*I. macrophylla*
1. Margins serrately dentate. *I. macrodonta*
1. **Tectaria macrodonta** (Fee) C. Chr. in Index Fil. suppl. 3: 181, 1934.
Saenia macrodonta Fee, Gen. Fil. 213, t. 24A, f. 1, 1852.
Aspidium cicutarium (non Swartz, 1803) sensu Bedd., Handb. Ferns British India, 220, 1883; Birdwood, 211; Blatter & d'Almeida, 132, f. 12; Eubank, 193

(non *Polypodium cicutarium* Linn., 1764).

Saenia coadunata Wall. ex Bedd., F.S.I., 28, t. 81, 1863; Birdwood, 211; Gray, 376.

Aspidium coadunatum Hook. et Grev., Icon. Fil. t. 202, 1831.

The commonest species found at Mahabaleshwar in shady places, in loose, black soils.

SPECIMEN SEEN: M.R. Almeida – 248.

2. **Tectaria macrophylla** (Sw.) Copel. in Philippine J. Sci. Bot. 2:413, 1907.
Aspidium macrophyllum Swartz, Syn. Fil. 43 & 239, 1806; Blatter & d'Almeida, 133.
Known from only one collection from Mahabaleshwar.
SPECIMEN SEEN: N. Gunjathkar – 34 (Poona Univ. Herb).

POLYPODIACEAE

1. Sori acrostichoid; fronds dimorphic *Leptochilus*
1. Sori round; frond not dimorphic 2
2. Sori in a single row on either side of the midrib
..... *Lepisorus*
2. Sori scattered over entire frond *Microsorium*

Lepisorus Ching

1. **Lepisorus nudus** (Hook.) Ching, in Bull. Fan. Mem. Inst. Biol. Bot. 4: 83, 1933.
Pleopeltis nuda Hook. Exot. Fl. 1: 63, 1823.
P. linearis Moore, Ind. Fil. 346, 1862 (non Kaulf, 1824); Bedd., Handb. 346; Birdwood, 128; Blatter & d'Almeida, 170; Eubank, 191.

A common epiphytic fern all over Mahabaleshwar. This species develops fronds in monsoon which dry and curl after the rainy season. The rhizome remains dormant during summer. Common hosts for this epiphytic species are *Eugenia jambolana* and *Memecylon umbellatum*.

SPECIMEN SEEN: M.R. Almeida – 726.

Leptochilus. Kaulf.

1. **Leptochilus lanceolata** Fee, Arcost. 37, t. 47, f. 1, 1845.
Gymnopteris lanceolata Bedd., F.B.I. suppl. 26, 1876. *G. variabilis* var. *lanceolata*

Bedd., Handb. F.B.I. 429, 1883.
 Birdwood, 127; Blatter & d'Almeida, 186.
 Found near watercourses attached to rocks.
 SPECIMEN SEEN: T. Cooke – s.n.

Microsorium Link

1. ***Microsorium membranaceum* (Don) Ching**, in Bull. Fam. Mem. Inst. Biol. bot. 4: 295, 1933.
Polypodium membranaceum Don, Prodr. Fl. Nepal. 2,

1825.

Pleopeltis membranaceus (Don) Bedd., Handb. Ferns Brit. India, 357, 1883; Gray, 376; Birdwood, 128; Blatter & d'Almeida, 172; Eubank, 191.

The commonest and most abundant fern at Mahabaleshwar. Every *Ficus racemosa* tree in Mahabaleshwar Bazar is covered with this species in monsoon. It grows on rocks and on roofs of old houses.

SPECIMEN SEEN: M.R. Almeida – 701.

(Concluded)



Bole, P. V. and Almeida, M. R. 1989. "MATERIAL FOR THE FLORA OF MAHABALESHWAR INDIA 8. PTERIDOPHYTES." *The journal of the Bombay Natural History Society* 86, 400–407.

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