PTERIDOPHYTE FLORA OF RAMPAHAR AND SITAPAHAR RESERVE FORESTS UNDER RANGAMATI DISTRICT IN BANGLADESH

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Key words: Pteridophyte flora, Reserve forest, Bangladesh

Abstract

A taxonomic survey was conducted to study pteridophyte flora of Rampahar and Sitapahar reserve forests under Rangamati district in Bangladesh. The survey was accompanied with collection of voucher specimens of the available pteridophyte species in the area and deposition at Bangladesh National Herbarium as reference material. The study found 41 pteridophyte species belonging to 26 genera under 13 families from the area. It constitutes 21 per cent of total fern flora of the country including one threatened species viz. Tectaria chittagamica (Clarke) Ching.

Introduction

Rampahar and Sitapahar forests reserve is one of the richest botanical areas in the Chittagong Hill Tracts region which was declared as the first reserve forest in 1875 from this area. The under explored forests of Rampahar and Sitapahar areas represents tropical rain forest mainly of evergreen type of vegetation. The forests are situated in Kaptai Upazila under Rangamati district. Administratively, the area belongs to Kaptai Forest Range under the management of Rangamati South Forest Division. The forests lie between 22°26’ and 22°38’ North and 92°08’ and 92°17’ East and occupy an area of 966 hectares of hilly land. The configuration of the ground is very irregularly rugged and consists of a series of ridges and valleys running more or less from north to south. The level of valley bottoms ranges from 30 to 90 m above the sea level and maximum elevation is about 500 m. The hill soils are mainly yellowish-brown to reddish-brown loams and soil pH varies from 5.5-6.03. Though the area is very rich in species diversity but a comprehensive floristic study of the area is still lacking. Presently this natural forest is under enormous and persistent threats mainly due to different anthropogenic activities. As a result a number of economically important species/germplasm stocks have become endangered or threatened and perhaps extinct of a few. Therefore, it is essential to have an inventory of the forest wealth for conservation and sustainable management.

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Pteridophytes are a group of plants which demand attention from anyone who studies nature in Bangladesh, but this group of plants have been excluded from most cases of floristic studies. Prain\(^2\) was the first person who enumerated 98 taxa of fern from the then East Bengal (present Bangladesh) but nomenclature of those taxa has been changed much in the recent year. After the independance of Bangladesh, only a very few studies on fern flora have been done by Pasha and Mallick\(^3\), Pasha and Chakraborty\(^4\), Pasha\(^5\), Mirza and Rahman\(^6\), Uddin and Pasha\(^7\), Uddin\(^8\). Recently, Siddiqui et al.\(^9\) compiled 195 species of pteridophyte from Bangladesh. Most of those works were based mainly on survey of available literatures and examination of deposited voucher specimens at different herbaria. In Bangladesh, ecosystem/forest/habitat wise fern flora study attempt has been done by few (Uddin and Pasha)\(^{10,11}\). Hence, the floristic study of Rampahar and Sitapahar reserve forests was carried out aiming to generate baseline information for any conservation and management activity of the areas.

**Materials and Methods**

The present work deals with the pteridophyte species of Rampahar and Sitapahar forest areas and is based on the specimens collected through extensive field search. The floristic inventory was done by using area maps and regular field visits, accompanied by the collection of fertile specimens of all available plant species. A total of 19 botanical exploration tours were made during 2001-2008 and over 200 field numbers of plants were collected. The areas were visited in every month and the forest was reached by walking on foot following the existing forest trails. The herbarium specimens were examined for comparison at the Bangladesh National Herbarium, Dhaka University Salar Khan Herbarium and Bangladesh Forest Research Institute Herbarium. Collected specimens were identified by consulting Beddome\(^{12}\), Clarke\(^{13}\), Holttum\(^{14,15}\), Dixit\(^{16}\), Siddiqui et al.\(^9\) and Smitinand and Larsen\(^{17,18}\). The specimens have been preserved at the Bangladesh National Herbarium (DACB). Fern families have been arranged according to the classification of Tagawa and Iwatsuki\(^{19}\). The genera and species under each family have been arranged alphabetically. Each species has been furnished with valid name, full original citation, well-known synonym (in few cases), habit, ecology and representative specimen.

**Results and Discussion**

The present floristic study has identified following fern species from Rampahar and Sitapahar reserve forest areas.

**SELAGINELLACEAE** Willkom (1861).


**EQUISETACEAE** L. C. Richard *ex* de Candolle (1805).


**OPHIOGLOSSACEAE** (R. Br.) Agardh (1882).


**MARATTIACEAE** Berchtold *et* Presl (1820).


**POLYPODIACEAE** Berchtold *et* Presl (1820).


**SCHIZAEACEAE** Kaufl. (1824).


**PTERIDACEAE** Ching (1982).


17. **Doryopteris ludens** (Wall. ex Hook.) J. Sm., Hist. Fil.: 189 (1875). Long creeping, rhizomatous herb. *Occasionally occurs in Rampahar area in shady forest beds.


VITTARIACEAE (Presl) Ching (1940).


ASPLENIACEAE Frank (1877).


DROOPTERIDACEAE Ching (1941).


**LOMARIOPSISIDACEAE** Alton (1956).


Floristic study of Rampahar and Sitapahar reserve forests has recorded a total 41 pteridophyte species distributed in 26 genera and 13 families. Of which, one species is aquatic, eight species are epiphytic and 32 species are terrestrial. Analysis shows that four families viz. Pteridaceae (11 species), Dryopteridaceae (7 species), Polypodiaceae (6 species) and Thelypteridaceae (5 species) constitute more than 70 per cent of total fern flora of the area, whereas, remaining nine families constitute less than 30 per cent. The study has found that 17 species are confined to Rampahar area, 14 species are confined to Sitapahar and only 10 species occur in both Rampahar and Sitapahar areas. This indicates
that fern species are very much specific to their substrates or habitats. Among those species, *Tectaria chattagramica* (Clarke) Ching has been enlisted in Red data book by Khan et al. The analysis also found that the study area (only 966 hectares of land) harbours 21 per cent of total fern flora of the country. Hence, it can be concluded that the area is an important habitat for fern species in the country.

**Acknowledgements**

Author's special thanks to the authority of the Bangladesh Forest Department for their co-operation during the field works. They are grateful to the authorities of the following herbaria for allowing to consult their libraries and use their herbarium materials *viz.* Bangladesh National Herbarium (DACB), Dhaka University Salar Khan Herbarium and Bangladesh Forest Research Institute Herbarium, Chittagong (BFRI).

**References**


(Manuscript received on 13 September, 2011; revised on 13 June, 2012)