

## Occurrence of *Pteris austrosinica* (Ching) Ching [Pterideaceae] in Darjiling Hills : a new record of endemic Chinese element in Indian Sub-continent

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### Abstract

Recent collection of *Pteris austrosinica* (Ching) Ching [Pterideaceae] from the tropical habitat of Singla (343 m ± 10) in Darjiling hills is a new record of its occurrence in the Indian subcontinent. The plant is a Chinese element, being stated as endemic to Guangdong, Guangxi, Jiangxi in China and its discovery in Darjiling hills has widened its geographical distribution. It assumes significance as this species has been included in the threatened Pteridophytes in Asia.

**Key words:** *Pteris austrosinica*, Endemic, New record, Darjiling Hills, Indian subcontinent.

### INTRODUCTION

*Pteris* Linnaeus (Pteridaceae) has a global distribution of Ca. 250 – 300 species (<http://www.efloras.org>), of which 50 spp and 7 sub species are known to grow in India (Fraser-Jenkins, 2008). Darjiling and Sikkim Himalaya, a segment of Eastern Himalaya of the Indian subcontinent is rich with the occurrence of 22 species and 5 subspecies of *Pteris*. 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 are occupying an area of 2436.55 km<sup>2</sup>, with altitude ranging from 150 m (at Sukna) to 3660 m (at Sandakphu - Phalut), presents diverse topographical conditions and offer suitable habitat for the occurrence of wide range of plants (Das 1995; Acharya & Acharya 2001). Floristically well explored but the occurrence of micro-niche in difficult terrains with negligible accessibility has lead some plants of the region to remain undiscovered even today. Recently, *Pteris roseoilacina* Hieronymus, a Chinese element was reported from Majuwa, a forest village in the fringes of Singallila National park, Darjiling Hills (Fraser-Jenkins 2008)

To explore the Pteridophytic flora of Darjiling Hills, regular field trips were made in numerous locations during April 2012 to July 2014 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 (LBG), Darjiling as well as through consultation of published literature including (Mehra & Bir 1964; Hara 1966; Mathew 1971; Chowdhury 1973; Ghosh *et al.* 2004; Fraser-Jenkins 2008).

However, one specimen remain unidentified, further literature survey was carried out using the ([www.efloras.org](http://www.efloras.org); Ching 1978; Ching & Wu 1990). Finally, the plant was identified as *Pteris austrosinica* (Ching) Ching [Pterideaceae] on the basis of its diagnostic character

viz. Pedate fronds, series of costal areole and brown multicellular hair on abaxial surface of segment (Ching, 1965). Voucher specimens have been deposited in the Herbarium of Llyod's Botanical Garden and Botany department, St. Joseph College, Darjiling. Further, the voucher specimen will be submitted in Central National Herbarium at Cal. However, available literature shows the distribution of the species, being endemic to China and is a threatened element (Ebihara *et al.*, 2012). Thus the present collection of the species from Darjiling Hills forms the new record for the species not only for West Bengal, but also for the entire Indian subcontinent. A brief description of the species along with sketches and photographs is provided here for its easy identification.

### Taxonomic treatment:

*Pteris austrosinica* (Ching) Ching, Acta Phytotax. Sin. 10: 302. 1965. *Pteris wallichiana* J. Agardh var. *austrosinica* Ching, Bull. Dept. Biol. Sun Yatsen Univ. 6: 27. 1933. [PLATES - I & II]

Plants terrestrial, erect, ca. 2 m tall; rhizome erect, short, thick, ca. 2.5 cm in diameter. Stem woody, apex with brown scales. Fronds clustered, stipe castaneous, up to 1.5 m, ca. 2 cm in diameter, glabrous, broadly grooved adaxially. Rachis chestnut coloured, narrowly grooved adaxially. Fronds pedate; Lamina usually 3-pinnatipartite, pentagonal-broadly ovate in outline, 90 – 120 × 90 cm, main central branch, 75 – 85 cm, peripheral branches 25 cm wide, stalked (8 – 10 cm), lateral branches smaller, usually again divided; lateral pinnules 14 – 20 pairs, alternate, decumbent, sessile or slightly shortly stalked, basal several pairs slightly shorter, ca. 1.5 cm apart, middle pinnules lanceolate, 15 – 20 × 3 – 4 cm, base broadly cuneate, nearly symmetrical, deeply pectinately divided leaving broadly winged costule, apex shortly linear-caudate; segments 22 – 30 pairs, alternate, sinuses obtuse-acute, 0.3 – 0.55 cm wide, slightly decumbent, falcate-lanceolate, 2-2.5 × ca. 0.3 cm, basally enlarged, apex shortly acuminate, sterile apex obtusely dentate; terminal pinnules similar to median lateral pinnules, stalked (ca. 1 cm); costules straw-colored, glabrous,

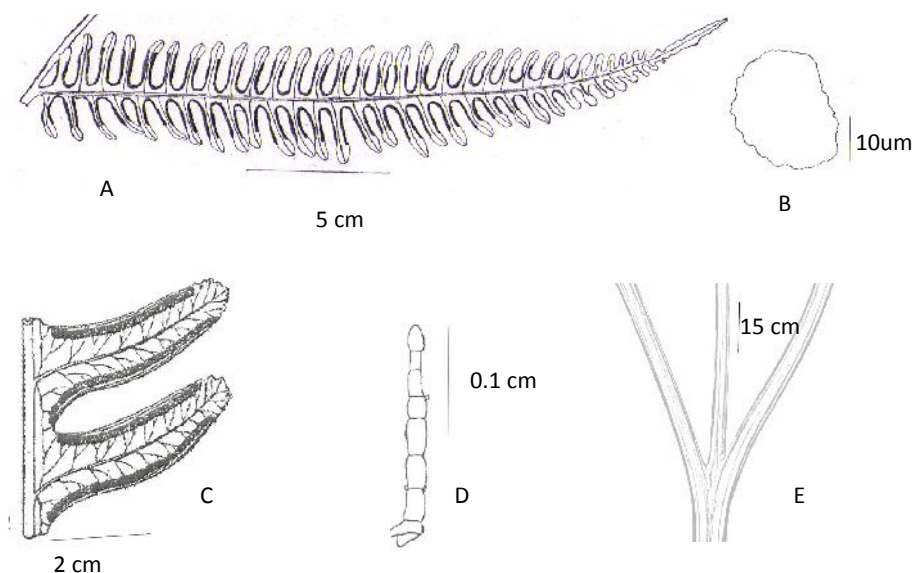


PLATE - I. *Pteris austrosinica* (Ching) Ching: A. Pinnules; B. Spore; C. Ultimate segments; D. Hairs on costules; E. Tripartite stipe apex



**PLATE - II.** *Pteris austrosinica* (Ching) Ching: A. Habit; B. Croizer; C. Pedat forking on stipe; D. Part of stipe; E. Pinnae with synsori; F. Hairs on lamina; G. Hair; H. Spore.

with short spines on both sides of adaxial groove; veins conspicuous, oblique, anastomosing to form a series of narrow areoles along costa, several simple veinlets reaching incision in outer edge of arcuate vein, and veinlet free outward from areole, and basal veinlet of segment 2-forked at base; lamina brown-green, papery when dried, below with brown slender multicellular hairs.

**Exsiccates:** West Bengal, Darjiling hills, Singla, 24.06.2013, *Nayan Thapa* 250A (SJC BH), LB-014240

**Global Distribution:** China (Guangdong, Guangxi, Jiangxi) and now in India.

**Local Distribution:** Singla (N27p O6'45.8" EO88p 16'31"; Altitude 335±14 m)

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