published literature, dealing with fern flora of Kumaon Himalaya (Dhir 1980; Dixit 1984; Khullar *et al.* 1991; Fraser-Jenkins 1997; Khullar 2000; Chandra 2000; Pande and Pande 2002; Dixit and Kumar 2002), has not indicated its presence in Kumaon so far. In fact, Ching (1964) described *D. acuta* from specimens in Herb. Schagintweit *s.n.* collected in the year 1855 from Chamoli Garhwal (Badrinath) between 3000 and 3300 m altitude in India. Chandra (2000) has given the locality Chamoli Garhwal in the north-western Himalaya for this widespread Himalayan species and of high Asia. However, Khullar (2000) has given its distributional range from Pakistan, Kashmir, Himachal Pradesh and Chamoli Garhwal (Badrinath) in Uttaranchal between 2300 and 3800 m altitude in the western Himalaya. It was also reported from the same localities by Dixit and Kumar (2002). However, Fraser-Jenkins (pers comm.) indicated that he has found this species occurring throughout the Indo-Himalaya from Pakistan, Kashmir, Himachal Pradesh (Kulu, Shimla, Narkanda) Uttaranchal (Chamoli Garhwal, Badrinath), Nepal, Sikkim, presumably further east, S.E. China, S.W. Tibet.

This species is being collected and reported for the first time from Kumaon Himalaya, and thus forms a new record for its fern flora. Voucher specimens are deposited in the Herbarium, Department of Botany, D.S.B. Campus, Kumaon University, Nainital.

***Deparia acuta*** (Ching) Fras.-Jenk., New Sp. Syndr. Indian Pterid. & Ferns Nepal: 104 (1997): Khullar. Ill. Fern Fl. West Him. 2:107. t. 37 (2000). Chandra. Ferns India: 144 (2000): Dixit & Kumar. Pterid. Uttaranchal: 100 (2002). *Lunathyrium acutum* Ching. Acta Phytotax. Sinica 9: 73 (1964).

**Ecology**: Grows on hilly-forested slopes in open situations near streams between 2600 and 2800 m altitude.

**Specimens examined**: Kumaon Bageshwar District, Madhari pass (Pangtey & Samant 1415); Chakhuwa (Pangtey & Samant 1514); above Namik village (Pangtey & Samant 1515).

**Distribution**: India (Kashmir, Himachal Pradesh, Uttaranchal, Sikkim), Nepal, S.E. China, S.W. Tibet.

I thank Mr. C.R. Fraser-Jenkins, British Museum, London for his help in the identification, literature and encouragement. Thanks are due to Head, Department of Botany, D.S.B. Campus, Kumaon University, Nainital for providing facilities.

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**REFERENCES**

CHANDRA, S. (2000): The Ferns of India (Enumeration, Synonyms & Distribution). International Book Distributors. Dehradun. Pp. 1-459.

CHING, R.C. (1964): On some confused genera of the family Athyriaceae. *Acta Phytotax. Sinica 9*: 41-84.

DHIR, K.K. (1980): Ferns of north-western Himalaya. *Bibliotheca Pteridologia 1*: 1-150.

DIXIT, R.D. (1984): A Census of the Indian Pteridophytes. Botanical Survey of India, Howrah. Pp. 1-177.

DIXIT, R.D. & R. KUMAR (2002): Pteridophytes of Uttaranchal (A Checklist). Bishen Singh Mahendra Pal Singh, Dehradun. Pp. 1-159.

FRASER-JENKINS, C.R. (1997): New Species Syndrome in Indian Pteridology and the Ferns of Nepal. International Book Distributors, Dehradun. Pp. 1-403.

KHULLAR, S.P. (2000): An Illustrated Fern Flora of the West Himalaya. Vol. II. International Book Distributors, Dehradun. Pp. 1-538.

KHULLAR, S.P., Y.P.S. PANGTEY, S.S. SAMANT, R.S. RAWAL & P. SINGH (1991): Ferns of Nainital. Bishen Singh Mahendra Pal Singh, Dehradun. Pp. 1-227.

PANDE, P.C. & H.C. PANDE (2002): Pteridology in Western Himalaya (Kumaon). Bishen Singh Mahendra Pal Singh, Dehradun. Pp. 1-215.

## 31. *MATTEUCCIA INTERMEDIA* C. CHR. (ONOCLEACEAE: PTERIDOPHYTA): AN ADDITION TO THE FERN FLORA OF INDIA

The fern flora of India is very well known today with respect to taxonomy, ecology and distribution through the works of Clarke (1880), Beddome (1883, 1892), Hope (1900), Dixit (1984) and Chandra (2000) and several others. However,only one species of *Matteuccia* i.e. *M. orientalis* (Hook.) Trev has been reported from India so far.

From the north-western Himalaya of India also, only one species *M. orientalis* has been reported (Duthie 1906; Dhir 1980; Khullar 2000; Pande and Pande 2002; Dixit and Kumar 2002) based on the collections made by Gamble in 1894 and Duthie in 1897 from Lokandi peak / hill in Jaunsar Garhwal Hope (1900) and Pangtey *et al.* (1988) from Kumaon. There are only three collections available from western Himalaya, two from Garhwal Himalaya by Duthie and Gamble in Hope (1900) and one from Kumaon by S.S. Samant in Pangtey *et al.* (1988).

While compiling the fern flora of Uttaranchal, I re-examined the specimens of this species in the Herbarium of the Department of Botany, D.S.B. Campus, Kumaon University, Nainital and found that these specimens differ

greatly from *M. orientalis*. The two species may be readily separated by the following key.

KEY TO SPECIES

1. Sterile fronds taper gradually right down to a very narrow base and more shallowly lobed; fertile fronds truncated but little narrower at the base ..... *M. intermedia*
2. Sterile fronds widely truncated and lobed; fertile fronds similarly truncated at their bases ..... *M. orientalis*

*M. intermedia* was described by C. Christensen (1913) from west China and Sikkim. Strangely, previous workers, especially Dixit (1984) and Chandra (2000), have made no reference to this species in Indian fern flora so far. Fraser-Jenkins (pers comm.) informs me that he has collected this species from near Lachung in north Sikkim. He has collected both, *M. intermedia* and *M. orientalis* in Nepal, but they never grow together. Thus, the collection of this species, from Uttaranchal, is an addition to the fern flora of the western Himalaya, in particular and India, in general; and extends its distributional range from Sikkim to Uttaranchal in India. This species is so far known from India, Nepal and W. China.

In the present paper; a brief description, ecology and distribution have been provided to facilitate its easy identification in the field. Voucher specimens are deposited in the Herbarium, Department of Botany, D.S.B. Campus, Kumaon University, Nainital.

***Matteuccia intermedia*** C. Chr., Bot. Gaz. (Chicago) 56: 337 (1913).

Rhizome erect, ascending, thick, densely scaly; scales brown, lanceolate. Fronds dimorphic; stipes light-brown, 15-30 cm long, thick, densely scaly and fibrillose; scales light-brown, concolorous, linear-lanceolate, entire, acuminate; rachis similar to stipe; sterile lamina, lamina pinnate, ovate-oblong, texture herbaceous, glabrous; pinnae many pairs, alternate, sessile, close, lanceolate, margin shallowly lobed less than half way to costa, lobes many, broad, oblong-falcate, acute, margin generally entire, slightly recurved, lower pinnae gradually taper right down to a narrow base; veins free, 5-7 pairs per lobe, pinnate or forked, glabrous, costae scaly on lower surface, scales brown, linear-lanceolate, entire, acuminate; fertile lamina as long as sterile lamina or little shorter, pinnate, pinnae many, very much contracted, oblong, margin reflexed covering the entire surface, dark-brown, glabrous, lower pinnae little narrower; sori indusiate; spores perinate, bilateral, monolete.

**Ecology**: Extremely rare and grows in moist-shaded, dark humus rich ground, along perennial streams in oak forest *c.* 2500 m altitude.

**Specimens examined**: Kumaon Bageshwar District, *en route* Sundardhunga Glacier in Pindari valley (S.S. Samant 1243).

**Distribution**: India (Kumaon, Sikkim), Nepal, W. China.

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## REFERENCES

BEDDOME, R.H. (1883): A Handbook to the Ferns of British India, Ceylon and Malay Peninsula. Thaker Spink & Co., Calcutta. Pp. 1-500.

BEDDOME, R.H. (1892): Supplement to the Ferns of British India, Ceylon and Malay Peninsula with Supplement. Thaker Spink & Co., Calcutta. Pp. 1-110.

CLARKE, C.B. (1880): A review of the ferns of northern India. *Trans. Linn. Soc. Lond II (Bot.) 1*: Pp. 425-611.

CHANDRA, S. (2000): The Ferns of India (Enumeration, Synonyms & Distribution). International Book Distributors. Dehradun. Pp. 1-459.

CHRISTENSEN, C. (1913): Filices Purdomianae. *Bot. Gaz. (Chicago) 56*: 331-338.

DHIR, K.K. (1980): Ferns of north-western Himalayas. *Bibliotheca Pteridologia 1*: 1-150.

DIXIT, R.D. (1984): A Census of the Indian Pteridophytes. Botanical Survey of India, Howrah. Pp. 1-177.

DIXIT, R.D. & R. KUMAR (2002): Pteridophytes of Uttaranchal (A Checklist). Bishen Singh Mahendra Pal Singh, Dehradun. Pp. 1-159.

DUTHIE, J.F. (1906): Catalogue of the plants of Kumaon and of the adjacent portions of Garhwal and Tibet based on the collections made by Strachey and Winterbottom during the years 1846 to 1849 and on the catalogue originally prepared in 1852 by Sir Richard Strachey. London. Lovell Reeve & Co., Limited, London. Pp. 1-269.

HOPE, C.W. (1900): The ferns of north-western India including Afghanistan, the Trans-Indus protected states and Kashmir. *J. Bombay Nat. Hist. Soc. 12(1)*: 25-36.

KHULLAR, S.P. (2000): An Illustrated Fern Flora of the West Himalaya. Vol. II. International Book Distributors, Dehradun. Pp. 1-538.

PANDE, P.C. & H.C. PANDE (2002): Pteridology in Western Himalaya (Kumaon). Bishen Singh Mahendra Pal Singh, Dehradun. Pp. 1-215.

PANGTEY, Y.P.S., S.S. SAMANT, N.S. BANKOTI & R.S. RAWAL (1988): *Matteuccia orientalis* (Hook.) Trev. (Onocleaceae): A new record for Kumaon Himalaya. *Indian J. For. 11*: 171-172.



Pangtey, Y P S. 2005. "Matteuccia Intermedia C. Chr. (Onocleaceae : Pteridophyta): An Addition To the Fern Flora of India." *The journal of the Bombay Natural History Society* 102, 375–376.

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