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Adiantum latifolium Lam. (Adiantaceae): An addition to pteridophytic flora of Andaman and Nicobar Islands, India

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ABSTRACT

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Adiantum latifolium Lam. is being reported as new record for the pteridophytic flora of Andaman and Nicobar Islands. The description, key to the species and photographs have been provided to differentiate this species from other *Adiantum* species occurring in these Islands.

Key-words: *Adiantum latifolium*, new record, Andaman and Nicobar Islands, India.

INTRODUCTION

The flora of Andaman and Nicobar Islands exhibits rich diversity of pteridophytes because of favourable climate and plentiful moisture (Dixit & Sinha 2001, Murugan & Harikrishnan 2012, Singh & Misra 2012). The pteridophytic flora of these Islands has been explored and documented by Kurz (1876), Ellis (1987), Sinha et al. (1999), Dixit and Sinha (2001) and Singh and Misra (2012).

Genus *Adiantum* (family Adiantaceae) comprises about 200 species across the world. From India, Nayar and Kaur (1974) reported 24 species of *Adiantum*, Dixit (1984) listed 25 species and two varieties and Chandra (2000) listed 23 species. Fraser-Jenkins (2008) reported that genus *Adiantum* has 14 species and 3 subspecies in India. From Andaman and Nicobar Islands, Dixit and Sinha (2001) and Pandey and Diwakar (2008) reported 3 species of this genus, viz. *Adiantum philippense* L., *A. stenochlamys* Bak. and *A. tenerum* Sw.

During the survey of pteridophytes in Andaman Islands, an interesting specimen was collected from 3 different localities. After the critical study of the morphological characters, the species was identified as *A. latifolium* which has never been reported earlier from Andaman and Nicobar Islands.

MATERIAL AND METHODS

The present study is based on the field exploration of different localities of Andaman. This species of *Adiantum* was collected from White Surf Water Fall of Little Andaman, Jhirka Tang and Dhannikhari Experimental Garden cum Arboretum at Nayashahar, Port Blair. The specimens were critically studied and identified. The herbarium specimens were processed and deposited in the Herbarium of the Botanical Survey

of India, Andaman and Nicobar Regional Centre, Port Blair (PBL). Rhizome scales and spores were observed under Nikon trinocular microscope (Eclipase 50 i) and the photographs were taken using the camera DS-Fi 1.

TAXONOMIC DESCRIPTION

Adiantum latifolium Lam., Enc. 1: 43 (1783); C. Chr., Ind. Fil. (Rept.) 28 (1906).

Plate 1, figures A-E

Description: Rhizome long-creeping, 2-3 mm in diameter and covered with pale brown scales. Scales lanceolate, about 2 x 0.5 mm, margin sparsely fimbriate, apex acuminate. Stipe black and glossy, about 25-50 cm long, abaxially rounded, adaxially grooved and pubescent. Lamina broadly ovate, 20-40 x 18-30 cm, bipinnate compound at the base, simple pinnate at the apex; pinnae dark green, alternate, stalked, oblong-lanceolate, acute, largest pinna up to 16 x 6 cm, pale brown hairs and scales are distributed throughout the costa and rachis; pinnules about 12 pairs, dimidiate, oblong to triangular, sometimes slightly falcate, shortly stalked or subsessile, largest pinnule 2.5 - 4 x 1 cm, basal two to three pairs comparatively reduced, alternate, veins slightly distinct on both sides, forked about 4-5 times, reaching the margin. Sori marginal, reniform to oblong, each with a reflexed flap of the margin acting as an indusium; spores triangular, trilete, some are orbicular (may be abortive), about 30 x 30 µm.

Habitat: This species grows in the slopes and ground near water channel in the open canopy.

Specimens examined: India: Andaman and Nicobar Islands, Little Andaman, Hut Bay, White Surf Water Fall, 02.4.2015, ca. 35 m, Lat. 10° 37' 17.6" N, Long. 92° 31' 27.6" E, Lal Ji Singh 25902 (PBL); Port Blair, Nayashahar, Dhannikhari Experimental Garden cum Arboretum, 21.5.2015, 20 m, Lat.11° 34' 24.13° N, Long. 92° 40' 30.78° E, Sandip Ku. Behera and Sanjay Mishra 32301(PBL); Jhirka Tang, 07.6.2015, 14 m, Lat. 11° 50' 13.27° N, Long. 92°40' 00.01° E, Sandip K. Behera 32302 (PBL).

Key to the species:

1. a. Fronds simple pinnate ..... *A. philippense*
   b. Fronds bi or tripinnate 2
2. a. Fronds bipinnate ..... *A. latifolium*
   b. Fronds tripinnate 3
3. a. Fronds 3 pinnate; pinnules fan-shaped; not joined at the base of stalk ..... *A. stenochlamys*
   b. Fronds 3-4 pinnate; pinnules rhomboidal-shaped; joined at the base of stalk ... *A. tenerum*

DISCUSSION AND CONCLUSION

Adiantum latifolium is native to tropical America from Mexico to South America, as well as the Greater Antilles, Virgin Islands and Trinidad. In India, it has occasional distribution in Maramalai of Tamil Nadu and in Kerala Ghats (Chandra 2000). In the present study also, very small populations with few individuals of this species were found in all the three areas of its occurrence. *A. latifolium* is used in Latin American traditional medicine as anxiolytic, analgesic and anti-inflammatory. The antinociceptive and anti-inflammatory properties of the methanolic extract of this species on animal models have been confirmed by Nonato et.al. (2011). Hence, it needs to be conserved. In this regards, we have endeavored for the ex-situ conservation of *A. latifolium* in the Dhannikhari Experimental Garden cum Arboretum of Botanical Survey of India, Andaman & Nicobar Regional Centre, Nayashahar, Port Blair.

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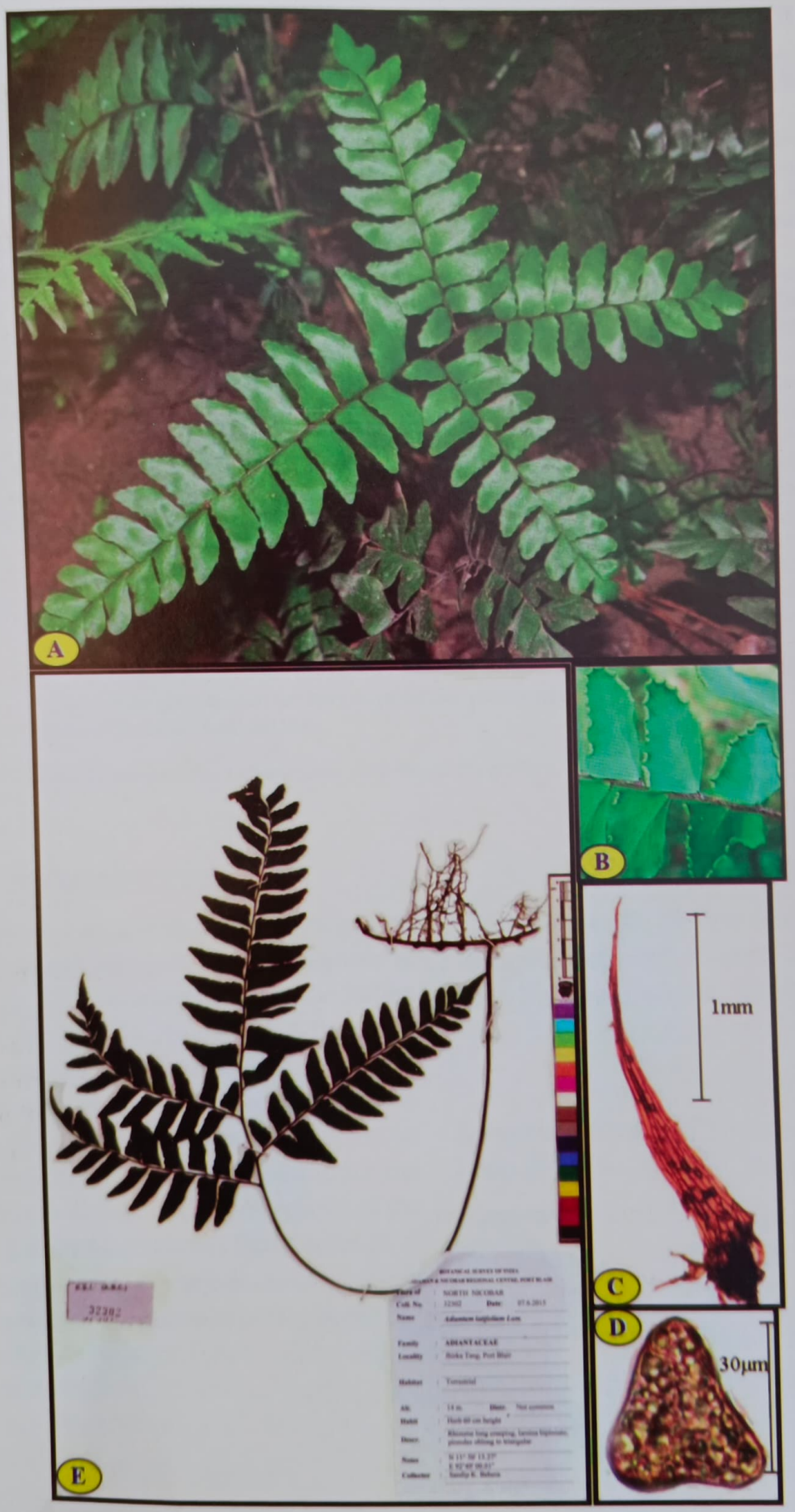

Plate 1

A-E. *Adiantum latifolium* Lam. A. Plant in natural habitat. B. Fertile pinnule. C. Rhizome scale. D. Trilete spore. E. Herbarium specimen.

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