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Selaginella reticulata (Hooker *ex* Greville) Spring (Selaginellaceae): a new record for Assam

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Abstract

The fern-alley *Selaginella reticulata* (Hooker *ex* Greville) Spring (Selaginellaceae) is a new record for the state of Assam in India.

***Key words*:** *Selaginella reticulata*, New record, Assam.

INTRODUCTION

Northeastern region of India represents the transition zone of the Indian, Indo-Malayan and Indo-Chinese biogeographic regions and a meeting place of the Himalayan mountains and Peninsular India. The region is at the conjunction of the Eastern Himalayan and Indo-Burma biodiversity hotspots which is regarded as a major center of biodiversity and one of the hotspots biodiversity centers of Pteridophytes. The Northeastern region is the richest region of India in Pteridophytic flora (Bir *et al* 1989). Assam is one of the eight states of Northeastern India with rich pteridophytic flora, and has distinctiveness on account of their species diversity and peculiar formations. In spite of this, fern-allies of the state have not been studied in detail so far, except a few sporadic works (Alston 1945; Barua *et al* 1989; Bhattcharya *et al* 1995; Bir *et al* 1992; Dixit 1992; Dutta *et al* 1980; Handique & Konger 1986; Islam 1983; Nath & Bhattacharya 2002; Panigrahi 1960; Thakur 1962). Most of the earlier works cover parts of northeast India other than present Assam as a part of undivided Assam of fifties and sixties of the last century.

During the course of on going studies on Fern-allies of Assam, the authors collected some specimens of *Sellaginella* Beauverd and later identified as *Selaginella reticulata* (Hooker *ex* Greville) Spring. Careful scrutiny of relevant literatures (Alston 1945; Baishya & Rao 1982; Barua *et al* 1989; Bhattcharya *et al* 1995; Bhattcharya *et al* 1998; Bir 1976; 1987; 1993; Bir *et al* 1992; 1989; Borthakur *et al* 2001; Dixit 1984; 1992; Dixit & Vohra 1984; Dutta *et al* 1980; Fraser-Jenkins 2008; Handique & Konger 1986; Islam 1983; Jain 1991; Kachroo *et al* 1989; Kaur & Chandra 1994; Manickam & Irudayaraj 1992; Mukhopadhyay 2001; Nath & Bhattacharya 2002; Panigrahi 1960; Panigrahi & Choudhury 1962; Panigrahi & Dixit 1967; 1967a; 1968; Singh & Panigrahi 2005; Thakur 1962) revealed that the species has never been reported before from the present political boundary of Assam and hence the occurrence of *Selaginella reticulata* (Hooker *ex* Greville) Spring has been recorded for the first time in Assam.

A brief description of the species along with photographs is provided here for easy identification. The newly collected specimens were processed and mounted on standard herbarium sheets following Jain & Rao (1976) and have been deposited in the Herbarium of Botany Department, Gauhati University (GUBH).

Selaginella reticulata (Hooker *ex* Greville) Spring, Bull. Acad. Brux. 10: 233. 1843.

Plant body (**Fig. A**) terestrial, light-green, turns light-brown on maturity or on bearing sporangium (**Fig. A**), *ca* 6 – 15 cm long, tufted; stem (**Fig. B**) erect, slender, profusely branched from base, branches alternate. Rhizophores wiry, unbranched, confined mostly to lower one-third part of

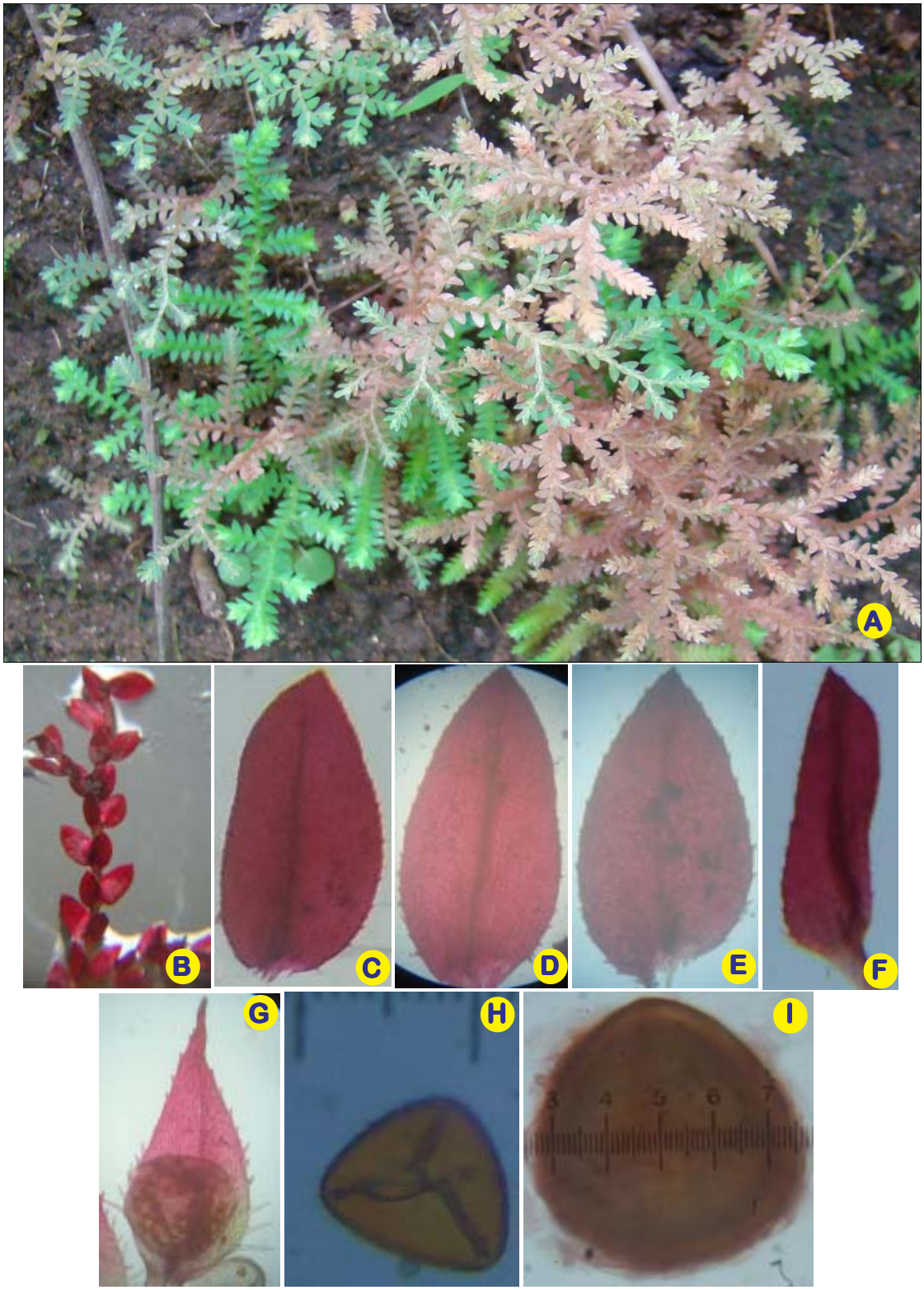

Figure 1. ***Selaginella reticulata*****: A.** Habit; **B.** Main stem with leaves; **C.** Lateral leaf; **D.** Axillary leaf; E. Median leaf; **F.** Larger sporophyll; **G.** Smaller sporophyll; **H.** Microspore; Megaspore

stem. Leaves heteromorphic, light green; lateral leaf (**Fig. C**) *ca* 1.8 – 2 x 0.8 – 1 mm with prominent dark mid-vein an angle of about 30°-60° with the stem or branch, dentate, ascending, rotundate at base, apex sub-acute, inner half-leaf semi-ovate, prominently dentate, outer half-leaf oblong-lanceolate, inconspicuously dentate; Axillary leaf (**Fig. D**) 1 – 1.3 x 0.6 – 0.8 mm, narrow-ovate, dentate, mid-vein prominent, apex sub-acute, distantly dentate; median leaf (**Fig. E**) *ca* 0.8 – 1.0 x 0.3 – 0.5 mm, ovate, oblique at base, apex sub-acute, distantly dentate. Strobili 5 – 7 x 2 – 3 mm, solitary at the apices of branchlet. Sporophylls fertile, dimorphic; larger sporophyll (**Fig. F**) *ca* 1.8 – 2 x 0.3 – 0.5 mm, are in the plane of median leaf, microsporangiate, ovate-oblong, acute, unifromly dentate throughout except the base of the outer half-part auricled and ciliate, inner-half part shows only 1 or 2-few cilia at base. Smaller sporophyll (**Fig. G**) are in the plane of lateral leaf, ca 1.4 – 1.6 x 0.7 – 0.9 mm, micro or mega sporangiate, ovate, ciliate at base, dentate above, acuminate, number of megaspore four per megasporangium. Microspore (**Fig. H**) bright orange, *ca* 29 – 42 ìm, smooth or granulose. Megaspores (**Fig. I**) *ca* 80 – 220 ìm, dark-brown, sometime at some parts exine is wavy in nature, granulose.

Distribution: INDIA: Arunachal Pradesh, Meghalaya, Assam; **MYANMAR**

Ecology: Terrestrial herb generally grows in patches in damp forest floor rich in humas or in moist shady places along the inclined hill slopes and in association with species of *Begonia*, *Adiantum*, mosses, etc.

Exsiccatae: Assam, NC Hills, Lower Haflong, 11.01.2009, *Himu Roy* 104 (GUBH).

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