

Notes on occurrence of *Adiantum flabellulatum* L. – a less known fern from Meghalaya

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Abstract

Adiantum flabellulatum L. – a rare species of fern has recently been collected from Umran in Ri-Bhoi district of Meghalaya. A brief description and photographs are provided to facilitate its easier identification.

Keywords

Adiantum flabellulatum, Pteridophyte, Ri-Bhoi district, Meghalaya

Introduction

The genus *Adiantum* L. is evidently an old and morphologically isolated genus belong to family Adiantaceae. The genus is pantropical in distribution with extensions northward to Newfoundland, Alaska, and NE Asia, and southward to southern South America, southern Africa, and New Zealand. Many species grow in primary or secondary forest, others on cliffs or on rocky slopes (Kramer & Green, 1990). About 225 species known under the genus from across the world (Huiet *et al.*, 2015) and about 31 taxa are recorded from India (see Fraser-Jenkins 2008), however some records are dubious and need a detailed study.

Adiantum flabellulatum L. [distributed globally in India, Sri Lanka, Japan, Myanmar, China, Taiwan and S.E. Asia; Fraser-Jenkins *et al.*, 2015] is a rare species in India, reported from Assam, Meghalaya and Manipur in NE India only (Chandra *et al.*, 2008). Regional herbarium study (ASSAM) reveals that only 10 specimens belong to this species are from Garampani, Garbhanga Reserve Forests, Haflong and Kopili (all in State of Assam). Though, in Meghalaya, this species had earlier been reported from Umroi in Ri-Bhoi District (Baishya & Rao, 1982) but no herbarium specimens available. The present collection is from 'Breezedale forest', a rather well preserved private forest in Umran Niangbyrnai Village, Umran, Ri-Bhoi

District. Four populations, with a total of less than a hundred plants were located here. Considering its rarity, we are attempting to provide updated information about the species based on our recent collections.

Adiantum flabellulatum L., Sp. Pl. 2: 1095. 1753. *Adiantum fuscum* Retz., Obs. Bot. 2: 28, t. 5. 1781. *Adiantum amoenum* Wall. ex Hook. & Grev., Icon. Fil. 1(6): t. 103. 1828. *Adiantum bonii* Christ, J. de Bot. 8: 150. 1894.

A terrestrial, erect, rhizomatous fern, with stipes up to 40 cm high. Rhizome short, branched, semi-erect, c. 0.5 cm across, scaly; scales dark-brown, linear c. 0.5 cm long, 0.8 mm broad. Stipe black, up to 40 cm long, distinctly grooved with short stiff brown hairs inside, asymmetrically branched, compound-fronded with rather rounded and toothed segments, base covered with brown scales, glabrous on upper side. Lamina flabellate, bipartite, pedately divided, tripinnate or occasionally quadripinnate, ovate-cordate in shape, c. 20 – 25 × 18 cm. Pinnae alternate, sometimes solitary on the ultimate branches; basal pinnae stalked and upper ones almost sessile or subsessile; pinnules glabrous, subcoriaceous, obliquely cuneate or semiorbicular-cuneate, lower margin almost straight or slightly concave, base straight or concave, smooth, outer margin convex, 2 – 4-lobed, the lobes



Fig. 1. *Adiantum flabellulatum* A. Habit B. Young plant C. Scales on rhizome & stipe D. Pinnae with sori E. Hairs on stipe F. Venation in pinnae.

subserrate, apex rounded; rachis and branches covered by a felt of hairs. Sori transversely oblong, crowded all over the outer margin, c. 2 mm broad and 5 mm long; false indusia dark brown, sub-orbicular, persistent.

Fertile : May - June.

Distribution: INDIA [Assam, Meghalaya, Nagaland, Manipur, Tripura], CHINA, TAIWAN, JAPAN, MYANMAR, SRI LANKA AND S.E. ASIA (Fraser-Jenkins *et al.*, 2015).

Specimen examined: Meghalaya, Ri-Bhoi District, Umran Niangbyrnai Village, 25°46'17.7" N, 91°52'22.10" E, alt. 705 m asl, 29.12.2015. *K L Chaudhary* 0001 (Herbarium of Lady Keane College). The specimen is found growing on soil in shaded areas.

Other specimens examined: Assam, Garampani, 1956. *G. Panigrahi*, 5406 (ASSAM); Assam, Garampani, 1956. *G. Panigrahi*, 5407 (ASSAM); Assam, Garampani, 1956. *G. Panigrahi* 58110 (ASSAM); Assam, Garbhanga Reserve Forest, 1957. *G. Panigrahi* 5408 (ASSAM); Assam, Garbhanga Reserve Forest, 1957. *G. Panigrahi* 5409 (ASSAM); Assam, Garbhanga Reserve Forest, 1957. *G. Panigrahi* 28594 (ASSAM); Assam, Garampani, *G. Panigrahi* 5410 (ASSAM); Assam, Garampani, 1974, *S.R. Ghosh*, 5411 (ASSAM); Assam, North Cachar Hills, Haflong, 1976, *N.C. Deori*, 82670 (ASSAM); Assam, North Cachar Hills, Kopili, 2007, *R.S. Baruah*, 68542 (ASSAM);

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