

ADIANTUM LATIFOLIUM (PTERIDACEAE): A NEW RECORD TO EASTERN GHATS FROM TAMIL NADU, INDIA

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Abstract

Adiantum latifolium Lam. is reported as a new record of Pteridaceae to Eastern Ghats of Tamil Nadu. This paper provides a brief description, illustrations and photographs, distribution and habitat ecology for easy identification of the species in the field.

Key words: *Adiantum latifolium*, Pteridaceae, Tamil Nadu, Eastern Ghats

Introduction

India has rich and varied pteridophytic flora due to its diversified topography, variable climatic conditions and geographical position with several migration flow of species from different parts of the country (Chandra *et al.*, 2008) which includes about 1000 species of ferns and fern allies (Benniamin *et al.*, 2008). Recently Fraser-Jenkins, (2012) reported the total number of pteridophyte species in India as c. 1100 and of these 337 taxa (nearly one third) are considered to be threatened or endangered. The Western Ghats is one of the global hotspots and one of the significant geographical regions. Around 233 species of ferns occur in Southern India (Manickam and Irudayaraj, 1992). The Western Ghats to a large extent presides over the ecology and biogeography of Peninsular India (Nayar and Daniel, 1986). Similarly the Eastern Ghats also contributed to the Indian biodiversity. Eastern Ghats located between 76° 50' and 86° 30' E longitudes and 11° 30' and 22° N latitudes are spread over three states of India namely Orissa, Andhra Pradesh and Tamil Nadu (Padal *et al.*, 2009). It stretches from Mahanadi Basin in the north to Vaigai basin in the south, covering a distance of 1700 km and spreading over an area of 75,000 sq. km with average elevation of the mountain range being about 600 m and the highest peak is in Shevaroy Hills that reaches up to the height of 1700 m. Eastern Ghats supports a rich array of tropical forests including pockets

of evergreen and semi-evergreen forests (Nayaka *et al.*, 2013). Alagar hills lies approximately between 77° 30' and 78° 20' longitude and 10° 05' and 10° 09' latitude located in Madurai district of Tamil Nadu. The floristic divisions consist of dry deciduous forest, deciduous thorn forest and moist deciduous forest (Palaniappan *et al.*, 2012). During the floristic survey in Alagar hills the authors have collected a rare species of fern and later its identity was conformed as an *Adiantum latifolium* Lam.

The genus *Adiantum* was first described by Linnaeus with about 150 species of ferns in the family Pteridaceae (Mabberley 2008; Smith 2006; Lindsay 2009). In India 25 species and 2 varieties of *Adiantum* have been listed. Dixit (1984) reported 10 species and one variety in South India, but he did not include *A. latifolium*. Later, Manickam and Irudayaraj (1992) have reported its distribution in Kerala, and its distribution in Tamil Nadu was uncertain. Sukumaran *et al.*, (2009) while studying diversity of some sacredgroves of Southern Western Ghats in Kanyakumari district, have reported 24 fern species including 8 rare species such as *Adiantum latifolium*, *Acrostic humaureum*, *Blechnum orientale*, *Ceratopteris thalictroides*, *Cheilanthes thwaitesii*, *Pyrrhosia lanceolata*, *Tectariazei lanica* and *Vittaria elongata*. However the present collection is made in the Eastern Ghats of Tamil Nadu.

TAXONOMIC TREATMENT

Adiantum latifolium Lam., EnC. 1: 43.1783; C. Chr., Ind. Fil.(rept.) 28. 1906. (Figure 1& 2)

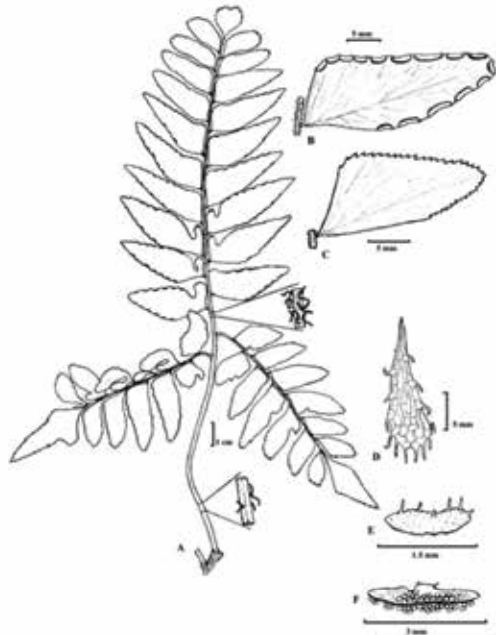


Fig. 1. *Adiantum latifolium* Lam. A. Habit B. Fertile Pinnae C. Sterile Pinnae D. Rhizome Scale E. Sorus at young stage F. Sorus at mature stage



Fig. 2. *Adiantum latifolium* Lam. A. Habit B. Rhizome scale

Description: Rhizome long creeping, often branched, densely scaly all over; scales lanceolate, about 2 × 0.5 mm, pale brown, apex acuminate, margin sparsely fimbriate. Stipes arranged in two alternate rows, up to 1 cm apart, about 11-25 × 0.2 cm, abaxially rounded, adaxially grooved, black, stiff, grey, glossy, glabrous below, gradually become pubescent above. Lamina broadly ovate, about 15-22 × 18-20 cm, bipinnate, apex acute, base broadly cuneate; primary pinnae one or two half pairs, alternate, up to 4 cm apart, slightly ascending, distinctly stalked; largest pinnae up to 15 × 7cm, oblong-lanceolate, acute; pinnules up to 12 pairs per primary pinna, basal two to four pairs slightly reduced, anadromous, patent, alternate, up to 1.5 cm apart, shortly stalked or sessile; largest pinnule 3-5 × 1 cm, oblong, straight or slightly falcate, one-third of the lower base excised, upper base truncate, apex acute, rarely rounded, upper margin and unexcised part of the lower margin of the sterile pinnules finely serrulate; veins slightly distinct above and below; long, narrow, pale brown hairs and scales densely distributed all over the costa and rachis; texture herbaceous. Sori oblong or reniform, distributed all along the upper margin and unexcised part of the lower margin, up to 3-5 × 1.5 mm, the dark brown reflexed margin incurved to form pale brown, thin, fimbriate indusium which protect the basal and lower side of the sori and thus the indusium is seated between the sorus and the lower surface of the pinnule; sporangia and spores abortive.

Distribution: INDIA: Kerala, Tamil Nadu; SRI LANKA and TROPICAL AMERICA.

Specimen examined: INDIA, Tamil Nadu, Madurai District, Alagar hills, 10°10'20.42 N and 78°14'05.38 E, elevation ±300 MSL, 16 January 2014, S. Soosairaj & P. Raja 1754(SJCBOT).

Ecology: Growing in wet places (along stream banks) at low elevations.

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