

Occurrence of *Botrychium dusenii* Alston [Botrychiaceae] in Darjiling Hills: a new record for the state of West Bengal, India

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Abstract

Recent collection of *Botrychium dusenii* Alston [Botrychiaceae] from the subalpine habitat of Sandhakphu (3660 m) in Darjiling hills is a new record of its occurrence for the state of West Bengal. The plant is very sparsely distributed in the area.

Key words: *Botrychium dusenii*, New record, Darjiling hills, West Bengal

The District of Darjiling, West Bengal lies between 26°31' and 27° 13' N latitude and between 87°59' and 88°53' E longitude (O'Malley 1907). The hills of Darjiling forms a small segment of Eastern Himalaya and is spreading over around 2436.55 km² or 77 % area of the Darjiling District. The altitudinal variation ranges from 150 m (at Sukna) to 3660 m (at Sandakphu-Phalut) which presents diverse topographical condition and offer suitable habitat for the occurrence of wide range of plants (Das 1995, 2004; Acharya & Acharya 2001).

Regular field trips were made during April 2012 to July 2013 for documentation of fern and fern allies in various forest tracts of Darjiling hills and the collected specimens were processed into mounted herbarium-sheets following conventional techniques (Jain & Rao 1977). Specimen were identified by matching with the pre-identified specimens in the Herbarium of the Llyod's Botanical Garden, Darjiling (Accession no:1585, location: near quantiola sikkim, Altitude: 12000m, Collected by Smith and Cave) as well as consulting published literature including Mehra & Bir (1964); Hara (1966); Mathew (1971); Chowdhury (1973); Ghosh *et al* (2004) and Fraser-jenkins (2008). The plant was identified as *Botrychium dusenii* Alston of Botrychiaceae. Voucher specimens have been deposited in the Herbarium of Llyod's Botanical Garden and at the Herbarium of the Botany department, St. Joseph college, Darjilling. However, while studying the distribution of the species, it was revealed that the plant was not recorded previously from the Darjiling hills as well as from the state of West Bengal. So, the present collection of the species from Darjiling Hills forms the new record for this region as well as for the state of West Bengal. A brief description of the species along with sketches is provided here for its easy identification.

Botrychium dusenii Alston, Lilloa 30: 107. 1960. *Botrychium lunaria* (Linnaeus) Swartz in Schrad. J. 1800 (2): 110. 1801; Clarke in Trans.Linn. Sco. Lond., II, Bot., 1, 587, 1880; Beddome, Handb. Ferns Brit. India (with Suppl.), 469, t. 293. 1892. *Osmunda lunaria* Linnaeus, Sp. Pl. 2: 1004. 1753.

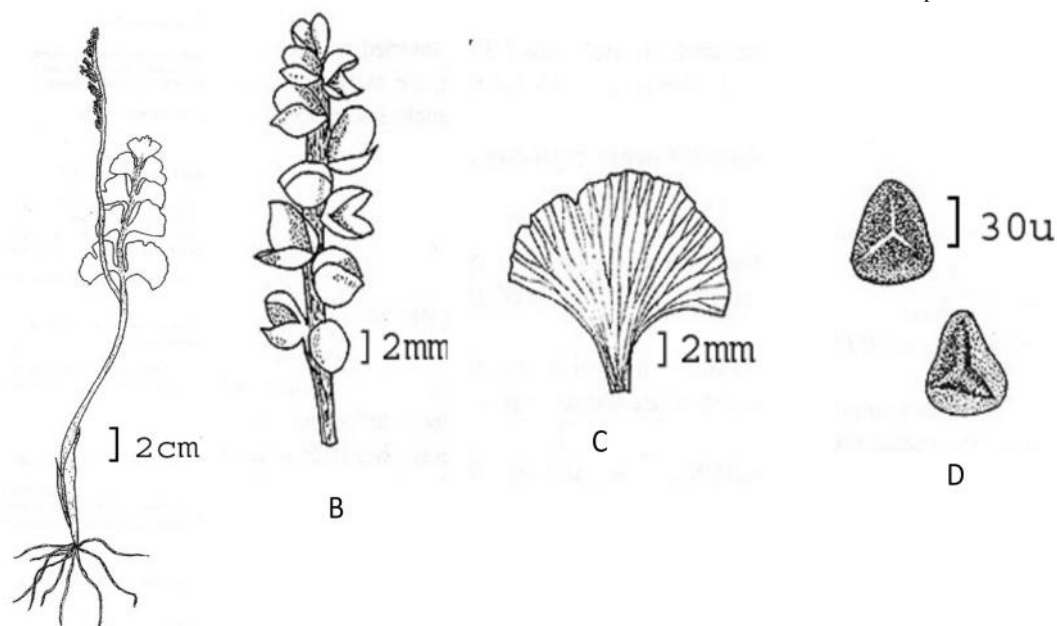


PLATE - I: *Botrychium dusenii* Alston: A. Habit; B. Fertile sporophore; C. Sterile pinnae showing venation; D. Spores

Rhizome short, erect, annually producing 1 frond, 5 – 15 cm tall. Common stipe greenish, cylindrical, 4 – 12 cm, 2 – 3 mm in diameter, hollow, succulent. Sterile lamina pinnate, sessile, broadly lanceolate or oblong, 3 – 8 x 1.5 – 2.5 cm, fleshy, leathery, glabrous, apex rounded or blunt, pinnae 4 – 6 pairs, approximate, often overlapping, opposite or almost opposite, flabellate, lunate or reniform, 1 – 1.5 cm long and wide, shortly stalked to almost sessile, lowest 1 or 2 pairs 1 – 2 cm apart, margin entire, veins free, flabellately forked, glabrous. Sporophore with stalk 4 – 7 cm, glabrous; panicle 2 – 3 pinnate, racemose, 3 – 6 x 1.5 – 2 cm, glabrous; sporangia sessile, large, 0.5 – 1 mm in diameter. Spores yellowish, 40 – 50 μm, tetrahedral, verrucose.

Exsiccates: West Bengal, Darjiling hills, Sandhakphu, 24.06.2013, *Nayan Thapa* 142A (SJC BH), LBG014252 (Llyod's Botanical Garden).

Distribution: India (Western Himalaya, Sikkim, and now from West Bengal), Nepal, China, Thailand, Australia, North America, Pacific Island.

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